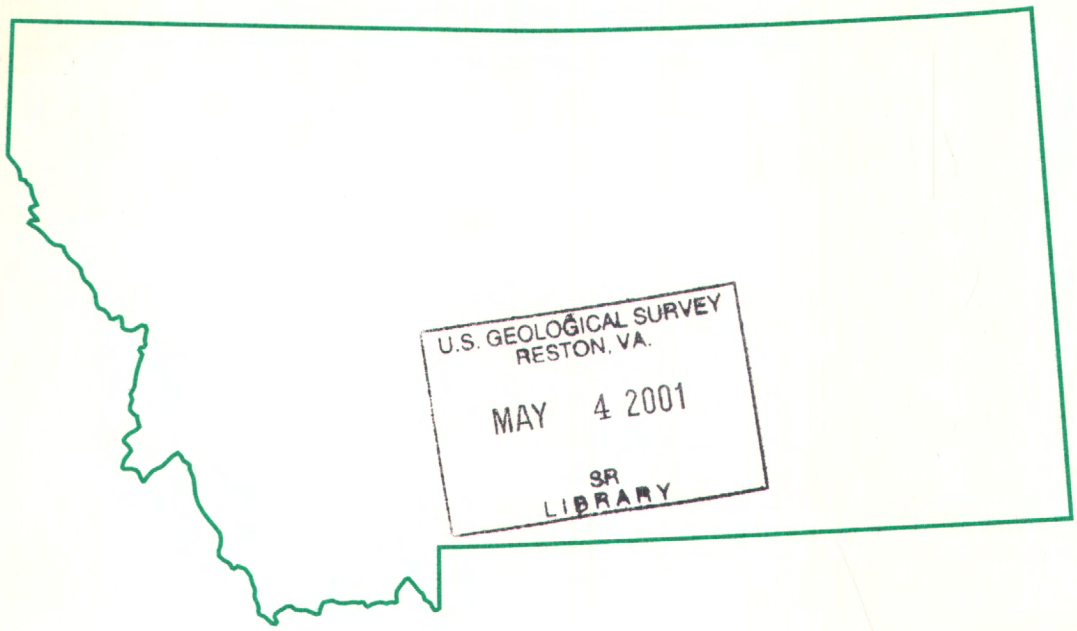
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Water Resources Data Montana Water Year 2000

Water-Data Report MT-00-1



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Prepared in cooperation with the State of Montana and with other agencies

CALENDAR FOR WATER YEAR 2000

1999

OCTOBER

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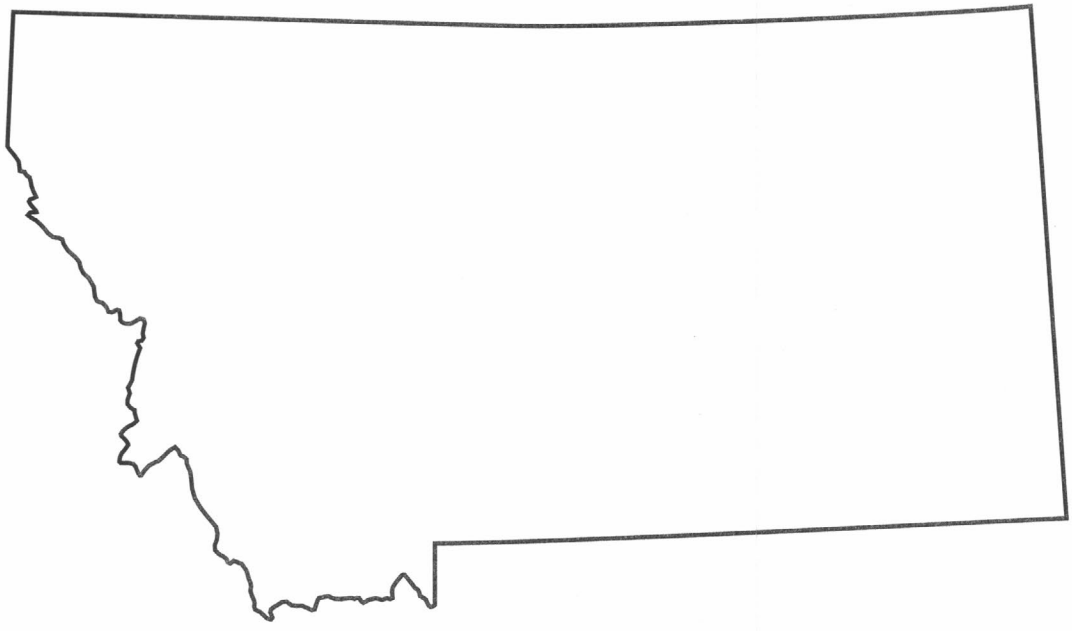
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U.S. Geological Survey

Water Resources Data Montana Water Year 2000

By R.R. Shields, M.K. White, P.B. Ladd, C.L. Chambers, and K.A. Dodge

Water-Data Report MT-00-1



Prepared in cooperation with the State of Montana
and with other agencies

U.S. DEPARTMENT OF THE INTERIOR

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U.S. GEOLOGICAL SURVEY

Charles G. Groat, Director

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3162 Bozeman Avenue
Helena, Montana 59601

2001

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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This report is one of a series issued State by State under the general direction of R.M. Hirsch, Associate Director for Water. This report was prepared by the U.S. Geological Survey in cooperation with the State of Montana and with other agencies, under the supervision of R.E. Davis, District Chief, and W.J. Carswell, Jr., Regional Hydrologist, Central Region.

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Water resources data for Montana for the 2000 water year 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 report contains discharge records for 234 gaging stations; stage and/or content records for 8 lakes and large reservoirs and content for 31 smaller reservoirs; water-quality records for 105 streamflow stations (29 ungaged), 3 lakes, and 1 ground-water well; precipitation records for 2 atmospheric deposition stations; and water-level records for 47 observation wells. Additional water year 2000 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 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 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 during many water 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 in this report series entitled, "Water Resources Data, Montana."

This report includes records on both surface and ground water from stations within the State and a few pertinent stations in bordering states. Specifically, it contains (1) discharge records for 234 streamflow-gaging stations; (2) stage and/or content records for 8 lakes and large reservoirs and content for 31 smaller reservoirs; (3) water-quality records for 106 streamflow-gaging stations (29 ungaged), 3 lakes, and 1 well; (4) precipitation records for 2 atmospheric deposition stations, and (5) water-level records for 47 observation wells. Additional data for water year 2000 were collected at crest-stage gage and miscellaneous measurement sites but are not published in this report. These data are stored within office files in the USGS office in Helena and are available on request. The locations of streamflow-gaging stations are shown later in the report in figure 6, water-quality stations in figure 7, and ground-water observation wells in figure 8. These data represent that part of the National Water Data System collected by the USGS and cooperating Federal, State, and local agencies and Tribal governments in Montana.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of USGS Water-Supply Papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these Water-Supply Papers were in an annual series and then in a 5-year series for 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 consulted in the libraries of the principal cities of the United States or may be purchased from USGS, Branch of Information Services, Box 25286, Denver, Colorado 80225.

For water years 1961 through 1970, streamflow data were released by the USGS in annual reports for each State. Water-quality records for water years 1964 through 1970 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1971 water year, data for streamflow, water quality, and ground water are published in official USGS reports for each State. These official USGS 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, this volume is identified as "U.S. Geological Survey Water-Data Report MT-00-1." These water-data reports 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.

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, (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 2000, agencies and organizations that supported data collection through cooperative agreement with the USGS are:

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

Tribal Governments
- Blackfeet Nation
- 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
- Montana Disaster and Emergency Services
- Wyoming State Engineer

Federal Energy Regulatory Commission Licensees
- Avista Corporation
- Montana Power Company

Local Agencies
- Cascade County Conservation District
- Lewis and Clark County Water Protection District
- Park Conservation District
- Teton County Conservation District

GENERAL HYDROLOGIC SETTING

Montana, with an area of about 147,200 mi^2 (square miles) (fig. 1), is the fourth largest State in the Union. The major river 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 streamflow. The upper Columbia River basin drains 18 percent of the State and provides slightly more than 50 percent of the total 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 Province. The Northern and Middle Rocky Mountains Provinces are characterized by rugged mountains and intermontane valleys, whereas the Great Plains Province consists of rolling to dissected plains and small mountain ranges. The elevation ranges from more than 12,000 feet in the mountains northeast of Yellowstone National Park to about 1,850 feet where the Kootenai River flows from the State in northwestern Montana.

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 eastern and south-central Montana and in some of the western intermontane valleys. The effects of geographic and topographic features on warm, moist air from either the Gulf of Mexico or the Pacific Ocean are reflected by the diverse precipitation pattern in Montana. 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 spring 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 1952 in northeastern Montana is an example of spring snowmelt flooding. The flood in May 1981 in west-central Montana is an example of runoff 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, recommended standards or criteria for domestic and agricultural uses may be exceeded. The ionic composition of surface water can vary markedly between the western mountains and the eastern plains. In the western mountains, where the rocks generally are older and more resistant to weathering, the streamflow characteristically is a calcium bicarbonate type. The dissolved-solids concentrations in mountain streams seldom exceed 500 mg/L (milligrams per liter), even during base-flow conditions. Surface water in the eastern plains, where sedimentary rocks are dominant, commonly is a sodium sulfate type, with dissolved-solids concentrations ranging from about 100 to 8,000 mg/L. Snowmelt and intense rainstorms sometimes produce large quantities of runoff that can dilute concentrations of dissolved solids and modify chemical composition. Calcium and bicarbonate typically occur in greater proportions during runoff. An exception to these general characteristics is in the northeastern part of the State, where streamflow typically is a sodium bicarbonate type.

In the Hudson Bay and upper Missouri River basins, ground water is present in intermontane valleys in alluvial deposits along streams, in glacial deposits, and in consolidated rocks. In the upper Columbia River basin, ground water is present primarily in the alluvial and glacial deposits of the intermontane valleys. Alluvial deposits generally are the most productive aquifers, and yields to wells along the major streams may be several hundred gallons per minute. These deposits are readily recharged by precipitation, by streams during periods of high flow, and by applied irrigation water. The particle size distribution of glacial deposits largely determines their potential for yielding water to wells. Where outwash gravels are present, the potential for developing large-yield wells is good, whereas yields from wells completed in glacial till generally are limited to a few gallons per minute. Many consolidated-rock formations yield water but, because of the complexity of the geology, rocks might not yield water in all areas. Yields from wells completed in consolidated rocks generally are only a few gallons per minute. However, several hundred gallons per minute can be obtained from fractured or cavernous formations in some areas. The well depth required to reach a given aquifer varies with location.

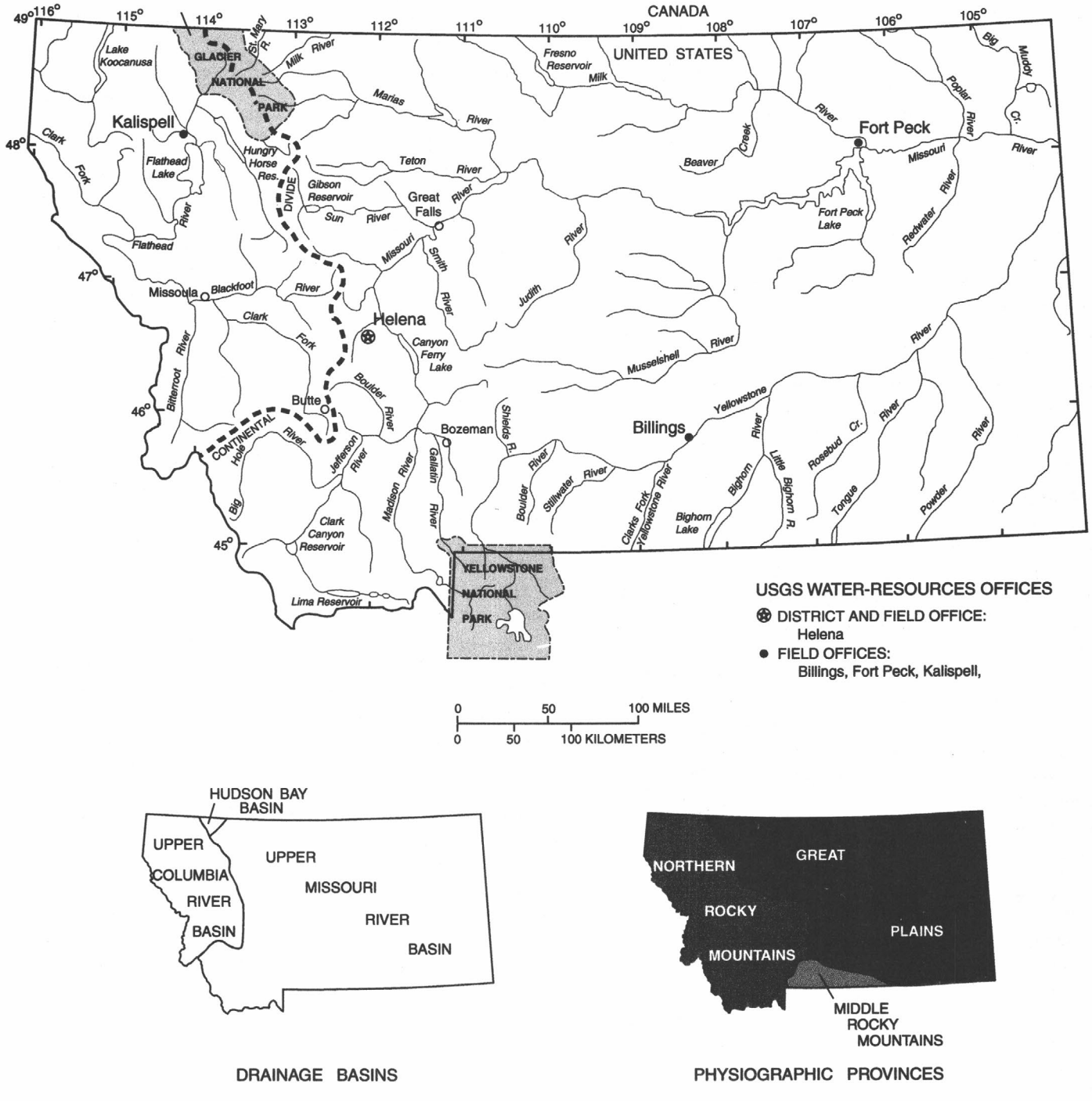


Figure 1. General geographic features of Montana.

HYDROLOGIC-MONITORING ACTIVITY, WATER YEAR 2000

Four streamflow-gaging stations were established during water year 2000 to aid in the assessment of the State's water resources. The new stations were Judith River near mouth, near Winifred; Milk River at Cree Crossing, near Saco; Tongue River below Brandenberg Bridge, near Ashland; and Blackfoot River above Nevada Creek, near Helmville. Five streamflow stations were installed on small ephemeral streams to aid in the study of the water resources of the Charles M. Russell National Wildlife Refuge. In addition, two water-quality stations were established in the Tongue River basin to aid in the assessment of baseline water quality in Montana.

Three streamflow-gaging stations were discontinued during or at the end of water year 2000: Lodge Pole Creek at Lodge Pole, Pryor Creek near Huntley, and Basin Creek near Yaak. The stations were discontinued because either sufficient data had been collected to meet the users' needs or funding was not available to continue the data collection.

SUMMARY OF HYDROLOGIC CONDITIONS, WATER YEAR 2000

Precipitation and Temperature

Weather in Montana during water year 2000 was influenced by the "La Nina" event, which was expected to result in a harsh winter but which, in fact, resulted in an extremely mild winter, followed by a warm, windy spring, and a hot, dry summer. Precipitation, departure from normal precipitation, and percentage of normal precipitation for seven climatological divisions of the State are listed 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, total precipitation for water year 2000 varied across the State from 68 percent of normal in southwestern Montana to 101 percent of normal in northeastern Montana. Precipitation from October through March was near normal (± 20 percent) over the western, north-central, and south-central parts of the State and below normal for the rest of the State. For April through September, precipitation ranged from 66 percent of normal in the southwestern division to 111 percent of normal in the northeastern division. Total average precipitation amounts for water year 2000 ranged from 9.87 inches for the north-central division stations to 16.72 inches for the western division stations.

Warmer and drier than normal conditions predominated over much of Montana from October through January with a persistent upper level ridge of high pressure dominating the weather pattern over Montana.[1] Warmer and drier conditions continued through February, March, and April. Temperatures were relatively normal for the month of May, but precipitation was below normal. On the average, temperatures were above normal for June and July while precipitation remained below normal. Temperatures were above normal in August, but precipitation was minimal. These climatic variations were responsible for the drought conditions that were experienced from June through early September in most of the State. In contrast, temperature and precipitation were nearly normal for the month of September as the ridge of high pressure, which

[1]National Weather Service, Great Falls, Mont., oral communication, 2000.

Table 1. Precipitation and departure from normal, in inches, and percentage of normal[1]

Climatological division (number of stations)	October 1999 through March 2000			April through September 2000			Water year 2000		
	Precipitation	Departure from normal, 1961-90	Percentage of normal	Precipitation	Departure from normal, 1961-90	Percentage of normal	Precipitation	Departure from normal, 1961-90	Percentage of normal
Western (40)	10.19	-0.14	99	6.53	-2.93	69	16.72	-3.09	84
Southwestern (22)	3.91	-1.55	72	6.99	-3.55	66	10.90	-5.10	68
North Central (39)	2.86	-0.45	86	7.01	-3.39	67	9.87	-3.84	72
Central (33)	2.95	-1.29	70	7.63	-3.11	71	10.58	-4.40	71
South Central (23)	4.55	-0.88	84	8.44	-3.00	74	12.99	-3.88	77
Northeastern (27)	1.68	-0.96	64	11.43	1.13	111	13.11	0.17	101
Southeastern (23)	2.50	-1.05	70	8.32	-1.31	86	10.82	-2.36	82

[1]Data from U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, 2000, Climatological Data, Montana: v. 102, no. 10 through v. 103, no. 9. Normals of precipitation are determined from the base period 1961-90.

had been preventing Pacific storms from entering the State, dissipated[1]. The exception to this weather pattern was in northeastern Montana, where precipitation for the year was average, although temperatures were above average. As an example, in March, Glasgow experienced the ninth warmest March since records were first kept starting in 1893.

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, in the report "Montana Water Supply Outlook." Percentages of normal water content of snowpack by drainage basin are listed in table 2.

The water content of mountain snowpack, as reported on March 1, 2000, ranged from 62 to 92 percent of normal. By April 1, the percentage-of-normal water content increased slightly in some basins from the previous month and ranged from 77 to 92 percent of normal. By May 1, the percentage-of-normal water content had decreased in all basins and ranged from 0 to 89 percent of normal. Overall, snowpack water content on May 1, 2000 was normal (± 20 percent) in four basins, and was below normal in the other eight basins.

Owing to the extremely dry conditions, forest and range fires in 2000 were numerous. By the end of July, "extreme" fire danger was reported throughout the State. By August, forest and range fires burned out of control in southwestern Montana in the Bitterroot and upper Big Hole basins (fig. 1), in the Helena and Townsend area, and several other areas of the State. It was not until substantial precipitation was received in mid-September that many of the fires were controlled.

Streamflow

Streamflow data for water year 2000 are compared to long-term data for water years 1961-90 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 for water years 1961-90, the annual discharge during water year 2000 was 94 percent of average at Middle Fork Flathead River near West Glacier (station 12358500); 70 percent of average at Clark Fork at St. Regis (station 12354500); 67 percent of average at Missouri River at Toston (station 06054500); 91 percent of average at Yellowstone River at Corwin Springs (station 06191500); 72 percent of average at Yellowstone River at Billings (station 06214500); 87 percent of average at Rock Creek below Horse Creek, near International Boundary (station 0619500); and 64 percent of average at Marias River near Shelby (station 06099500). Annual discharge for water year 2000 was less than that for water year 1999 at all seven stations.

The annual departure from mean annual discharge at two streamflow-gaging stations on unregulated streams is shown in figure 3. At Yellowstone River at Corwin Springs and Middle Fork Flathead River near West Glacier, streamflow in water year 2000 was slightly less than the long-term average for the period of record.

Table 2. Water content of mountain snowpack in Montana, as percentage of normal[1]

Drainage basin	2000				
	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1
Hudson Bay:					
St. Mary	71	85	89	92	87
Missouri:					
Upper Missouri	77	79	87	86	64
Sun-Teton-Marias	75	88	85	81	62
Judith-Musselshell	94	85	79	78	57
Milk	43	67	62	77	0
Upper Yellowstone	80	84	90	87	68
Bighorn	72	82	86	87	71
Tongue	85	93	92	88	83
Powder	82	78	86	85	62
Upper Columbia:					
Kootenai	99	97	91	90	89
Clark Fork	91	92	92	86	59
Flathead	82	92	91	92	82

[1]Data from U.S. Department of Agriculture, Natural Resources Conservation Service, J. L. Ward, written commun., 2000. Normals for snowpack are determined from the base period 1961-90.

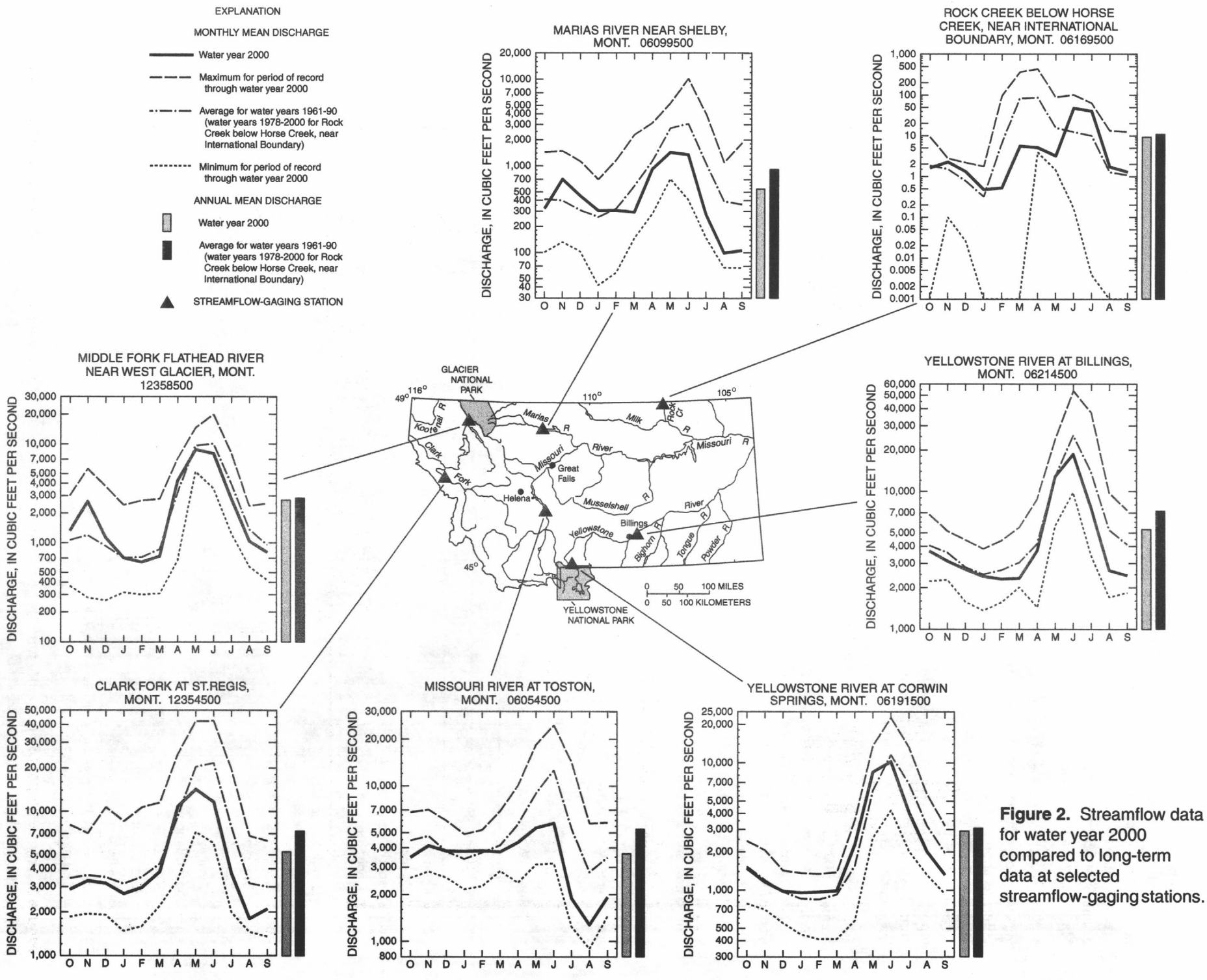


Figure 2. Streamflow data for water year 2000 compared to long-term data at selected streamflow-gaging stations.

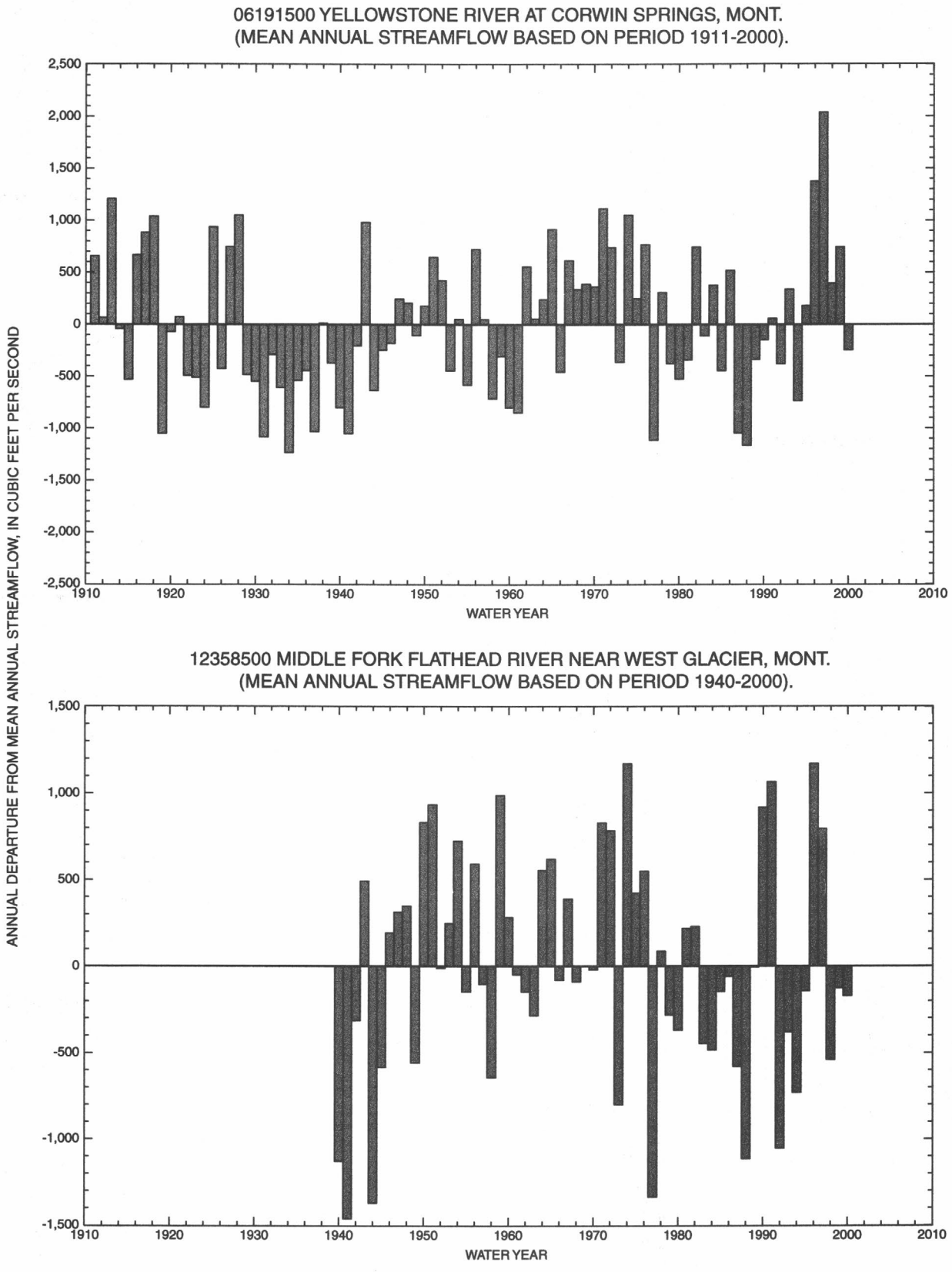


Figure 3. Annual departure from mean annual discharge at two streamflow-gaging stations on unregulated streams in Montana.

Table 3. Comparisons of instantaneous peak discharge for water year 2000 with instantaneous peak discharge for period of record at selected stations in Montana

[Symbols: <, less than; *, outside period of record]

Station number	Station name	Drainage area (square miles)	Peak discharge, water year 2000			Peak discharge, period of record	
			Date	Cubic feet per second	Recurrence interval (years)	Date	Cubic feet per second
05014500	Swiftcurrent Creek at Many Glacier	30.9	11/13	1,750	10-25	06/08/64	6,700
05017500	St. Mary River near Babb	276	11/16	2,990	2-5	06/09/64	16,500
06025500	Big Hole River near Melrose	2,476	05/29	2,480	<2	06/10/72	14,300
06054500	Missouri River at Toston	14,669	05/29	9,760	<2	06/12/97	34,000
06089000	Sun River near Vaughn	1,854	06/10	2,650	<2	06/09/64	53,500
06099500	Marias River near Shelby	3,242	05/24	2,190	<2	06/09/64	241,000
06115200	Missouri River near Landusky	40,987	05/07	8,460	<2	06/03/53	137,000
06120500	Musselshell River at Harlowton	1,125	05/30	115	<2	06/20/75	7,270
06154400	Peoples Creek near Hays	220	07/19	146	<2	06/08/72	8,460
06174500	Milk River at Nashua	22,332	07/14	2,180	<2	04/18/52	45,300
06191500	Yellowstone River at Corwin Springs	2,623	05/29	17,500	2-5	06/10/96, 06/06/97	32,200
06200000	Boulder River at Big Timber	523	06/08	3,930	<2	06/05/97	9,940
06214500	Yellowstone River at Billings	11,795	05/30	30,800	<2	06/12/97	82,000
06289000	Little Bighorn River at State Line, near Wyola	193	05/28	1,100	2	06/03/44	2,730
06308500	Tongue River at Miles City	5,397	06/04	1,470	<2	06/15/62	13,300
06329500	Yellowstone River near Sidney	69,103	06/01	36,000	<2	06/21/21	159,000
12301300	Tobacco River near Eureka	440	04/22	1,080	<2	05/13/91	3,180
12304500	Yaak River near Troy	766	05/04	4,690	<2	05/17/97, 05/54	12,600, *13,400
12332000	Middle Fork Rock Creek near Philipsburg	123	05/23	343	<2	06/16/74	1,680
12335500	Nevada Creek above reservoir, near Finn	116	03/27	138	<2	06/02/53	1,800
12340000	Blackfoot River near Bonner	2,290	04/23	4,930	<2	06/10/64	19,200
12354500	Clark Fork at St. Regis	10,709	05/24	18,700	<2	05/24/48, 05/18/97	68,900
12358500	Middle Fork Flathead River near West Glacier	1,128	05/23	15,300	<2	06/09/64	140,000
12370000	Swan River near Bigfork	671	06/17	3,580	<2	06/20/74	8,890

No extraordinary flooding occurred in any major river basins in Montana during water year 2000. However, flash flooding did occur in several small, ungaged drainages during intense storms that moved across the northeastern and central part of the State in July. Damage from this flash flooding was mainly confined to roads, bridges, and streambanks. Peak discharges at 24 selected streamflow-gaging stations for water year 2000 are compared to peak discharges for the period of record in table 3. No record peak discharges were recorded for any of these stations in water year 2000. In addition, the recurrence intervals of the water year 2000 peaks were 10-25 years at 1 station, 2-5 years at 2 stations, and 2 years or less at 21 stations.

Minimum daily discharges for selected streamflow-gaging stations for water year 2000 are compared to minimum instantaneous discharge for the period of record in table 4. No record minimum instantaneous discharges were recorded during water year 2000 at any of the selected long-term streamflow-gaging stations. However, due to drought conditions in July and August, minimum daily discharges had

Table 4. Comparisons of minimum daily discharge for water year 2000 with minimum instantaneous discharge for period of record at selected stations in Montana

[Abbreviation: e, estimated. Symbol: <, less than]

Station number	Station name	Drainage area (square miles)	Minimum daily discharge, water year 2000			Minimum instantaneous discharge, period of record	
			Date	Cubic feet per second	Recurrence interval (years)	Date	Cubic feet per second
05014500	Swiftcurrent Creek at Many Glacier	30.9	02/20	20	<2	11/14,16/76	0
06025500	Big Hole River near Melrose	2,476	08/30	126	5-10	08/17/31	49
06054500	Missouri River at Toston	14,669	07/28	1,100	5-10	07/31/89	450
06061500	Prickly Pear Creek near Clancy	192	08/03	4.3	50-100	01/26/58	0.5
06089000	Sun River near Vaughn	1,854	05/21	187	<2	04/24/44	20
06099500	Marias River near Shelby	3,242	08/29	59	5-10	08/20/19	10
06115200	Missouri River near Landusky	40,987	08/18	3,980	<2	07/08/36	1,120
06120500	Musselshell River at Harlowton	1,125	09/10	1.9	5-10	([1])	0
06174500	Milk River at Nashua	22,332	04/11	18	2-5	([1])	0
06181000	Poplar River near Poplar	3,174	12/21	10	<2	([1])	0
06191500	Yellowstone River at Corwin Springs	2,623	01/13	827	<2	02/02/89	343
06200000	Boulder River at Big Timber	523	09/18	58	2-5	08/26/61	10
06214500	Yellowstone River at Billings	11,795	01/31	1600	<2	12/12/32	430
06289000	Little Bighorn River at State Line, near Wyola	193	01/29	e54	<2	02/02/89	18
06308500	Tongue River at Miles City	5,397	05/12	23	2-5	07/09/40	0
06329500	Yellowstone River near Sidney	69,103	08/27	2,880	<2	05/17/61	470
12301300	Tobacco River near Eureka	440	08/27	57	<2	01/11/63	[2]20
12304500	Yaak River near Troy	766	08/28	98	<2	12/09/72	50
12332000	Middle Fork Rock Creek near Philipsburg	123	03/20	26	<2	02/09/53	5.3
12335500	Nevada Creek above reservoir, near Finn	116	08/21	3.9	2-5	([1])	<2.0
12340000	Blackfoot River near Bonner	2,290	01/31	e380	<2	02/02/89	156
12354500	Clark Fork at St. Regis	10,709	08/30	1,660	2	02/03/89	732
12358500	Middle Fork Flathead River near West Glacier	1,128	01/31	503	<2	11/27/52	<173
12370000	Swan River near Bigfork	671	02/01	380	<2	01/26-29/30	193

[1]At various times.
[2]Minimum daily discharge.

recurrence intervals of 5-10 years at four sites, recurrence intervals of 2-5 years at four sites, and a recurrence interval of 50-100 years at one site, Prickly Pear Creek near Clancy. Based on these long-term records, low flows this year generally were moderate to severe. Many of the low flows that were recorded were the result of upstream withdrawals and subsequent dewatering of many reaches of streams. This dewatering affected downstream water users, recreational floaters, and fisheries.

Major reservoirs in the upper Missouri River basin generally provided an adequate supply of irrigation water to users during the 2000 irrigation season. Reservoir managers conserved water in early spring to accommodate the anticipated less-than-normal runoff. The percentage of normal (based on water years 1961-90) storage by month for major reservoirs is listed in table 5. At the end of water year 2000, storage in Montana reservoirs was near normal except in the four irrigation reservoirs, where storage was less than normal owing to major releases due to the summer drought. Throughout much of the spring and early summer, storage in Fresno Reservoir was less than normal due to late runoff from the upper Milk River basin. Water supply shortages occurred during August on the Milk River and Sun River Projects, when storage and natural flow was insufficient to meet demands. Storage in small reservoirs of central and eastern Montana was severely depleted by late summer and generally unable to meet irrigation demands.

Table 5. Percentage of normal storage, by month, during water year 2000 for major reservoirs in Montana used to supply water principally for hydroelectric-power generation and irrigation

Reservoir	Usable capacity (acre-feet)	Percentage of normal storage based on 1961-90 period of record											
		1999			2000								
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Hydroelectric-power generation:													
Canyon Ferry Lake	2,043,000	92	92	94	98	99	99	99	92	88	87	85	83
Fort Peck Lake	18,910,000	99	100	100	100	101	100	99	96	91	90	89	89
Bighorn Lake	1,356,000	98	100	104	109	112	111	107	106	94	89	85	85
Hungry Horse Reservoir	3,451,000	112	119	122	124	120	117	119	114	108	100	95	99
Flathead Lake	1,791,000	109	99	79	70	86	94	117	106	100	100	98	97
Irrigation:													
Lima Reservoir	84,050	146	135	135	136	139	135	127	108	98	76	50	50
Clark Canyon Reservoir	255,600	112	114	114	113	113	112	107	91	71	55	52	52
Gibson Reservoir	99,050	108	118	104	88	92	97	140	107	98	58	24	22
Fresno Reservoir	103,000	77	78	77	74	69	56	75	57	38	31	40	67

Water Quality

The U.S. Geological Survey operates a network of water-quality stations throughout Montana in cooperation with numerous Federal, State, and local agencies and Tribal governments. The network changes 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 that is related to a specific condition. Other stations have been in operation for a large number of years and provide a basis for description of long-term water-quality conditions that represent a wide range of natural 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 statewide network of 37 stations was newly established in 1999 that incorporates both existing and new water-quality sites. The network will supplement the long-term record of water quality across the state and provide a reference for trends over time. In addition, intensive sampling is being conducted for 3 years at numerous sites in the Clark Fork and Yellowstone River basins as part of the National Water Quality Assessment (NAWQA) program.

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 established by the State of Montana[2] serve to illustrate the general range of 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. Water-quality criteria established by the State of Montana[2] indicate that water might not be suitable when dissolved-solids concentrations exceed 500 mg/L if used for human consumption, 1,200 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 8.0 mg/L for cold-water fish may be detrimental if sustained for extended periods of time.[3]

[2]Montana Department of Health and Environmental Sciences, 1986, Montana water quality, 1986: Helena, Montana Department of Health and Environmental Sciences, 1986 Montana 305(b) Report, 198 p.

[3]Montana Department of Environmental Quality, 1999, Montana numeric water quality standards: Helena, Mont., Planning, Prevention and Assistance Division, Standards and Economic Analysis Section, Circular WBQ-7, 41 p.

Nitrogen is an essential plant nutrient that occurs in several forms in surface water. Common sources of nitrogen are plant fertilizers, animal waste, and sewage or septic effluent. Nitrite and nitrate are forms of nitrogen that can occur in surface 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 as nitrogen concentrations in excess of 0.3 mg/L have the potential to cause nuisance growths of algae and other aquatic plants (Ivalou O'Dell, U.S. Geological Survey, written communication, 1994). In addition, human health can be adversely affected if the nitrate as nitrogen concentration exceeds 10 mg/L in drinking water[4].

Phosphorus 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 indication of eutrophication potential. Although phosphorus can originate naturally from igneous and sedimentary rock formations, more common sources include sewage, detergents, fertilizer, and livestock waste. Water-quality criteria established by the State of Montana[2] recommends that total phosphorus in streams should not exceed 0.1 mg/L as phosphorus to prevent plant nuisances. The EPA[5] also recommends that total phosphorus should not exceed 0.05 mg/L in streams discharging directly to lakes or 0.025 mg/L 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, human 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. An indirect measure of suspended-sediment concentration is turbidity, which represents the clarity of water as determined by light transmission through a water sample. In general, water with less than 10 NTU (nephelometric turbidity units) generally is suitable for cold-water aquatic life, whereas water with turbidity less than 50 NTU generally is suitable for warm-water aquatic life.[2]

Statistical summaries of selected water-quality measurements made at four long-term 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 2000 and the period of record through water year 1999. In addition, the central tendency of data collected over the period of record is described by the median (50th percentile).

Ground-Water Levels

Water levels were measured in 47 observation wells during water year 2000. Observation wells are used to monitor water levels that respond primarily to climatic conditions. However, several wells are within the zone of influence of human activities and water levels in these wells can be afffected by pumping or infiltration of applied irrigation water. Seventeen of the observation wells are equipped with continuous water-level recorders and have varying lengths of record. Individual data points from the continuous recorders are not presented in this report but are available at the District Office. Hydrographs for the 17 wells are shown in figure 4 and periodic water-level data for all 47 wells are presented in table 7. Water levels commonly fluctuate throughout the year and from year to year as a result of changes in climatic conditions or human activities. Several of the hydrographs show the effects of the below-average precipitation that occurred across much of Montana.

[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 stations in Montana for water year 2000 and the period of record through water year 1999

[Symbol: <, less than]

Station number	Station name	Water year 2000			Period of record through water year 1999			
		Number of samples	Minimum	Maximum	Number of samples	Minimum	Maximum	Median
Dissolved solids, in milligrams per liter								
06178500	East Poplar River at International Boundary	6	881	1,060	245	97	1,480	937
06185500	Missouri River near Culbertson	8	334	452	204	221	579	409
06329500	Yellowstone River near Sidney	11	175	535	262	162	885	476
12301933	Kootenai River below Libby Dam, near Libby	2	117	151	257	96	220	140
Dissolved oxygen, in milligrams per liter								
06178500	East Poplar River at International Boundary	6	5.3	13.0	241	.9	17.2	9.2
06185500	Missouri River near Culbertson	8	8.0	12.1	250	6.8	14.2	9.3
06329500	Yellowstone River near Sidney	12	7.3	11.8	449	4.4	14.6	8.6
12301933	Kootenai River below Libby Dam, near Libby	8	8.8	13.6	437	7.7	18.3	11.0
Dissolved nitrite plus nitrate as nitrogen, in milligrams per liter								
06178500	East Poplar River at International Boundary	6	<.05	.12	43	<.05	.29	.07
06185500	Missouri River near Culbertson	8	<.005	.02	129	<.005	.38	.01
06329500	Yellowstone River near Sidney	11	<.005	.29	192	<.005	.73	.21
12301933	Kootenai River below Libby Dam, near Libby	9	.05	.15	287	<.05	.79	.10
Total phosphorus, in milligrams per liter								
06178500	East Poplar River at International Boundary	6	<.05	.07	247	<.01	.40	.03
06185500	Missouri River near Culbertson	8	.08	.29	189	.01	.93	.08
06329500	Yellowstone River near Sidney	11	.03	.43	322	<.01	2.7	.09
12301933	Kootenai River below Libby Dam, near Libby	8	<.008	<.008	508	<.001	.43	.01
Suspended sediment, in milligrams per liter								
06178500	East Poplar River at International Boundary	6	48	110	212	4	322	52
06185500	Missouri River near Culbertson	8	142	349	150	19	2,370	248
06329500	Yellowstone River near Sidney	11	27	562	343	15	15,500	358
12301933	Kootenai River below Libby Dam, near Libby	3	1	2	4	1	2	2
Turbidity, in nephelometric turbidity units								
06178500	East Poplar River at International Boundary	6	3.2	22	197	.2	55	3
06185500	Missouri River near Culbertson	8	14	110	92	.9	370	27
06329500	Yellowstone River near Sidney	11	10	180	163	1.0	2,500	64

BEAVERHEAD COUNTY

SITE IDENTIFICATION.--450937112393701. Local number 08S09W01CCCC01.

LOCATION.--Lat 45°09'37", long 112°39'37", Hydrologic Unit 10020002. Owner: U.S. Geological Survey.

HYDROGEOLOGIC UNIT.--Tertiary sediments.

WELL CHARACTERISTICS.--Drilled in 1966, casing diameter 6 in., depth 47 ft.

INSTRUMENTATION.--Graphical water-level recorder from April 1967 to January 1981. Digital water-level recorder set to record every hour from July 1991 to current year.

DATUM.--Elevation of land-surface datum is 5,240 ft above sea level, from topographic map. Measuring point: top of casing, 2.15 ft above land-surface datum.

REMARKS.--Water levels affected by irrigation. No record from May 8-10, 2000. All water levels are reported below land-surface datum.

PERIOD OF RECORD.--August 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 10.43 ft, Aug. 10, 1971 (from recorder); lowest, 36.07 ft, Sept. 20, 1989 (measured).

EXTREMES FOR WATER YEAR 2000.--Highest water level 22.21 ft, Oct. 1, 1999 (from recorder); lowest, 31.47 ft, Apr. 19, 24, 2000 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 28	25.55	May 02	30.65
Feb 03	30.19	Jul 26	22.93
Mar 15	30.88	Aug 24	25.58

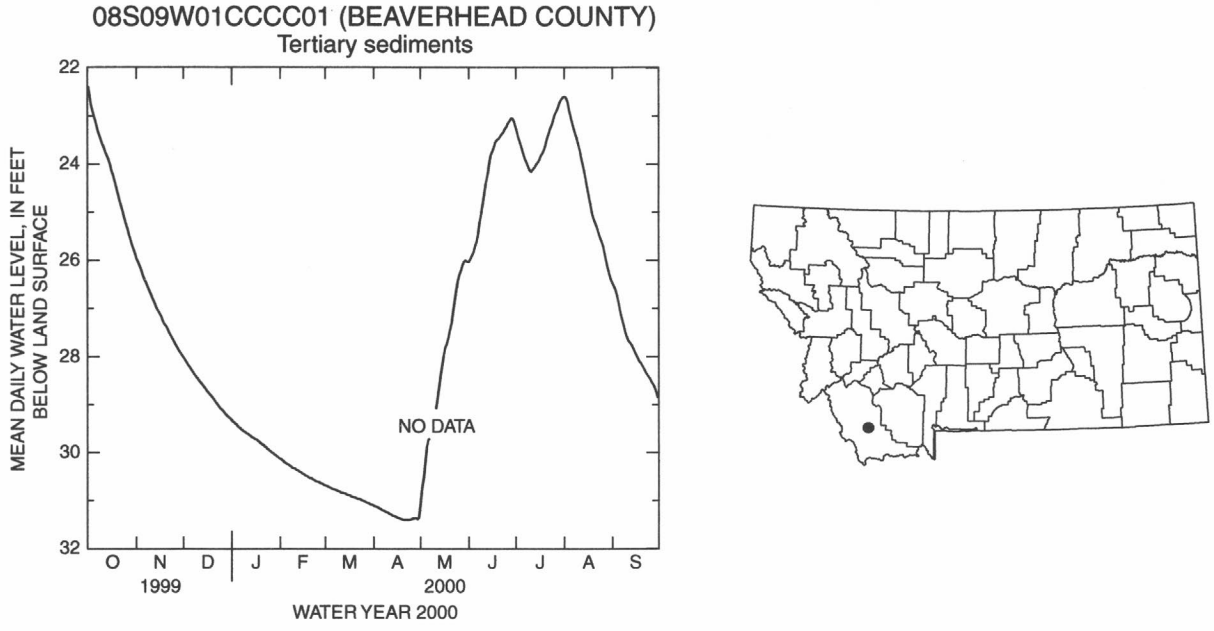


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000.

BEAVERHEAD COUNTY

SITE IDENTIFICATION.--450524112380701. Local number 08S08W31CCAA01.

LOCATION.--Lat 45°05'24", long 112°38'07", Hydrologic Unit 10020002. Owner: Matador Cattle Company.

HYDROGEOLOGIC UNIT.--Tertiary sediments.

WELL CHARACTERISTICS.--Drilled in March 1993, casing diameter 5 in., depth 217 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every 4 hours from November 1997 to present.

DATUM.--Elevation of land-surface datum is 5,520.7 ft above sea level. Measuring point: top of casing, 2.20 ft above land-surface datum. Measuring point changed to 2.00 ft on Feb. 3, 2000. Reference point of 8.71 ft established on May 20, 1999.

REMARKS.--All water levels are reported below land-surface datum.

PERIOD OF RECORD.--Measured periodically December 1992 to November 1997 and continuously recorded every 4 hours from November 1997 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 138.72 ft, Oct. 23, 1995 (measured); lowest, 161.14 ft, May 18, 1995 (measured).

EXTREMES FOR WATER YEAR 2000.--Highest water level 152.71, Oct. 1, 1999 (from recorder); lowest 160.37, Sept. 30, 2000 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 28	153.38	May 02	157.82	July 26	159.34
Feb 03	155.82	June 15	158.68	Aug 24	159.86
Mar 15	156.83				

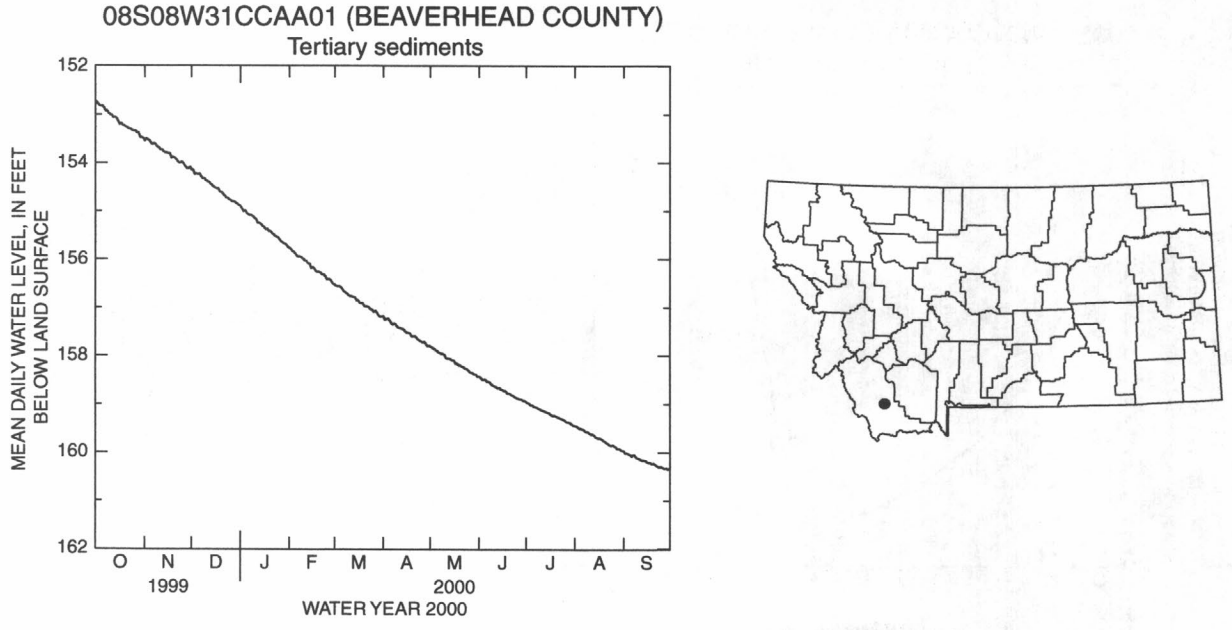


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

BLAINE COUNTY

SITE IDENTIFICATION.--475959108400801. Local number 26N24E20BBCB01.

LOCATION.--Lat 47°59'59", long 108°40'08", Hydrologic Unit 10050009. Owner: Fort Belknap Tribes.

HYDROGEOLOGIC UNIT.--Mississippian Lodgepole Limestone.

WELL CHARACTERISTICS.--Drilled in September 1991, casing diameter 4 in., depth 475 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every 4 hours from Feb. 2-23, 1999. Electronic water-level recorder set to record every 6 hours from Feb. 24, 1999 to Apr. 24, 2000.

DATUM.--Elevation of land-surface datum is 3,750 ft above sea level, from topographic map. Measuring point: top of PVC, 1.80 ft above land-surface datum. Reference point of 19.99 ft (top of steel rod) established June 9, 1999.

REMARKS.--No data logger record after Apr. 24, 2000. All water levels are reported below land-surface datum.

PERIOD OF RECORD.--Periodically from 1991 to 1994 and continuously recorded from Feb. 2, 1999 to Apr. 24, 2000. The well was destroyed sometime after Apr. 25, 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.90 ft, May 17, 1999 (from recorder); lowest, 22.19 ft, Feb. 18, 1992 (measured).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 16.13 ft, Oct. 9-11, 13, 1999 (from recorder); lowest, 17.56 ft on Apr. 24, 2000 (recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL
Oct 20	16.25
Jan 18	16.65
Apr 25	17.54

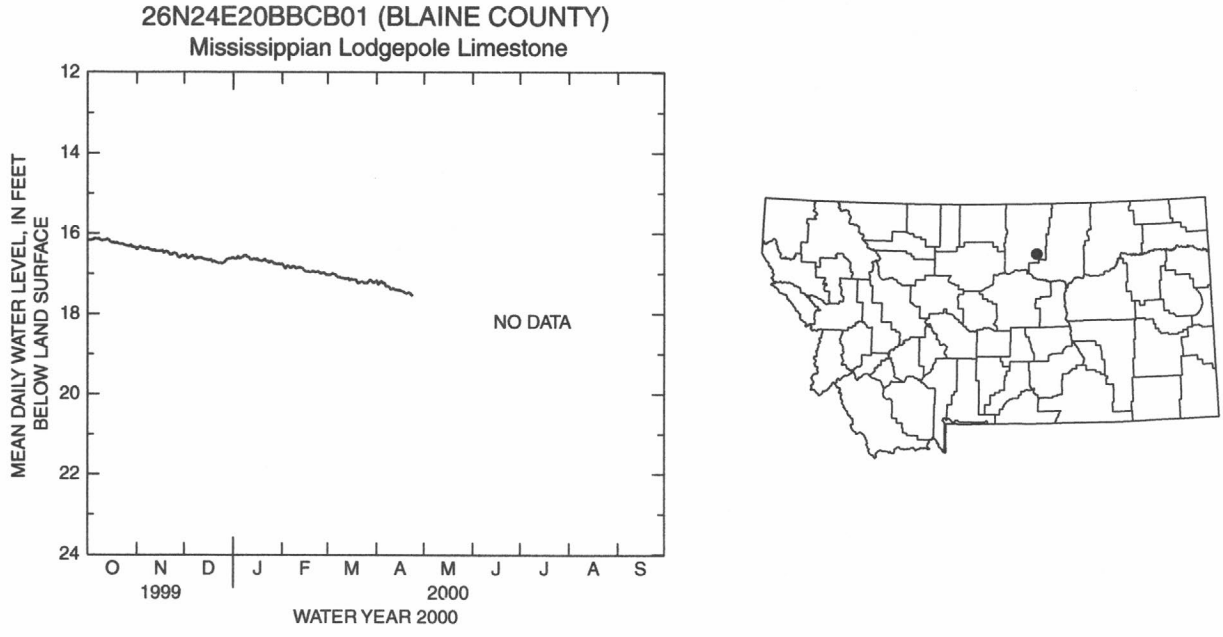


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

CASCADE COUNTY

SITE IDENTIFICATION.--472203111112602. Local number 19N04E26CACC02.

LOCATION.--Lat 47°22'03", long 111°11'26", Hydrologic Unit 10060006. Owner: E. Chartier

HYDROGEOLOGIC UNIT.--Lower Cretaceous Kootenai Formation.

WELL CHARACTERISTICS.--Drilled in 1983, casing diameter 4 in., depth 198 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every 4 hours from Dec. 16, 1998 to present. (Montana Bureau of Mines and Geology operated site from May 1987 to October 1998.)

DATUM.--Elevation of land-surface datum is 3,817 ft above sea level, from topographic map. Measuring point: top of casing, 1.10 ft above land-surface datum. Reference point of 3,817.19 established on Apr. 26, 1999.

REMARKS.--All water levels are reported below land-surface datum.

PERIOD OF RECORD.--August 1984 to May 1987 and December 1998 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 137.03 ft, Apr. 8-13, 1999 (from recorder); lowest, 137.96 ft, Dec. 1, 1998 (measured).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 137.14 ft, Oct. 9-15, 1999, May 25-30, 2000 (from recorder); lowest, 137.34 ft, Dec. 26-29, 1999 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 05	137.15	Apr 06	137.28
Jan 07	137.30	Apr 25	137.18
Feb 23	137.31	Aug 03	137.19

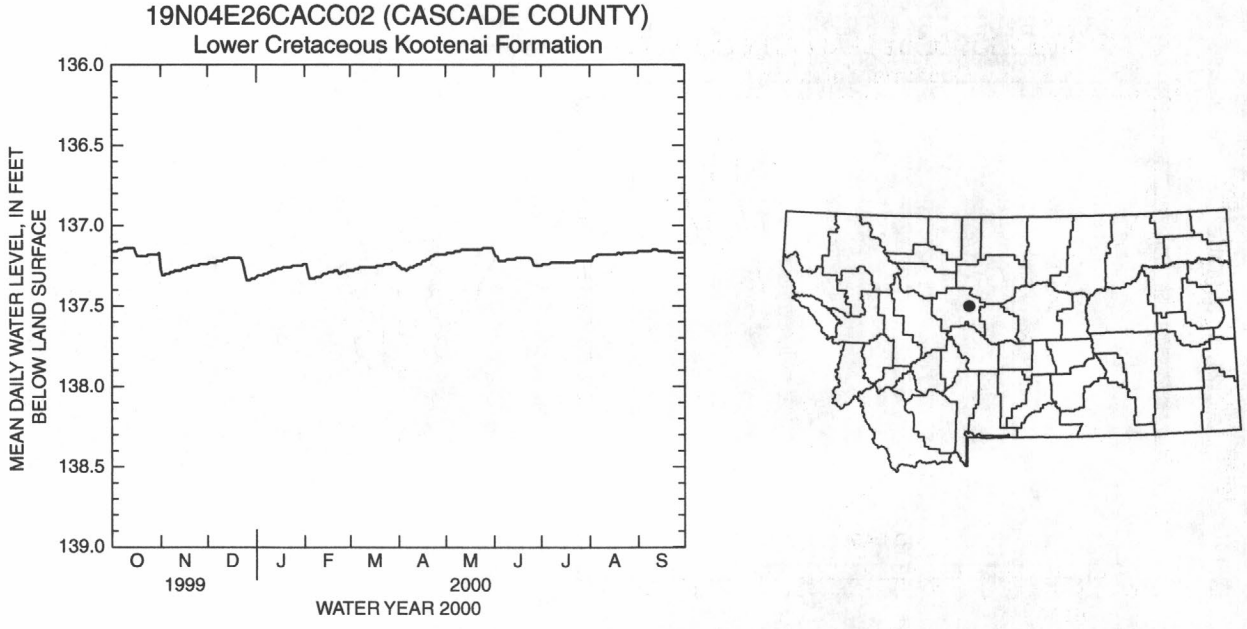


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

GALLATIN COUNTY

SITE IDENTIFICATION.--454809111095401. Local number 01N04E25DCDD01.

LOCATION.--Lat 45°48'09", long 111°09'54", Hydrologic Unit 10020008. Owner: U.S. Geological Survey.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in August 1951, casing diameter 6 in. to depth of 400 ft. Well filled in with gravel to within 101 ft of land surface.

INSTRUMENTATION.--Graphic recorder from May 1954 to August 1977. Digital water-level recorder set to record every hour from May 1991 to present.

DATUM.--Elevation of land-surface datum is 4,385 ft above sea level from topographic map. Measuring point: top of casing 1.60 ft above land-surface datum.

REMARKS.--No record from Apr. 18-27, 2000. All water levels are reported below land-surface datum.

PERIOD OF RECORD.--1954 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level 5.91 ft, Aug. 13, 1968 (from recorder); lowest, 18.91 ft, Apr. 28, 2000 (from recorder).

EXTREMES FOR WATER YEAR 2000.--Highest water level 12.40 ft, June 28, 2000 (from recorder); lowest, 18.91 ft, Apr. 28, 2000 (from recorder). Water level might have been lower during period of no record.

MEASURED WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 29	14.56	Apr 17	18.88	Aug 31	14.73
Jan 25	17.05	Jul 18	14.16	Sep 20	15.14
Mar 15	18.22				

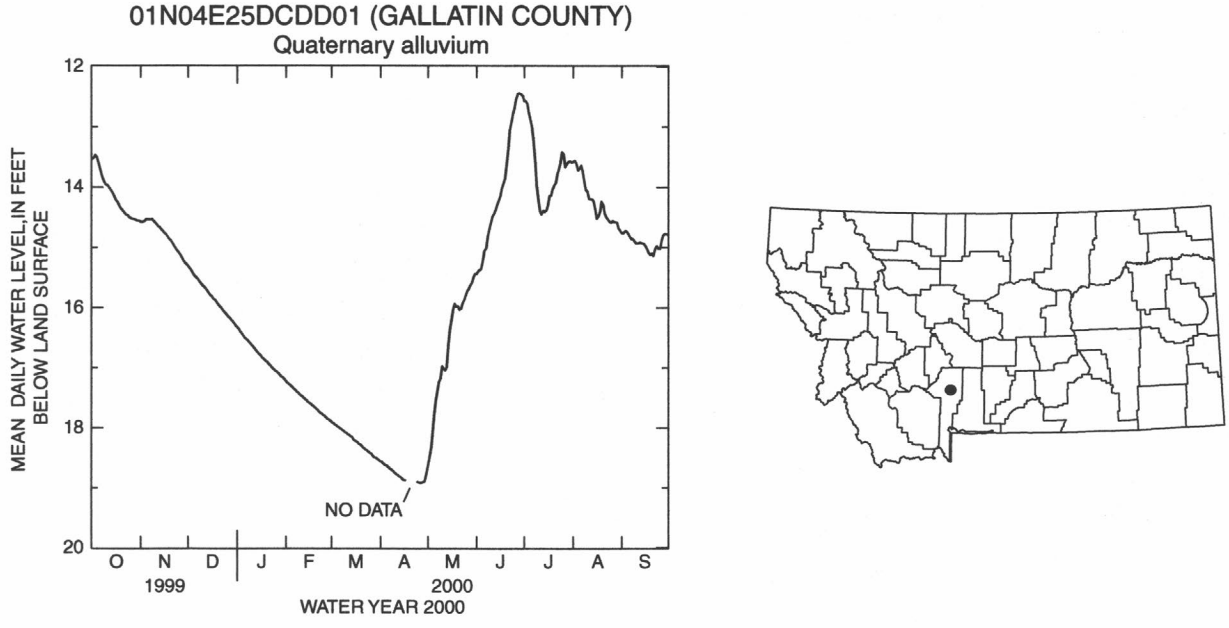


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

GARFIELD COUNTY

SITE IDENTIFICATION.--470709106061401. Local number 16N44E25BBAC01.

LOCATION.--Lat 47°07'09", long 106°06'14", Hydrologic Unit 10040104. Owner: Burlington Northern Santa Fe Railroad.

HYDROGEOLOGIC UNIT.--Paleocene Tongue River Member of Fort Union Formation.

WELL CHARACTERISTICS.--Drilled in October 1980, casing diameter 4 in., depth 103 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every 4 hours from Apr. 13, 1998 to present.

DATUM.--Elevation of land-surface datum is 2,645 ft above sea level, from topographic map. Measuring point: top of casing, 1.10 ft above land-surface datum. Reference point of 2.99 ft established Oct. 12, 1999.

REMARKS.--All water levels are reported below land-surface datum.

PERIOD OF RECORD.--Measured annually from 1984 to 1992 and recorded every 4 hours from Apr. 13, 1998 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 29.73 ft, Apr. 13, 1999 (from recorder); lowest, 32.03 ft, May 31, 1983 (measured).

EXTREMES FOR WATER YEAR 2000.--Highest water level 30.01 ft, Apr. 4, 5, 2000 (from recorder); lowest, 31.05 ft, June 26, 2000 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 12	30.36	Apr 24	30.35
Feb 08	30.24	Jun 26	31.03
Feb 09	30.20		

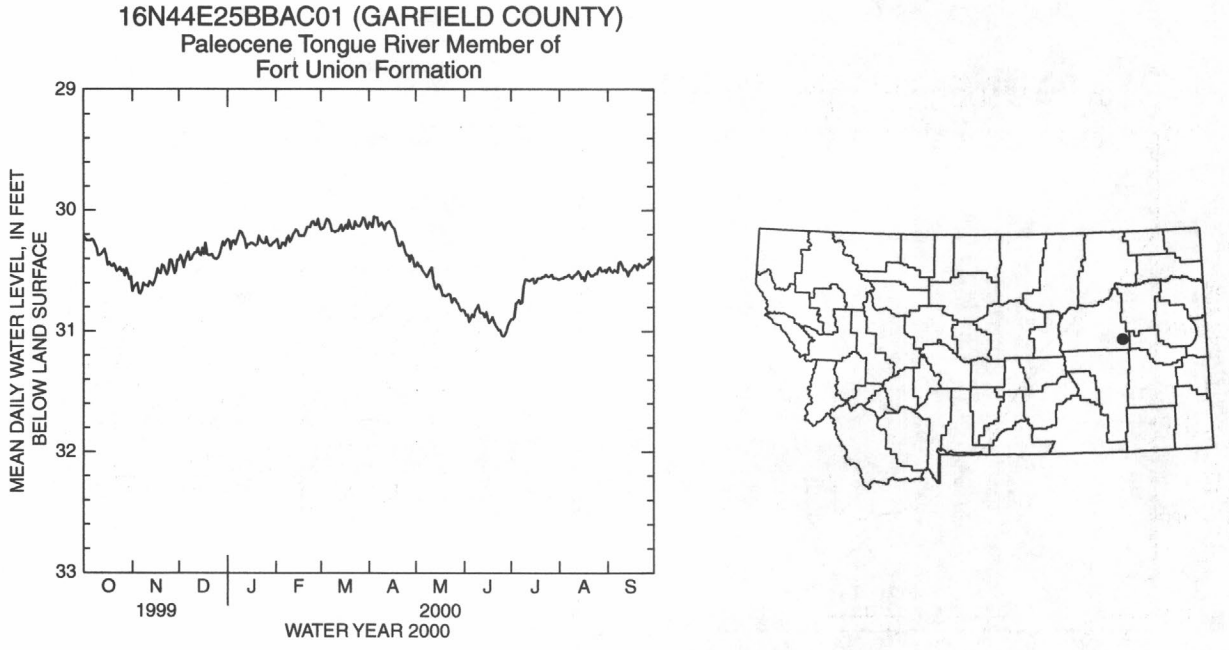


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

LAKE COUNTY

SITE IDENTIFICATION.--470946114013201. Local number 16N19W08ACBD01.

LOCATION.--Lat 47°09'46", long 114°01'32", Hydrologic Unit 17010212. Owner: Makespeace.

HYDROGEOLOGIC UNIT.--Pleistocene alluvium.

WELL CHARACTERISTICS.--Drilled in August 1988, casing diameter 6 in. to depth of 322 ft and 5 in. from 322-398 ft. Total depth is 398 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every hour from Sept. 13, 1990 to present.

DATUM.--Elevation of land-surface datum is 3,300 ft above sea level, from topographic map. Measuring point: top of casing, 1.50 ft above land-surface datum.

REMARKS.--No record from Apr. 7-18, 2000. All water levels are reported below land-surface datum.

PERIOD OF RECORD.--Annually from 1988 to 1990 and recorded every hour from Sept. 13, 1990 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 137.92 ft (from recorder), July 14, 1993; lowest, 188.30 ft, Apr. 6, 7, 1994 (from recorder).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 144.37 ft on July 20, 2000 (measured); lowest, 180.09 ft, Apr. 4, 5, 2000 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Nov 18	159.35	Mar 30	180.03	Jun 06	153.49	Jul 20	144.37
Jan 05	169.35	Apr 18	177.47	Jun 21	147.38	Sep 07	153.11
Feb 23	178.38	May 05	170.00				

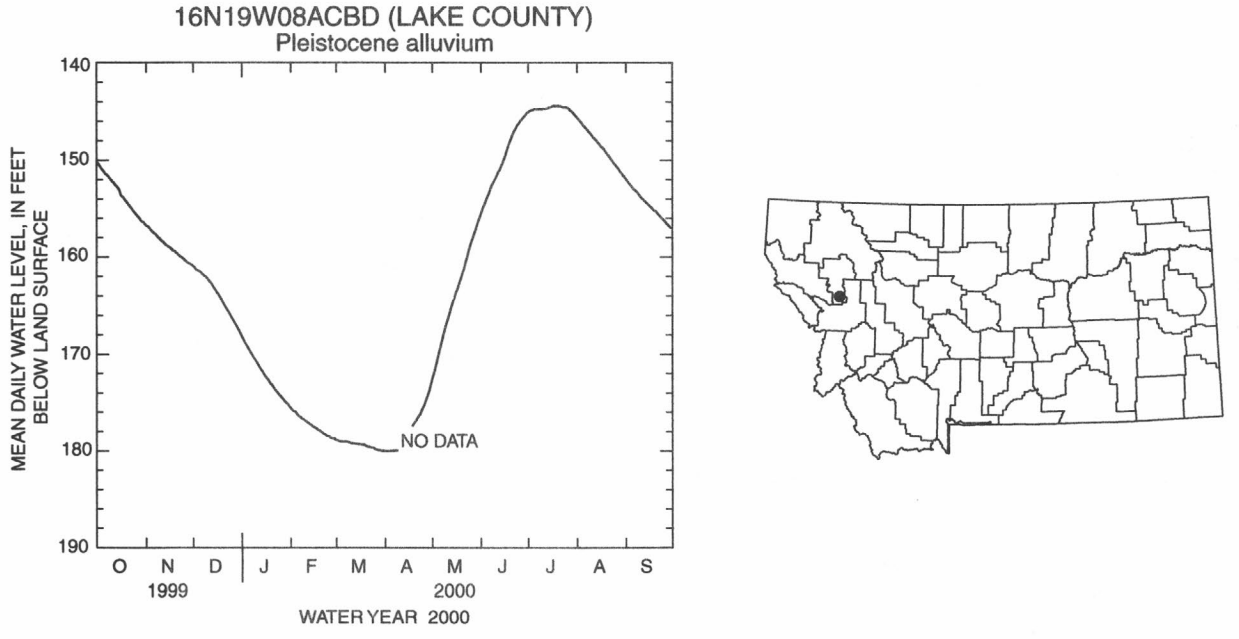


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

MC CONE COUNTY

SITE IDENTIFICATION.--480034105195401. Local number 26N49E13ACAB01.

LOCATION.--Lat 48°00'34", long 105°19'54", Hydrologic Unit 10060002. Owner: U.S. Geological Survey and Bureau of Land Management.

HYDROGEOLOGIC UNIT.--Upper Cretaceous Hell Creek Formation and Fox Hills Sandstone.

WELL CHARACTERISTICS.--Drilled in August 1981, casing diameter 4 in., depth 180 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every 6 hours from April 1998 to Aug. 3, 1999. Electronic water-level recorder set to record every 4 hours from Aug. 3, 1999 to present.

DATUM.--Elevation of land-surface datum is 2,040 ft above sea level, from topographic map. Measuring point: top of casing, 1.60 ft above land-surface datum. Reference point of 41.72 established May 11, 1999 (top of steel rod).

REMARKS.--All water levels are reported below land-surface datum.

PERIOD OF RECORD.--Measured annually from 1982 to 1992, recorded every 6 hours from Apr. 14, 1998 to Aug. 3, 1999 and recorded every 4 hours from Aug. 3, 1999 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 42.37 ft, Aug. 28, 1992 (measured); lowest, 44.04 ft, Sept. 21, 1990 (measured).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 43.59 ft on Oct. 8, 9, 1999 (from recorder); lowest, 43.94 ft on Feb. 4, 2000 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 12	43.68	Apr 24	43.81
Feb 09	43.78	Jun 26	43.85

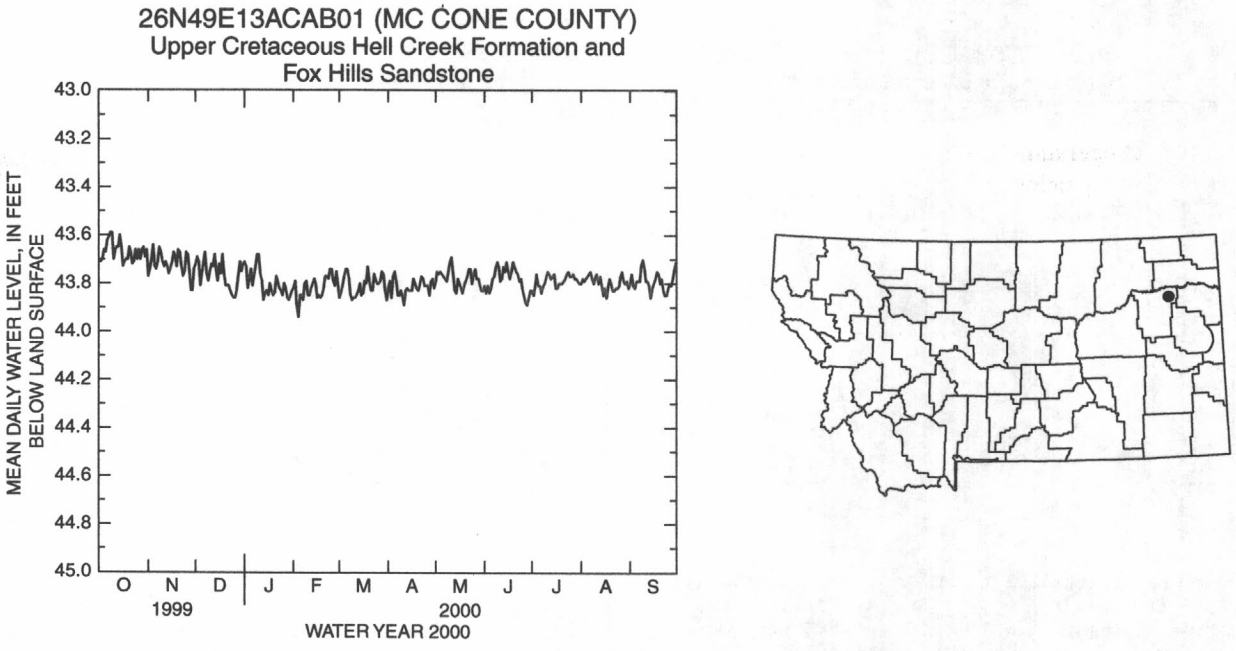


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

POWDER RIVER COUNTY

SITE IDENTIFICATION.--453107106110601. Local number 04S45E04BDDB01.

LOCATION.--Lat 45°31'07", long 106°11'06", Hydrologic Unit 10090102. Owner: U.S. Geological Survey.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in December 1979, casing diameter 4 in., depth 68 ft.

INSTRUMENTATION.--Graphical water-level recorder from April 1980 to October 1982. Digital water-level recorder set to record every 12 hours from October 1982 to November 1996, and reset to record every hour from November 1996 to present.

DATUM.--Elevation of land-surface datum is 3,020 ft above sea level, from topographic map. Measuring point: top of casing, 1.70 ft above land-surface datum.

REMARKS.--All water levels are reported below land-surface datum.

PERIOD OF RECORD.--Measured intermittently from December 1979 to April 1980 and recorded April 1980 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.67 ft, Apr. 11, 1997 (from recorder); lowest, 11.45 ft, Oct. 5, 1992 (from recorder).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 5.53 ft, Mar. 5, 6, 2000 (from recorder); lowest, 9.30 ft, Sept. 19, 2000 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL
Oct 27	7.90
May 31	7.19
Jul 10	8.10

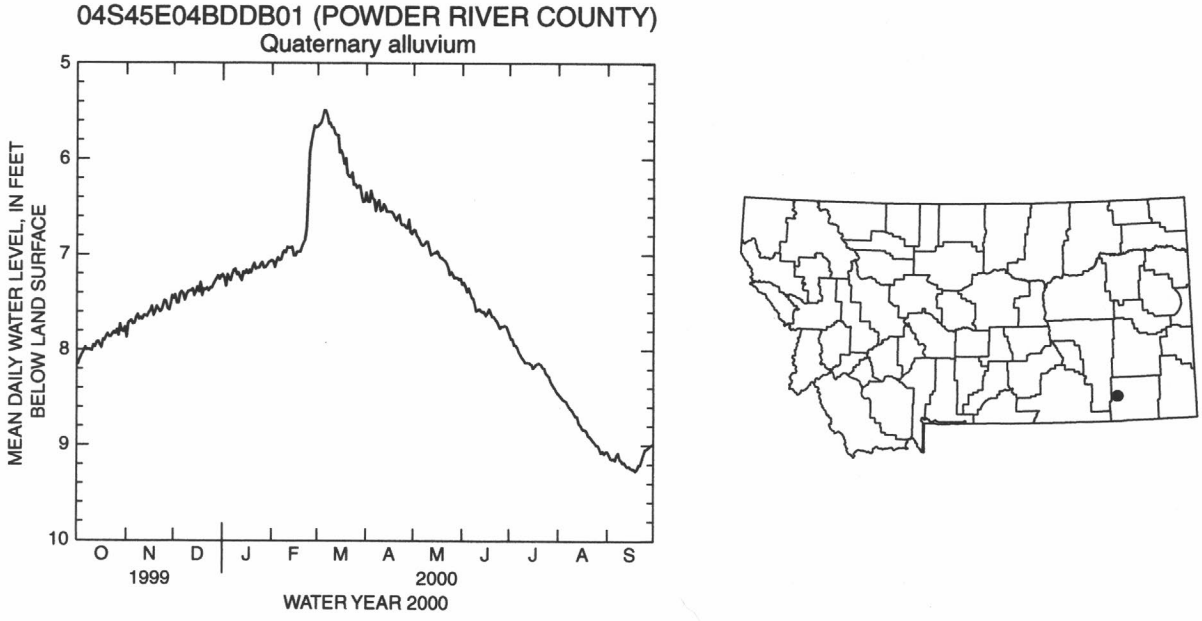


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

POWELL COUNTY

SITE IDENTIFICATION.--470049113035401. Local number 15N12W36BCDD01.

LOCATION.--Lat 47°00'49", long 113°03'54", Hydrologic Unit 17010203. Owner: Montana Department of Transportation.

HYDROGEOLOGIC UNIT.--Cenozoic rocks.

WELL CHARACTERISTICS.--Drilled in September 1964, casing diameter 6 in., depth 206 ft.

INSTRUMENTATION.--Digital water-level recorder installed April 1991 and set to record every hour from April 1991 to present.

DATUM.--Elevation of land-surface datum is 4,278 ft above sea level, from topographic map. Measuring point: top of casing, 1.0 ft above land-surface datum.

REMARKS.--No record from Oct. 16-23, 1999, July 28 to Aug. 15, and Sept. 8-30, 2000. All water levels are reported below land-surface datum.

PERIOD OF RECORD.--Measured periodically from 1975 to 1991 and continuously recorded every hour from April 1991 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 95.90 ft, Dec. 12, 1991 (measured); lowest, 126.72 ft, Oct. 11, 1984 (measured).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 107.09 ft, Mar. 4-7, 2000 (from recorder); lowest, 107.82 ft, many days in August 2000 (from recorder). Water level might have been lower during period of no record.

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov 16	107.68	May 23	107.49
Mar 01	107.13	Jul 18	107.76
Apr 17	107.16		

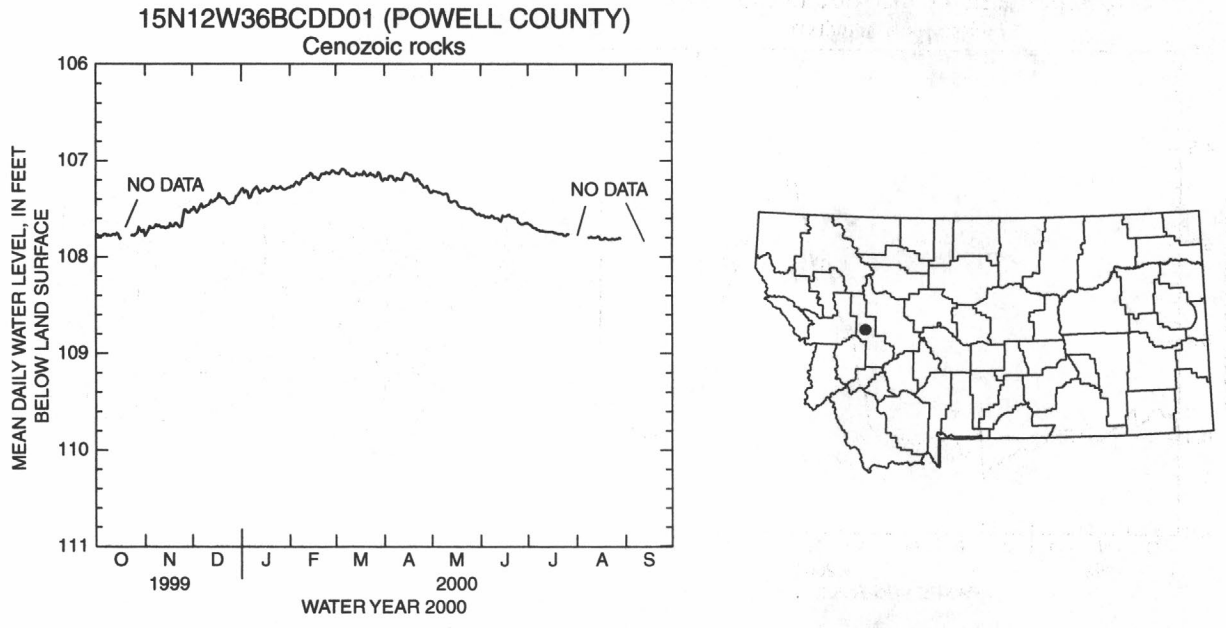


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

RAVALLI COUNTY

SITE IDENTIFICATION.--463750114033001. Local number 10N20W13BBA 01.

LOCATION.--Lat 46°37'50", long 114°03'30", Hydrologic Unit 17010205. Owner: Bonneville Power Administration.

HYDROGEOLOGIC UNIT.--Holocene alluvium.

WELL CHARACTERISTICS.--Drilled in September 1959, casing diameter 6 in., depth 51 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every hour from April 1991 to present.

DATUM.--Elevation of land-surface datum is 3,204 ft above sea level, from topographic map. Measuring point: top of casing, 2.00 ft above land-surface datum.

REMARKS.--All water levels are reported below land-surface datum.

PERIOD OF RECORD.--Periodically from 1959 to 1982 and recorded every 1 hour from April 1991 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.48 ft, June 15, 1959 (measured); lowest, 7.21 ft, Sept. 21, 1977 (measured).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 4.39 ft, June 16, 17, 2000 (from recorder); lowest, 6.23 ft, Jan. 31, Feb. 1, 2000 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 14	5.87	Mar 07	6.01	Jun 27	4.93
Dec 01	5.99	May 23	4.95	Aug 16	5.94
Jan 26	6.16				

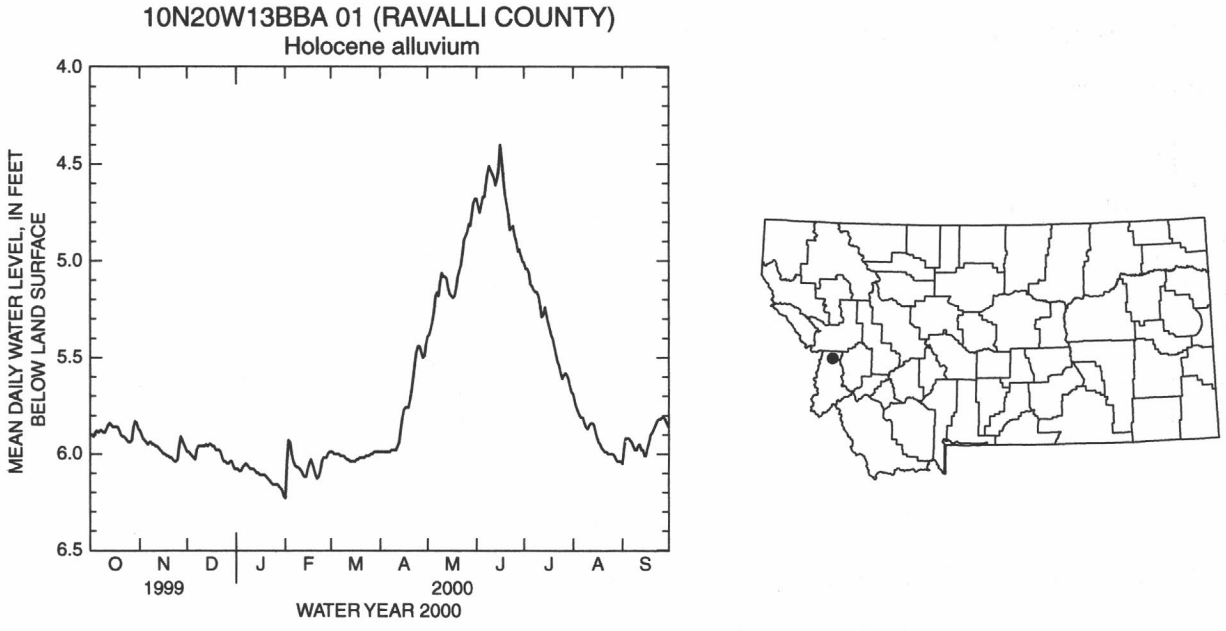


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

RAVALLI COUNTY

SITE IDENTIFICATION.--461518114090802. Local number 06N20W19CCCC02.

LOCATION.--Lat 46°15'18", long 114°09'08", Hydrologic Unit 17010205. Owner: Bonneville Power Administration.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in September 1970, casing diameter 6 in., depth 40 ft.

INSTRUMENTATION.--Graphic recorder from September 1970 to January 1985. Digital water-level recorder set to record every hour from January 1985 to present.

DATUM.--Elevation of land-surface datum is 3,560 ft above sea level, from levels taken in September 1970. Measuring point: top of casing, 1.30 ft above land-surface datum.

REMARKS.--All water levels are reported below land-surface datum.

PERIOD OF RECORD.--September 1970 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.48 ft, Sept. 2, 1979 (from recorder); lowest, 18.32 ft, May 1, 1985 (measured).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 7.90 ft, Jul. 10, 11, 2000 (from recorder); lowest, 17.52 ft, Apr. 19, 2000 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 14	10.03	Mar 07	16.71	Jun 29	8.19
Dec 01	13.44	May 24	14.81	Aug 16	8.66
Jan 26	15.78				

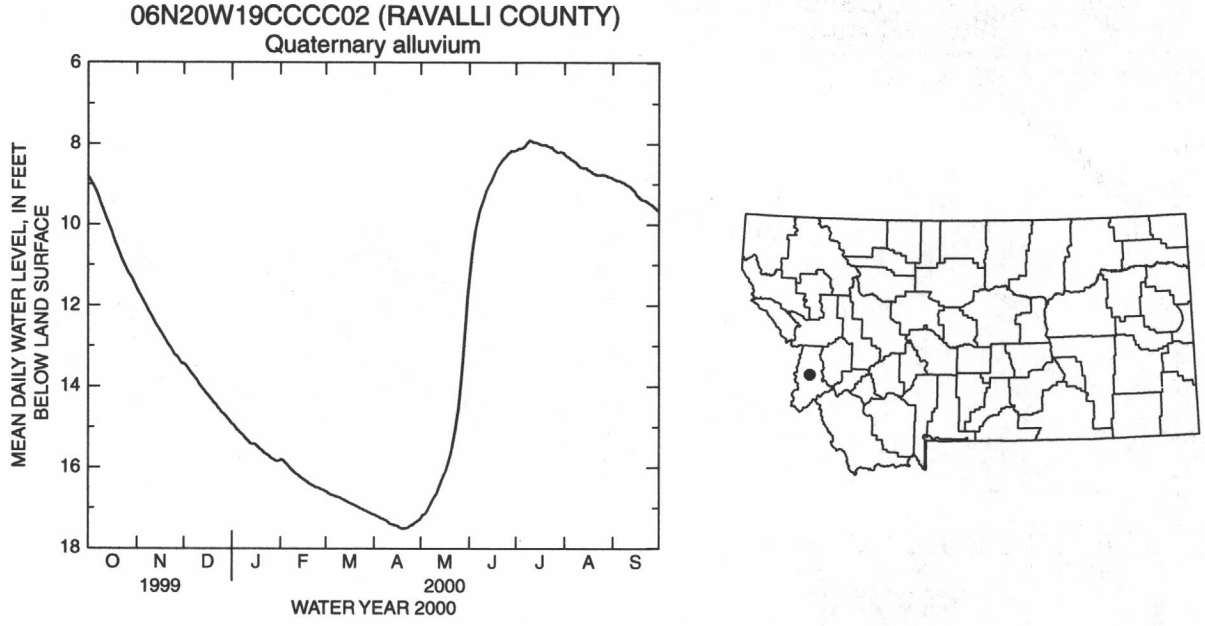


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

ROSEBUD COUNTY

SITE IDENTIFICATION.--451746106301101. Local number 06S43E19DDBA02.

LOCATION.--Lat 45°17'46", long 106°30'11", Hydrologic Unit 10090101. Owner: U.S. Geological Survey and Art Hayes.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in October 1986, casing diameter 4 in., depth 67 ft.

INSTRUMENTATION.--Digital water-level recorder from April 1989 to current year.

DATUM.--Elevation of land-surface datum is 3,170 ft above sea level, from topographic map. Measuring point: top of casing, 1.40 ft above land-surface datum.

REMARKS.--No record from Feb. 7 to Apr. 25, 2000. All water levels are reported below land-surface datum.

PERIOD OF RECORD.--April 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.47 ft, Apr. 7, 1987 (measured); lowest, 11.40 ft, Jan. 11, 1995 (measured).

EXTREMES FOR WATER YEAR 2000.--Highest water level 7.57 ft, Feb. 4, 5, 2000 (from recorder); lowest, 9.85 ft, Sept. 18-20, 2000 (from recorder). Water level might have been higher during period of no record.

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 27	8.49	May 31	8.01
Apr 25	7.67	Jul 10	8.82

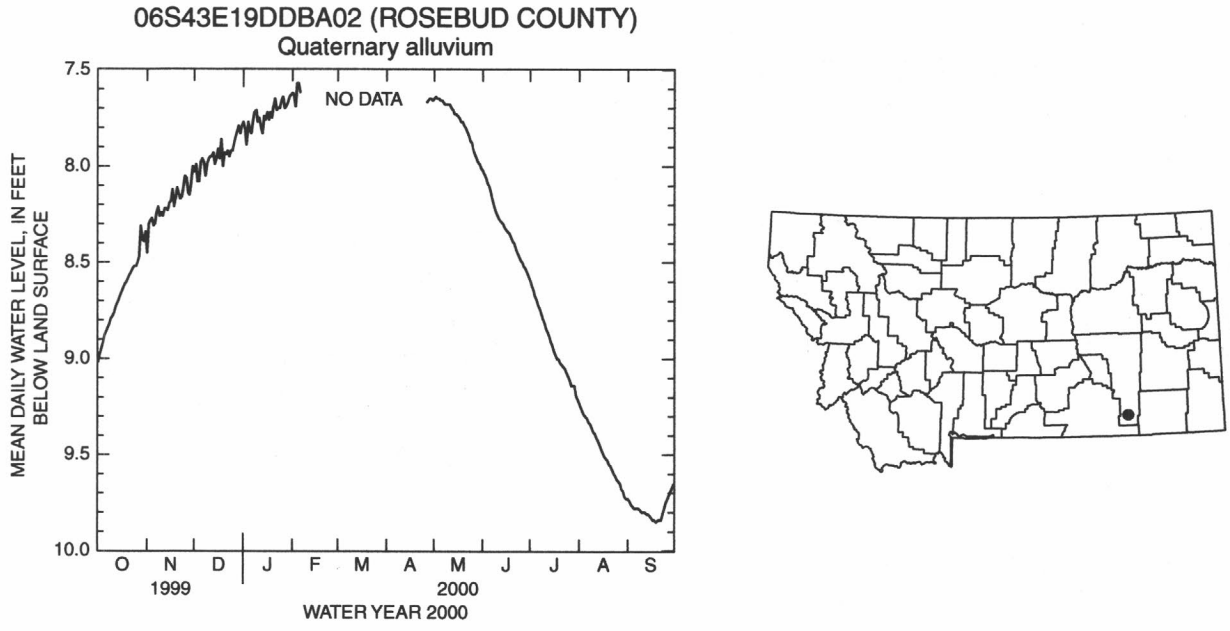


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

SANDERS COUNTY

SITE IDENTIFICATION.--474251114385201. Local number 23N24W34ADAA01.

LOCATION.--Lat 47°42'51", long 114°38'52", Hydrologic Unit 17010212. Owner: Bureau of Indian Affairs.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in February 1941, casing diameter 20 in. from 1.00 ft above land surface to 300 ft below land surface, and 18 in. from 300 ft to 377 ft. Total depth is 377 ft.

INSTRUMENTATION.--Graphical water-level recorder from January 1971 to January 1985. Digital water-level recorder set to record every hour from January 1985 to present.

DATUM.--Elevation of land-surface datum is 2,878.57 ft above sea level. Measuring point: top of casing, 1.00 ft above land-surface datum.

REMARKS.--No record from Oct. 13 to Dec. 2, Dec. 31, 1999 to Jan. 10, and Feb. 11-14, 2000. Water levels affected by pumpage. Well located near Lonepine. All water levels are reported below land-surface datum.

PERIOD OF RECORD.--March to May 1943, October 1970 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 102.43 ft, Mar. 20, 1981 (from recorder); lowest, 119.96 ft, Sept. 6, 1995 (from recorder).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 109.56 ft, Apr. 4, 2000 (from recorder); lowest, 115.20 ft, Sept. 6, 2000 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 08	113.16	Jan 13	110.02	May 17	111.22	Aug 08	114.54
Dec 03	110.55	Feb 23	109.87	Jun 20	112.50	Sep 07	115.12
Dec 07	110.30	Mar 28	109.63	Jul 27	114.58		

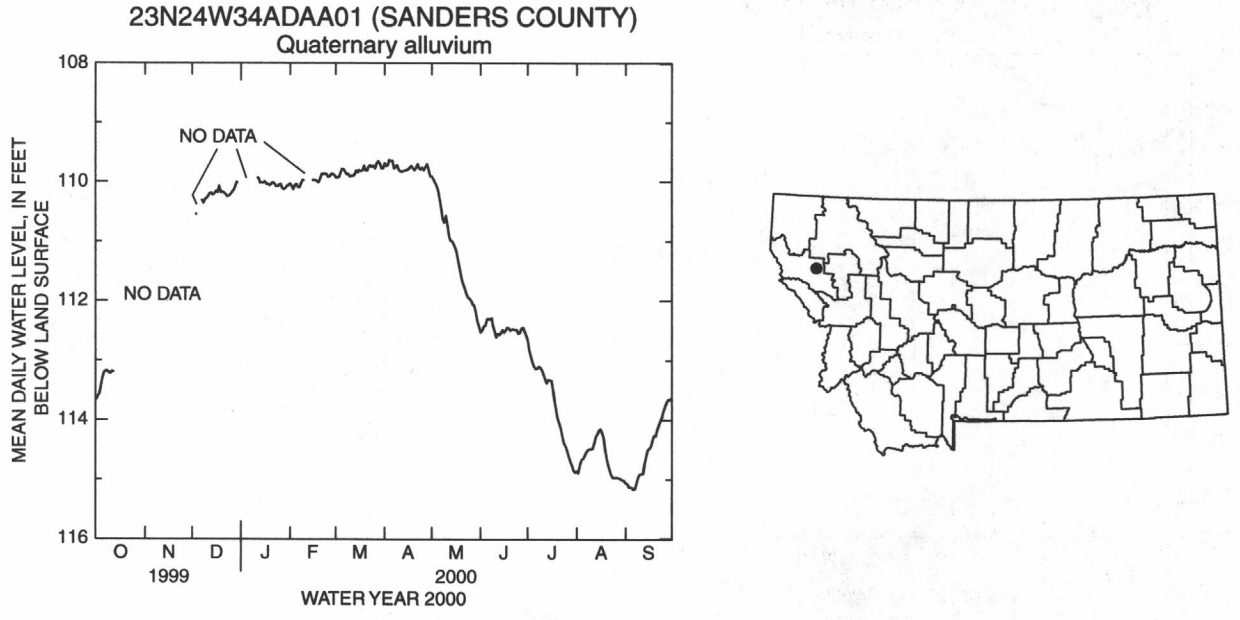


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

SHERIDAN COUNTY

SITE IDENTIFICATION.--483650104084001. Local number 33N58E17ADDD01.

LOCATION.--Lat 48°36'50", long 104°08'40", Hydrologic Unit 10060006. Owner: Vern Guenther.

HYDROGEOLOGIC UNIT.--Pleistocene outwash.

WELL CHARACTERISTICS.--Drilled in 1984, casing diameter 4 in., depth 130 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every hour from April 1985 to present.

DATUM.--Elevation of land-surface datum is 1,992 ft above sea level, from topographic map. Measuring point: top of casing, 2.10 ft above land-surface datum.

REMARKS.--No record from Feb. 7 to June 27, July 17 to Aug. 10, and Sept. 24-30, 2000. All water levels are reported below land-surface datum.

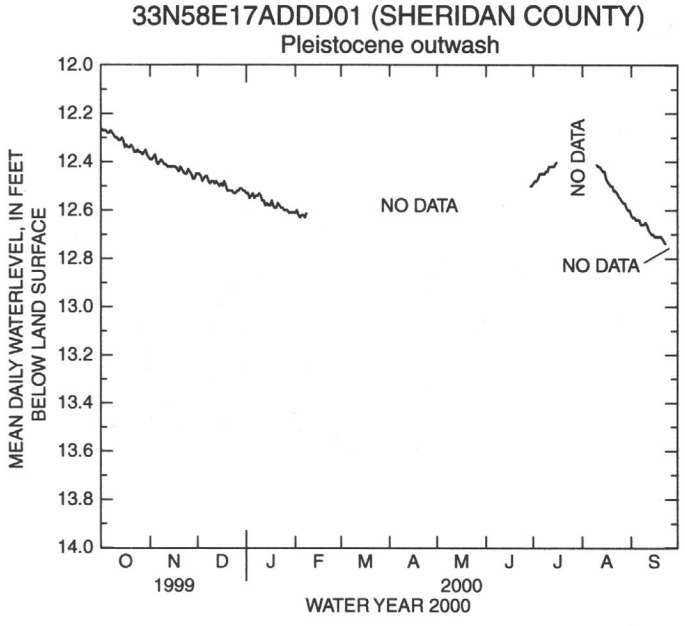
PERIOD OF RECORD.--August 1984 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 11.73 ft, June 19-26, 1999 (from recorder); lowest, 15.51 ft, Aug. 20-23, 1992 (from recorder).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 12.26 ft, Oct. 1, 1999 (from recorder); lowest, 12.74 ft, Sept. 23, 2000 (from recorder). Water level might have been lower during period of no record.

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL
Feb 08	12.61
Apr 25	12.66
Jun 27	12.51



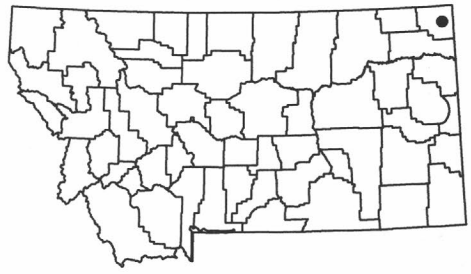


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

SHERIDAN COUNTY

SITE IDENTIFICATION.--483318104105402. Local number 32N58E04DBBD02.

LOCATION.--Lat 48°33'18", long 104°10'54", Hydrologic Unit 10060006. Owner: U.S. Fish and Wildlife Service.

HYDROGEOLOGIC UNIT.--Pleistocene outwash.

WELL CHARACTERISTICS.--Drilled in July 1984, casing diameter 4 in., depth 143 ft.

INSTRUMENTATION.--Graphic water-level recorder from August 1984 through May 1985. Digital water-level recorder set to record every 24 hours from May 1985 to April 1996. Digital recorder set to record every hour from April 1996 to present.

DATUM.--Elevation of land-surface datum is 1,977 ft above sea level, from topographic map. Measuring point: top of recorder shelf, 2.20 ft above land-surface datum. From August 1984 to April 1994, measuring point was top of PVC casing, 1.50 ft above land-surface datum.

REMARKS.--No record from July 20 to Sept. 30, 2000. All water levels are reported below land-surface datum.

PERIOD OF RECORD.--August 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.81 ft, Apr. 21, 1999 (from recorder); lowest, 25.90 ft, Aug. 18, 19, 1992 (from recorder).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 22.97 ft, Apr. 28, 29, 2000 (from recorder); lowest, 23.54 ft, Oct. 1-3, 1999 (from recorder). Water level might have been lower during period of no record.

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL
Feb 08	23.17
Apr 25	22.99
Jun 27	23.15

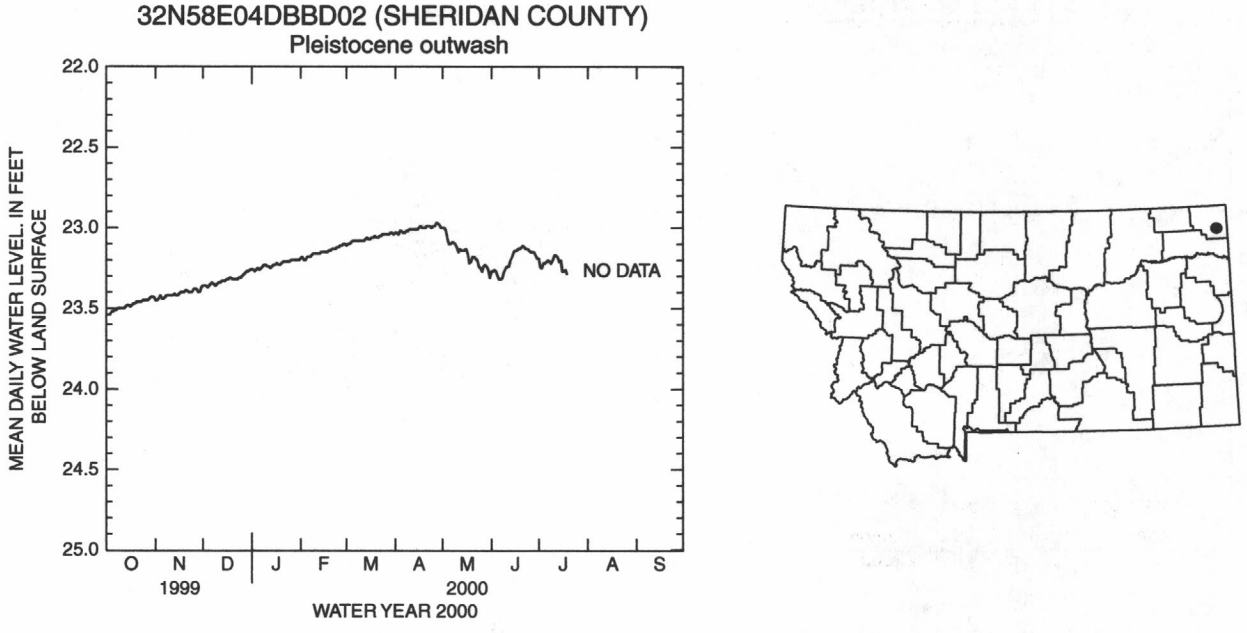


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

TETON COUNTY

SITE IDENTIFICATION.--474005111583803. Local number 22N03W15BAAD03.

LOCATION.--Lat 47°40'05", long 111°58'38", Hydrologic Unit 10030104. Owner: Marvin Klinker.

HYDROGEOLOGIC UNIT.--Pleistocene terrace deposits.

WELL CHARACTERISTICS.--Drilled in 1991, casing diameter 4 in., depth 47 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every hour from November 1991 to present.

DATUM.--Elevation of land-surface datum is 5,240 ft above sea level, from topographic map. Measuring point: top of casing, 1.90 ft above land-surface datum.

REMARKS.--Water levels affected by irrigation. All water levels are reported below land-surface datum.

PERIOD OF RECORD.--November 1991 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 10.03 ft, Aug. 5, 1999 (from recorder); lowest, 28.05 ft, May 12, 1994 (from recorder).

EXTREMES FOR WATER YEAR 2000.--Highest water level, 10.19 ft, Aug. 5, 2000 (from recorder); lowest, 27.57 ft, May 4, 5, 2000 (from recorder).

MEASURED WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 1999 THROUGH SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Oct 05	14.52	Apr 06	26.45	Aug 03	12.03
Jan 07	21.83	Apr 26	27.25	Aug 22	12.49
Feb 23	24.45				

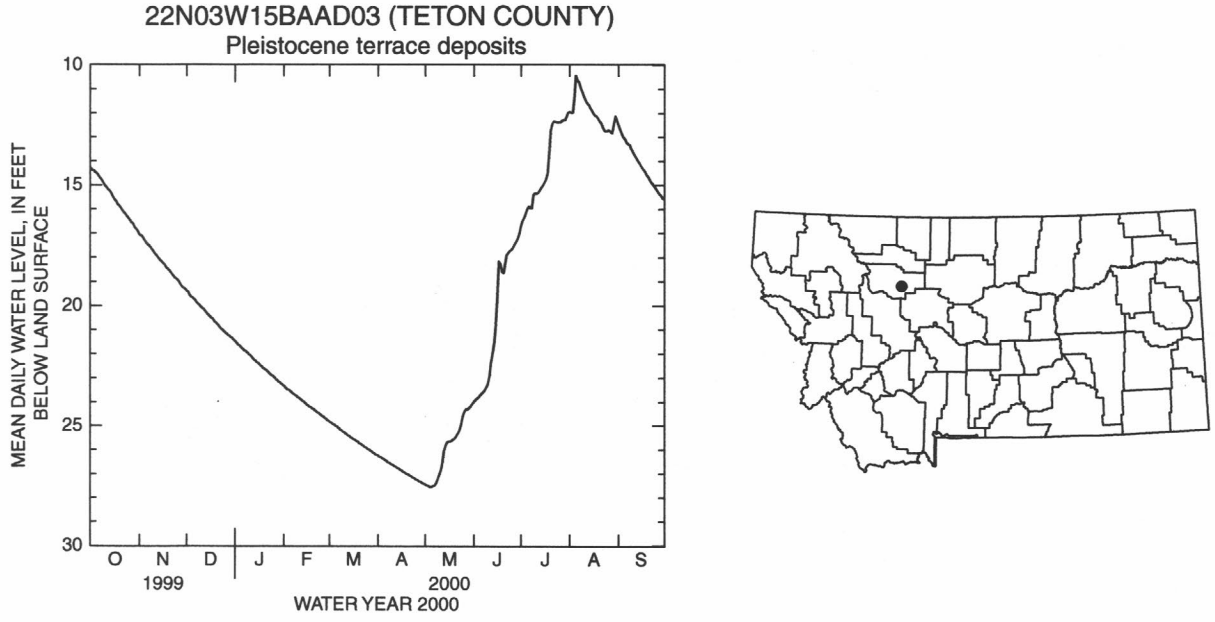


Figure 4. Fluctuations of water levels in selected observation wells in Montana for water year 2000--Continued.

Table 7. Periodic water levels in selected observation wells in Montana, water year 2000

[Local number--composed of township, range, section, position within a section, and a sequential number. Depth of well--in feet below land surface. Water level--in feet below or above (+) land surface]

Local number	Depth of well	Aquifer	Date of measurement	Water level
		BEAVERHEAD COUNTY		
08S09W01CCCC01	47	Tertiary sediments	10-28-99	25.55
			02-03-00	30.19
			03-15-00	30.88
			05-02-00	30.65
			07-26-00	22.93
			08-24-00	25.58
08S08W31CCAA01	217	Tertiary sediments	10-28-99	153.38
			02-03-00	155.82
			03-15-00	156.83
			05-02-00	157.82
			06-15-00	158.68
			07-26-00	159.34
			08-24-00	159.86
		BLAINE COUNTY		
26N24E20BBCB01	475	Mississippian Lodgepole Limestone	10-20-99	16.25
			01-18-00	16.65
			04-25-00	17.54
		CASCADE COUNTY		
19N04E26CACC02	198	Lower Cretaceous Kootenai Formation	10-05-99	137.15
			01-07-00	137.30
			02-23-00	137.31
			04-06-00	137.28
			04-25-00	137.18
			08-03-00	137.19
		GALLATIN COUNTY		
01N04E25DCDD01	101	Quaternary alluvium	10-29-99	14.56
			01-25-00	17.05
			03-15-00	18.22
			04-17-00	18.88
			07-18-00	14.16
			08-31-00	14.73
			09-20-00	15.14
		GARFIELD COUNTY		
16N44E25BBAC01	103	Paleocene Tongue River Member of Fort Union Formation	10-12-99	30.36
			02-08-00	30.24
			02-09-00	30.20
			04-24-00	30.35
			06-26-00	31.03
		JEFFERSON COUNTY		
09N03W14DACC01	145	Upper Devonian Jefferson Formation	10-07-99	21.87
			10-28-99	21.35
			11-30-99	24.46
			01-31-00	24.11
			03-01-00	25.40
			03-29-00	21.33
			04-28-00	25.69
			05-24-00	23.46
			06-29-00	24.89

Table 7. Periodic water levels in selected observation wells in Montana, water year 2000 (Continued)

Local number	Depth of well	Aquifer	Date of measurement	Water level
		JEFFERSON COUNTY--Continued		
09N03W14DACC01 Continued	145	Upper Devonian Jefferson Formation	07-27-00	31.13
			08-30-00	25.15
			09-28-00	21.91
09N03W17DBC 01	207	Upper Cretaceous Boulder Batholith intrusives	10-07-99	34.20
			10-28-99	34.32
			11-30-99	34.66
			01-31-00	34.92
			03-01-00	35.18
			03-29-00	34.57
			04-28-00	34.76
			05-24-00	38.01
			06-29-00	47.85
			07-27-00	36.87
			08-30-00	37.93
			09-28-00	36.43
		LAKE COUNTY		
16N19W08ACBD01	398	Pleistocene alluvium	11-18-99	159.35
			01-05-00	169.35
			02-23-00	178.38
			03-30-00	180.03
			04-18-00	177.47
			05-05-00	170.00
			06-06-00	153.49
			06-21-00	147.38
			07-20-00	144.37
			09-07-00	153.11
		LEWIS AND CLARK COUNTY		
12N06W36BCDD01	70	Upper Cretaceous Marysville intrusives	10-07-99	18.94
			10-28-99	19.92
			11-30-99	22.54
			01-31-00	21.75
			03-01-00	22.08
			03-29-00	21.82
			04-28-00	20.75
			05-24-00	19.71
			06-29-00	14.54
			07-27-00	14.84
			08-30-00	16.06
11N05W14DDDD01	500	Middle Proterozoic Helena Formation	10-07-99	35.47
			10-28-99	33.86
			11-30-99	33.70
			01-31-00	33.83
			03-01-00	33.79
			03-29-00	33.98
			04-28-00	33.04
			05-24-00	34.22
			06-29-00	37.89
			07-27-00	42.39
			08-04-00	37.00
			08-30-00	34.81
			09-29-00	35.78

Table 7. Periodic water levels in selected observation wells in Montana, water year 2000 (Continued)

Local number	Depth of well	Aquifer	Date of measurement	Water level
		LEWIS AND CLARK COUNTY--Continued		
11N04W06DACA01	50	Middle Proterozoic Spokane Formation	10-07-99	40.48
			10-28-99	39.70
			11-30-99	39.50
			01-31-00	39.39
			03-01-00	39.59
			05-24-00	30.70
			06-29-00	41.90
			07-27-00	42.39
			08-30-00	42.07
			09-29-00	42.21
11N04W12CDDD01	176	Middle Proterozoic Spokane Formation	10-07-99	126.73
			10-28-99	125.05
			11-30-99	124.21
			01-31-00	125.07
			03-01-00	127.04
			03-29-00	123.12
			04-28-00	128.62
			05-24-00	123.75
			06-29-00	133.55
			07-27-00	139.27
			08-30-00	130.13
			09-29-00	131.24
11N04W24BBAB01	120	Middle Proterozoic Spokane Formation	10-02-99	78.98
			03-15-00	83.76
			05-24-00	85.09
			06-29-00	85.82
			07-27-00	86.09
			08-30-00	87.67
11N04W34DCBA01	125	Upper Cretaceous Scratchgravel Hills intrusives	10-07-99	17.66
			10-28-99	15.66
			11-30-99	15.92
			01-31-00	16.27
			03-01-00	18.74
			03-29-00	16.37
			04-28-00	16.62
			05-24-00	17.44
			06-29-00	21.24
			07-27-00	18.64
			08-31-00	18.84
			09-29-00	17.51
11N03W05CCBC01	110	Middle Proterozoic Spokane Formation	10-07-99	64.75
			10-28-99	64.23
			11-30-99	60.13
			01-31-00	63.39
			03-01-00	63.61
			03-29-00	58.79
			04-28-00	58.75
			05-24-00	59.55
			06-29-00	62.68
			07-27-00	63.23
			08-30-00	65.20
			09-29-00	64.87

Table 7. Periodic water levels in selected observation wells in Montana, water year 2000 (Continued)

Local number	Depth of well	Aquifer	Date of measurement	Water level
		LEWIS AND CLARK COUNTY--Continued		
11N03W08BCBA01	208	Middle Proterozoic Spokane Formation	10-07-99	54.62
			10-28-99	54.33
			11-30-99	53.96
			01-31-00	53.77
			03-01-00	53.21
			03-29-00	53.10
			04-28-00	54.82
			05-24-00	54.72
11N03W11BBBA01	350	Middle Proterozoic Spokane Formation	10-07-99	179.56
			10-28-99	162.53
			11-30-99	169.75
			01-31-00	167.30
			03-01-00	164.41
			03-29-00	160.83
			04-28-00	169.99
			05-24-00	164.71
			06-29-00	207.77
			07-27-00	172.62
			08-30-00	166.17
			09-29-00	162.85
10N05W03ABDD01	140	Middle Cambrian Wolsey Shale	10-07-99	21.88
			10-28-99	21.89
			11-30-99	22.01
			01-31-00	22.01
			03-01-00	21.94
			03-29-00	21.24
			04-28-00	22.04
			05-24-00	22.02
			06-29-00	22.40
			07-27-00	22.54
			08-30-00	23.29
			09-29-00	22.74
10N05W09BDBC01	280	Upper Cretaceous Boulder Batholith intrusives	10-07-99	50.21
			10-28-99	41.89
			11-30-99	61.69
			01-31-00	89.35
			03-01-00	74.12
			03-29-00	73.44
			04-28-00	16.89
			05-24-00	48.07
			07-27-00	68.59
			08-30-00	45.55
			09-29-00	46.21
10N05W25DBDA02	100	Upper Cretaceous Boulder Batholith intrusives	10-07-99	77.06
			10-28-99	76.09
			11-30-99	76.44
			01-31-00	76.69
			03-01-00	76.93
			03-29-00	76.82
			04-28-00	74.60
			05-24-00	73.52
			06-29-00	77.84
			07-27-00	79.54
			08-30-00	78.51
			09-28-00	78.64

Table 7. Periodic water levels in selected observation wells in Montana, water year 2000 (Continued)

Local number	Depth of well	Aquifer	Date of measurement	Water level
		LEWIS AND CLARK COUNTY--Continued		
10N05W33CDCD01	135	Upper Cretaceous Boulder Batholith intrusives	10-07-99	18.16
			10-28-99	17.22
			11-30-99	16.63
			01-31-00	17.50
			03-01-00	16.80
			03-29-00	16.62
			04-28-00	17.11
			05-24-00	17.92
			06-28-00	18.61
			07-27-00	19.24
			08-30-00	20.18
			09-29-00	19.87
10N04W02CBAA01	110	Upper Cretaceous Scratchgravel Hills intrusives	10-01-99	32.63
			11-19-99	33.00
			03-02-00	33.28
			03-10-00	33.28
			04-19-00	33.41
			06-14-00	34.97
			06-20-00	34.58
			07-05-00	34.94
			07-28-00	35.27
			08-23-00	36.04
			08-25-00	35.80
10N04W03CDBA01	206	Upper Cretaceous Scratchgravel Hills intrusives	10-07-99	26.06
			10-28-99	25.90
			11-30-99	25.69
			01-31-00	25.81
			03-01-00	25.96
			03-29-00	26.64
			04-28-00	26.50
			05-24-00	30.06
			06-29-00	31.05
			07-27-00	29.52
			09-29-00	27.99
10N04W08DCAC01	120	Middle Proterozoic Helena Formation	10-07-99	51.66
			10-28-99	51.40
			11-30-99	48.92
			01-31-00	47.17
			03-01-00	47.01
			03-29-00	47.64
			04-28-00	60.50
			05-24-00	59.99
			06-29-00	63.30
			07-27-00	60.59
			08-30-00	81.85
			09-29-00	59.31
10N04W15BDAC01	260	Middle Proterozoic Spokane Formation	10-07-99	35.76
			10-28-99	35.64
			11-30-99	35.86
			01-31-00	36.25
			03-01-00	35.49
			03-30-00	36.70
			04-28-00	36.56

Table 7. Periodic water levels in selected observation wells in Montana, water year 2000 (Continued)

Local number	Depth of well	Aquifer	Date of measurement	Water level
		LEWIS AND CLARK COUNTY--Continued		
10N04W15BDAC01 Continued	260	Middle Proterozoic Spokane Formation	05-24-00	33.85
			06-29-00	36.99
			07-27-00	37.31
			08-30-00	37.57
			09-29-00	34.92
10N04W23CADD01	130	Middle Proterozoic Helena Formation	10-07-99	55.94
			10-28-99	55.89
			11-30-99	56.17
			01-31-00	56.51
			03-01-00	59.53
			03-30-00	56.67
			04-28-00	58.19
			05-24-00	58.24
			06-29-00	58.36
			07-27-00	58.64
			08-30-00	59.82
			09-28-00	56.87
10N03W20CCAA01	100	Middle Proterozoic Helena Formation	10-07-99	38.52
			10-28-99	38.57
			11-30-99	39.23
			01-31-00	40.57
			03-01-00	41.13
			03-29-00	41.54
			04-28-00	41.83
			05-24-00	42.27
			06-29-00	41.25
			07-27-00	41.42
			08-30-00	40.29
			09-28-00	39.89
10N03W32BCBD01	140	Middle Proterozoic Helena Formation	10-07-99	40.24
			10-28-99	40.99
			11-30-99	42.36
			01-31-00	44.25
			03-01-00	45.13
			03-29-00	45.84
			04-28-00	41.56
			05-24-00	47.79
			07-27-00	43.60
			08-30-00	41.34
			09-29-00	42.65
09N05W12CCDA01	260	Upper Cretaceous Boulder Batholith intrusives	10-07-99	47.12
			10-28-99	28.58
			11-30-99	31.07
			01-31-00	31.06
			03-01-00	31.02
			03-29-00	29.75
			04-28-00	35.99
			05-24-00	30.08
			06-29-00	37.74
			07-27-00	38.54
			08-30-00	36.92
			09-28-00	40.09

Table 7. Periodic water levels in selected observation wells in Montana, water year 2000 (Continued)

Local number	Depth of well	Aquifer	Date of measurement	Water level
		LEWIS AND CLARK COUNTY--Continued		
09N04W11CCCB01	122	Upper Cretaceous Boulder Batholith intrusives	10-07-99	26.08
			10-28-99	27.34
			11-30-99	27.20
			01-31-00	26.42
			03-01-00	26.43
			03-29-00	26.31
			04-28-00	26.32
			05-24-00	26.70
			06-29-00	27.10
			07-27-00	28.07
			08-30-00	29.29
			09-28-00	29.42
09N04W11CDBD01	124	Upper Cretaceous Boulder Batholith intrusives	10-07-99	71.13
			10-28-99	71.26
			11-30-99	71.03
			01-31-00	69.58
			03-01-00	71.47
			03-29-00	71.68
			04-28-00	62.07
			05-24-00	73.05
			06-29-00	73.78
			07-27-00	75.13
			09-28-00	75.14
		MC CONE COUNTY		
26N49E13ACAB01	180	Upper Cretaceous Hell Creek Formation-Fox Hills Sandstone	10-12-99	43.68
			02-09-00	43.78
			04-24-00	43.81
			06-26-00	43.85
		POWDER RIVER COUNTY		
04S45E04BDDB01	68	Quaternary alluvium	10-27-99	7.90
			05-31-00	7.19
			07-10-00	8.10
		POWELL COUNTY		
15N12W36BCDD01	206	Cenozoic rocks	11-16-99	107.68
			03-01-00	107.13
			04-17-00	107.16
			05-23-00	107.49
			07-18-00	107.76
		RAVALLI COUNTY		
10N20W13BBA 01	51	Holocene alluvium	10-14-99	5.87
			12-01-99	5.99
			01-26-00	6.16
			03-07-00	6.01
			05-23-00	4.95
			06-27-00	4.93
			08-16-00	5.94
06N20W19CCCC02	40	Quaternary alluvium	10-14-99	10.03
			12-01-99	13.44
			01-26-00	15.78
			03-07-00	16.71
			05-24-00	14.81
			06-29-00	8.19
			08-16-00	8.66

Table 7. Periodic water levels in selected observation wells in Montana, water year 2000 (Continued)

Local number	Depth of well	Aquifer	Date of measurement	Water level
		ROSEBUD COUNTY		
06S43E19DDBA02	67	Quaternary alluvium	10-27-99	8.49
			04-25-00	7.67
			05-31-00	8.01
			07-10-00	8.82
		SANDERS COUNTY		
26N34W03BDAD01	400	Quaternary alluvium	12-01-99	238.86
			02-25-00	230.25
			05-18-00	218.49
25N31W30DCCC01	282	Quaternary alluvium	12-01-99	223.00
			02-25-00	223.20
			05-18-00	223.52
			08-30-00	223.35
23N24W34ADAA01	377	Quaternary alluvium	10-08-99	113.16
			12-03-99	110.55
			12-07-99	110.30
			01-13-00	110.02
			02-23-00	109.87
			03-28-00	109.63
			05-17-00	111.22
			06-20-00	112.50
			07-27-00	114.58
			08-08-00	114.54
			09-07-00	115.12
22N29W32ACDD01	308	Quaternary alluvium	12-01-99	232.00
			02-25-00	236.95
			05-18-00	192.31
			08-30-00	221.44
20N26W22CBBA01	50	Quaternary alluvium	12-01-99	17.13
			02-25-00	16.78
			05-18-00	15.89
			09-28-00	18.00
19N25W07CDDA01	--	Quaternary alluvium	12-01-99	+12.31
			02-25-00	+12.04
			06-01-00	+14.57
			08-30-00	+12.04
		SHERIDAN COUNTY		
33N58E17ADDD01	130	Pleistocene outwash	02-08-00	12.61
			04-25-00	12.66
			06-27-00	12.51
32N58E04DBBD02	143	Pleistocene outwash	02-08-00	23.17
			04-25-00	22.99
			06-27-00	23.15
		TETON COUNTY		
22N03W15BAAD03	47	Pleistocene terrace deposits	10-05-99	14.52
			01-07-00	21.83
			02-23-00	24.45
			04-06-00	26.45
			04-26-00	27.25
			08-03-00	12.03
			08-22-00	12.49

NATIONAL NETWORKS AND PROGRAMS

National Water-Quality Assessment (NAWQA) Program

This 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; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

NAWQA Program studies are planned within a set of regions called study areas. These study areas encompass 59 important river and aquifer systems that represent the diverse geography, water resources, and land and water uses of the Nation. The water quality in the Clark Fork and Yellowstone River basins presently is being studied as part of the USGS NAWQA program. During the 2000 water year, both studies conducted their first of three years of intensive data collection. Ground water and stream water are being sampled for an extensive list of natural and anthropogenic chemicals. Aquatic ecology, including stream morphology and aquatic plant and animal communities, are also being measured. All media are being sampled using a nationally consistent set of protocols, methods, and measurements. Most of the routine data (major ions, nutrients, trace elements, and some pesticides) collected in Montana are included in this report. Other data not included in this report (additional pesticides, volatile organic compounds, stream morphology, populations of aquatic flora and fauna, and data for adjacent states) are available in the District office.

The Northern Rockies Intermontane Basins study area encompasses 31,500 square miles in western Montana, northern Idaho, and northeastern Washington and lies entirely within the Northern Rocky Mountains physiographic province. The study area is comprised of two major river basins: the Clark Fork-Pend Oreille River Basin, which contains about 24,900 mi^2 and the Spokane River Basin, which contains about 6,600 mi^2.

The Yellowstone River basin study unit extends from central Wyoming north to include most of southeastern Montana and a small part of western North Dakota. The entire Yellowstone River watershed defines the study unit boundaries and includes all of the Wind/Bighorn, Powder, Tongue, and Clarks Fork Yellowstone River tributary watersheds. Total area for the study unit is about 70,100 square miles, of which 51 percent is in Montana, 48 percent is in Wyoming, and 1 percent is in North Dakota.

Additional information about the NAWQA Program is available through the world wide web at:

http://wwwrvares.er.usgs.gov/nawqa/nawqa_home.html

Hydrologic Benchmark Network

This is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities. Montana has two stations in this network: 05014500, Swiftcurrent Creek at Many Glacier, and 06169500, Rock Creek below Horse Creek, near International Boundary.

National Stream-Quality Accounting Network (NASQAN)

This network monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 39 stations. 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 Program (NAWQA); (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.

Montana has two stations in the 2000 NASQAN network: station 06185500, Missouri River near Culbertson, and station 06329500, Yellowstone River near Sidney.

National Atmospheric Deposition Program/National Trends Network (NADP/NTN)

NADP/NTN provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives: (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO_2 emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO_2 and NO_x.

Data from the network, as well as information about individual sites, are available through the world wide web at:

http://nadp.sws.uiuc.edu

Sites listed in this publication are: station 462905112035401, McBeath Residence near Clancy (MT-07), and station 482958109475101, Northern Montana Agricultural Research Center near Havre (MT-98).

Radiochemical Program

This is a network of regularly sampled water-quality stations where samples are also analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States. The East Poplar River at International Boundary (06178500) is part of this program in Montana.

Tritium Network

This network of stations has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for water year 2000 that began October 1, 1999, and ended September 30, 2000. 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.

Station Identification Numbers

Each data station, whether stream site or well, in this report is assigned a unique identification number. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the USGS to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. Generally, the "downstream-order" system is used for regular surface-water stations, the "latitude-longitude" system is used for miscellaneous surface-water stations where discharge measurements or water samples are obtained infrequently. The rectangular-grid system is used to assign identification numbers for wells.

Downstream-Order System

Since October 1, 1950, the order of listing hydrologic-station records in USGS reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on tributaries to tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indention in the "List of Stations" in the front of this report. Each indention represents one rank. This downstream order and system of indention shows which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, 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 made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 06090300, which appears just to the left of the station name, includes the two-digit Part number "06" plus the six-digit downstream-order number "090300." The Part number designates the major river basin; for example, Part "06" is the Missouri River basin. All records for a drainage basin encompassing more than one State can be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

Latitude-Longitude System

The identification numbers for miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the sites within a 1-second grid. This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description. (See figure 5.)

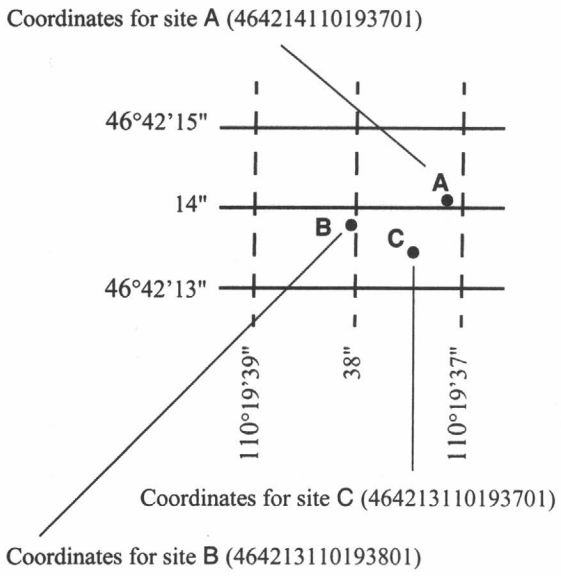


Figure 5. System for numbering miscellaneous sites (latitude and longitude).

Rectangular-Grid System

In this report, wells are numbered according to geographic position within the rectangular-grid system of land subdivision. The location (local) number consists of as many as 14 characters. The first three characters specify the township and its position north (N) or south (S) of the Montana Base Line. The next three characters specify the range and its position west (W) or east (E) of the Montana Principal Meridian. The next two characters are the section number. The next one to four characters designate the quarter section (160-acre tract), quarter-quarter section (40-acre tract), quarter-quarter-quarter section (10-acre tract), and quarter-quarter-quarter-quarter section (2.5-acre tract), respectively, in which the well is located. The subdivisions of the section are designated A, B, C, and D in a counterclockwise direction, beginning in the northeast quadrant. The last two characters form a sequence number based on the order of inventory. For example, well 30N33W05ABAB01 is the first well inventoried in the $NW^1/_4$ $NE^1/_4$ $NW^1/_4$ $NE^1/_4$ sec.5, T. 30 N., R. 33 W.

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations." Location of surface-water gaging stations for which data are given in this report are shown in figure 6.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relation between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relation between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the USGS as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records,

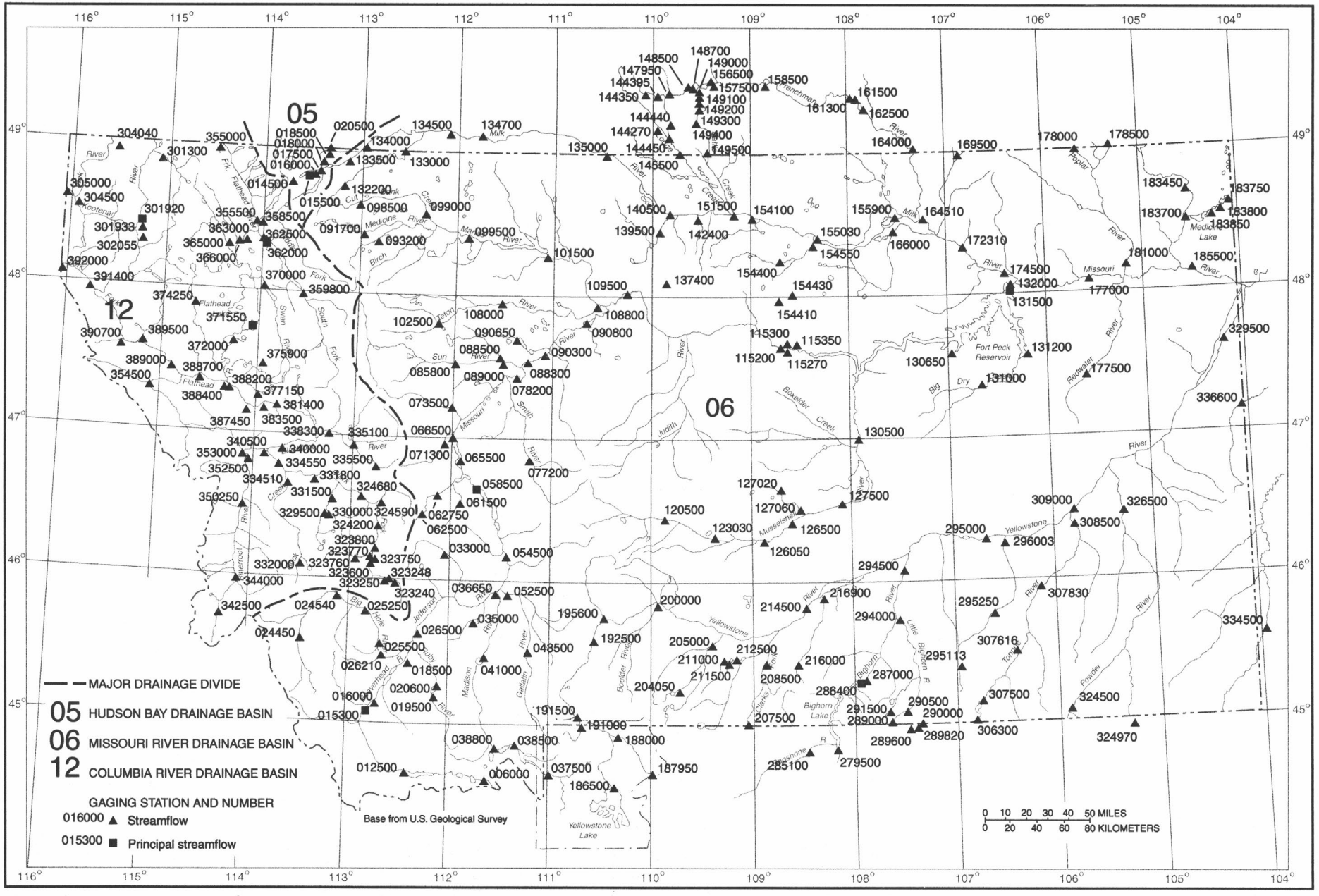


Figure 6. Location of surface-water gaging stations in Montana, water year 2000.

At some streamgaging stations, the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This 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 set at some distance from the base gage. At some stations the 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 streamgaging stations in Montana the stage-discharge relation is usually affected by ice from November to March, and it becomes impossible to compute the discharge in the usual manner. 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 for other stations in the same or nearby basins.

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relation of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relation. Even when this is done, the contents computed may become increasingly in error as the lapsed time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relation much as other stream discharges are computed.

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

Records published for each continuous-record surface-water discharge station (gaging station) consist of four parts: the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; and 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.

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 to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations 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 were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers or river mile indexes supplied by the Montana Department of Natural Resources and Conservation.

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 indicates the 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 flow at it can reasonably be considered equivalent to flow at the present station.

REVISED RECORDS.--Because of new information, published records occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see glossary), 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 will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a REMARKS paragraph is used to identify estimated record, the paragraph will begin with this

information presented as the first entry. The paragraph is also used to present information 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, outlet works and spillway, and 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.--Included here is information concerning 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.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published 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 ever revised after the station was discontinued. Of course, if the data for a discontinued station were obtained by computer retrieval, the data would be current and there would be no need to check because 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 "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Headings for AVERAGE DISCHARGE, EXTREMES FOR PERIOD OF RECORD, AND EXTREMES FOR CURRENT YEAR have been deleted and the information contained in these paragraphs is now presented in the tabular summaries following the discharge table or in the REMARKS paragraph. No changes have been made to the data presentations of lake contents.

Data table of daily mean values

The daily table of discharge records for streamgaging 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 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 also is usually 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"). Figures for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if there is extensive regulation or diversion 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 contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "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 figures. 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. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be 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 record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be 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

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 this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to 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. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

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.)

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period. Note that secondary instantaneous peak discharges above a selected base discharge are stored in District computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of title page of this report.)

INSTANTANEOUS PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, 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 equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

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

Inches (INCHES) indicates 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 Montana data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote (e-- Estimated) or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Currently, statistics are not computed for seasonal Canadian stations, which are published by calendar year. Monthly statistics can be obtained for these stations by contacting the District Office in Helena.

Accuracy of the Records

The accuracy of streamflow records 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 measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of their true values; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft^3/s; to the nearest tenth between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures for more than 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. No rounding rules apply to discharges listed for partial-record stations and miscellaneous sites. Listed discharges are those actually computed.

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, figures 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 Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables is on file in the Montana district office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the office whose address is given 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 8. 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.

Records of Surface-Water Quality

Records of surface-water quality in this report represent a variety of data types and measurement frequencies. Whenever possible, records of surface-water quality are obtained at or near streamgaging stations because interpretation of surface-water quality and seasonal variation is enhanced by knowledge of corresponding discharge data. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 7.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A daily-record station is a site where data are collected with sufficient frequency to develop a daily record of water-quality values, such as water temperature, suspended sediment, and specific conductance. A periodic-record station is a site where water-quality data are collected systematically over a period of years. A miscellaneous sampling site is a location where samples are collected one time or intermittently to provide better areal coverage for defining water-quality conditions over a broad area in a river basin.

A careful distinction needs to be made between "continuing records," as used in reference to data for daily-record stations, and "continuous record," which refers to a continuous graph over time or a series of discrete values recorded at short time intervals on a paper tape. Some records of water quality, such as water temperature and specific conductance, may be obtained through continuous recordings; however, most water-quality data are obtained on a monthly or less frequent basis.

Onsite Measurements and Sample Collection

When obtaining water-quality data, a major concern is assuring that onsite water-quality measurements and the samples collected for laboratory analysis are representative of the actual quality of the water. Measurements such as water temperature, pH, and dissolved oxygen are made onsite when the samples are taken because of the potential for significant change with time. To assure that measurements made in the laboratory also represent the actual environmental concentrations of constituents, prescribed procedures need to be followed in collection and processing of samples. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," (TWRI) Book 1, Chapter D2; Book 3, Chapter C2; Book 5, Chapter A1, A3, and A4. All of these references are listed under "PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS" which appears at the end of the introductory text. Also, detailed information on collecting, treating, and shipping samples may be obtained from other references and from the USGS Montana district office.

Chemical data published in this report are considered to represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. A sample collected from a single point in a stream or lake can adequately define the water quality at a given time if the mixture of dissolved and suspended constituents is homogeneous throughout the stream cross section or lake volume. However, the concentration of

Table 8. 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	36,37	38				
1900	49	49	51,52				
1901	65,66,75	66,75	66,75	1936	805	806	812
1902	83,85	84	85	1937	825	826	832
1903	98,99,100	99	100	1938	855	856	862
1904	128,130	130	135	1939	875	876	882
1905	171	172	178	1940	895	896	902
1906	207	208	214	1941	935	936	932
1907	245	246	252	1942	955	956	962
1908	245	246	252	1943	975	976	982
1909	265	266	272	1944	1005	1006	1012
1910	285	286	293	1945	1035	1036	1042
1911	305	306	312	1946	1055	1056	1062
1912	325	326	332A	1947	1085	1086	1093
1913	355	356	362A	1948	1115	1116	1122
1914	385	386	393	1949	1145	1146	1152
1915	405	406	412	1950	1175	1176	1182
1916	435	436	442	1951	1208	1209	1216
1917	455	456	462	1952	1238	1239	1246
1918	475	476	482	1953	1278	1279	1286
1919	505	506	512	1954	1338	1339	1346
1920	505	506	512	1955	1388	1389	1396
1921	525	526	532	1956	1438	1439	1446
1922	545	546	552	1957	1508	1509	1516
1923	565	566	572	1558	1558	1559	1566
1924	585	586	593	1959	1628	1629	1636
1925	605	606	612	1969	1708	1709	1716
1926	625	626	632	1961-65	1913	1916	1933
1927	645	646	652	1966-70	2113	2116	2133
1928	665	666	672				
1929	685	686	693	1950	1308	1309	1316
1930	700	701	707	Compilation			
1931	715	716	722	1960	1728	1729	1736
1932	730	731	737	Compilation			
1933	745	746	752				
1934	760	761	767				
1935	785	786	793				

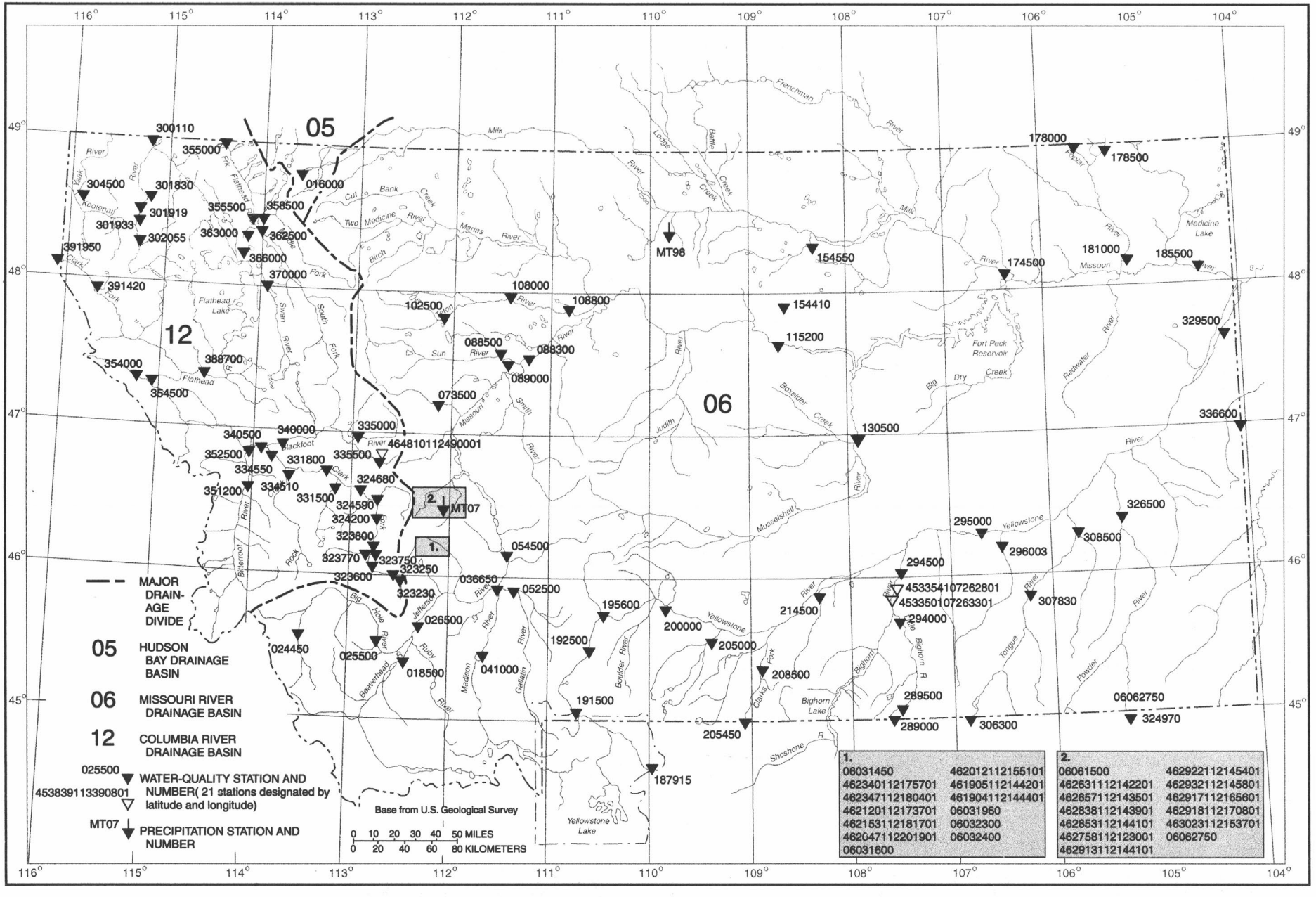


Figure 7. Location of water-quality stations in Montana, water year 2000.

constituents at different locations in the stream cross section or at different depths in a lake may vary widely with different rates of water discharge or lake stratification. Most streams must be sampled through several vertical sections to obtain a representative composite sample needed for an accurate mean concentration and for calculating loads. Samples of the water-sediment mixture in streams typically are collected using suspended-sediment samplers modified to prevent chemical contamination. Samples of the water-sediment mixture in lakes typically are collected near mid-depth in shallow (less than 10 feet deep) lakes or at multiple depths in deeper lakes that are thermally stratified.

For water-quality stations equipped with electronic monitors and digital recorders, the record consists of a daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records of the individual hourly values (unit values) may be obtained from the USGS Montana district office whose address is given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at water-quality stations at the time of sampling. In addition, water temperatures are taken at the time of discharge measurements for streamgaging stations. For stations where water temperatures are measured manually once daily, the water temperatures are taken at about the same time each day for consistency in the record. Large streams commonly have a small diurnal temperature change, whereas shallow streams may have a daily range of several degrees that closely follows the changes in air temperature. The water temperature in some streams may be affected by industrial discharges of warm water.

For stations where recording instruments are used, the record consists of daily maximum, minimum, and mean temperatures for each day and are published in this report. Water temperatures measured at the time of water-discharge measurements and those taken manually once-daily are on file in the Montana district office.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained from several verticals in the cross section. At daily sediment stations, daily samples may be obtained from a single vertical and a coefficient applied to determine the mean concentration in the cross section. Daily mean suspended-sediment concentrations are computed using sample concentrations and the continuous streamflow record according the methods described in TWRI Book 3, Chapter C3. Daily suspended-sediment discharge is then computed as the product of stream discharge times the daily mean concentration times a unit conversion factor of 0.0027.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been 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 water-quality stations that are not daily sediment stations, suspended-sediment samples are collected periodically during the year. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between suspended-sediment concentration and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

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

Laboratory Analyses

Suspended-sediment samples, samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. Samples of precipitation and dry atmospheric deposition collected at National Atmospheric Deposition Program/National Trends Network sites are analyzed by the Illinois State Water Survey laboratory in Champaign, Illinois. Other samples are analyzed at the USGS National Water-Quality Laboratory in Denver, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 3, Chapter C3 and Book 5, Chapter C1. Methods used by the National Water-Quality Laboratory are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; Book 5, Chapter A1, A3, and A4.

In March 1989, the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989.

New protocols have been established by the USGS for the collection and processing of surface-water samples that are analyzed for dissolved inorganic constituents[6]. These protocols are designed to produce trace-element data that are free of potential contamination associated with sample collection and filtration procedures. Because of the very low

concentrations of some trace constituents in the environment, special precautions are necessary to protect the sample during processing from the introduction of trace constituents that could lead to a positive bias in reported concentrations. The protocols have been tested to assure reliable results at the microgram per liter (parts per billion) level. Dissolved trace-element data published prior to implementation of the protocols in 1993 may have a potential positive bias ranging from negligible to several micrograms per liter, depending on the procedures and sampling equipment used at the site.

Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (ug/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are commonly within the range of 10's to 100's of nanograms per liter (ng/L, parts per trillion) in many streams. Data above the ug/L level may actually represent elevated environmental concentrations resulting from natural or human causes; however, past data could reflect trace levels of contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the USGS began using new trace-element protocols at some stations in water year 1993.

Explanation of the Reporting Convention for Long-Term Method Detection Levels

The U.S. Geological Survey 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-MDL's) and laboratory reporting levels (LRL's). 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. The chance of 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 <LRL for samples in which the analyte was either not detected or did not pass identification. Analytes that are detected at concentrations between the LT-MDL and 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.

[6]Horowitz, A.J., Demas, C.R., Fitzgerald, K.K., Miller, T.L., and Rickert, D.A., 1994, U.S. Geological Survey Protocol for the Collection and Processing of Surface-Water Samples for the Subsequent Determination of Inorganic Constituents in Filtered Water: U.S. Geological Survey Open-File Report 94-539, 57 p.

Presentation of Water-Quality Records

Water-quality records collected at a streamgaging station are published immediately following the daily discharge record. Station number and name are the same for both records. Where a daily discharge record is not available or where the location of the water quality station differs significantly from that of the nearby streamgaging station, the water-quality record is published with its own station number and name in the standard downstream-order sequence.

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, cooperating agencies, and extremes for parameters measured on a daily basis. Tables of chemical, physical, biological, and radiochemical data obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, water temperature, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the streamgaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, 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 under "Records of Stage and Water Discharge"; same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge"; same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. 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 monitor, 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. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

Remark Codes

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

PRINTED OUTPUT	REMARK
E	Estimated value.
>	Actual value is known to be greater than the value shown. The value associated with the ">" remark indicates the detection limit of the applied laboratory.
<	Actual value is known to be less than the value shown. The value associated with the "<" remark indicates the detection limit of the applied laboratory.
K	Reporting bacteria densities when plate counts fall outside of an ideal range. The lower limit of 20 colonies is set as the number below which statistically valid results become increasingly questionable. The upper limit, which differs according to type of bacteria, represents numbers above which interference from colony crowding, deposition of extraneous material, and other factors appear to result in increasingly questionable results.

Water Quality-Control Data

Data generated from quality-control (QC) samples are used to evaluate the quality of the sampling and processing techniques, as well as data from the actual samples themselves. Interpretation of environmental sample data is aided when the errors associated with sample measurements are known. The various types of QC samples collected by this district are described in the following section. Procedures have been established for the storage of QC data within the USGS. These procedures allow for identification of various types of QC data so that they can be related to corresponding environmental samples.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the constituents of interest. Any detectable concentration of a constituent in the blank solution is believed to be due to contamination introduced at some point during sample collecting, processing, or analysis. There are many types of blank samples possible, each designed to test 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 not processed in the field, but is put in the same type of bottle used for an environmental sample and transported 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 using recently cleaned equipment).

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 splitting an environmental sample.

Preservation blank - a blank solution that is treated with the same preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory whose 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 two or more sets of environmental samples collected in the same manner such that the samples are considered to be essentially identical in composition. Replicate samples are collected and analyzed to establish the amount of variability in the data, which can be contributed by either the collection or analytical process or both. There are many types of replicate samples 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:

Sequential samples - a type of replicate sample in which the samples are collected one after the other, typically over a short time (pumped samples).

Split sample - a type of replicate sample in which a single composite sample is split into subsamples.

Concurrent replicate sample - two sets of samples, collected independently, but at the same time and place.

Spike Samples

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

Publications

The annual series of Water-Supply Papers that give information on quality of surface waters in Montana are 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	1994	1996
1952	1251	1253	1967	2013	2016
1953	1291	1293	1968	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			

Records of Ground-Water Levels

Water-level data from a network of observation wells are given in this report. These data are intended to provide a sampling and historical record of water-level changes in the Nation's most important aquifers. Locations of the observation wells in this network in Montana are shown in figure 8.

Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability. Water-level records are obtained primarily from direct measurements with a steel or electric tape.

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 to water of several hundred feet, the error of 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 to a tenth of a foot or a larger unit.

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.	Year	WSP No.	Year	WSP No.
1940	910	1947	1100	1954	1325
1941	940	1948	1130	1955	1408
1942	948	1949	1160	1956-60	1760
1953	990	1950	1169	1961-65	1845
1944	1020	1951	1195	1966-70	1980
1945	1937	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 for most current or discontinued gaging stations through the world wide web (WWW). These data for Montana may be accessed at:

http://montana.usgs.gov

or for the nation at:

http://water.usgs.gov

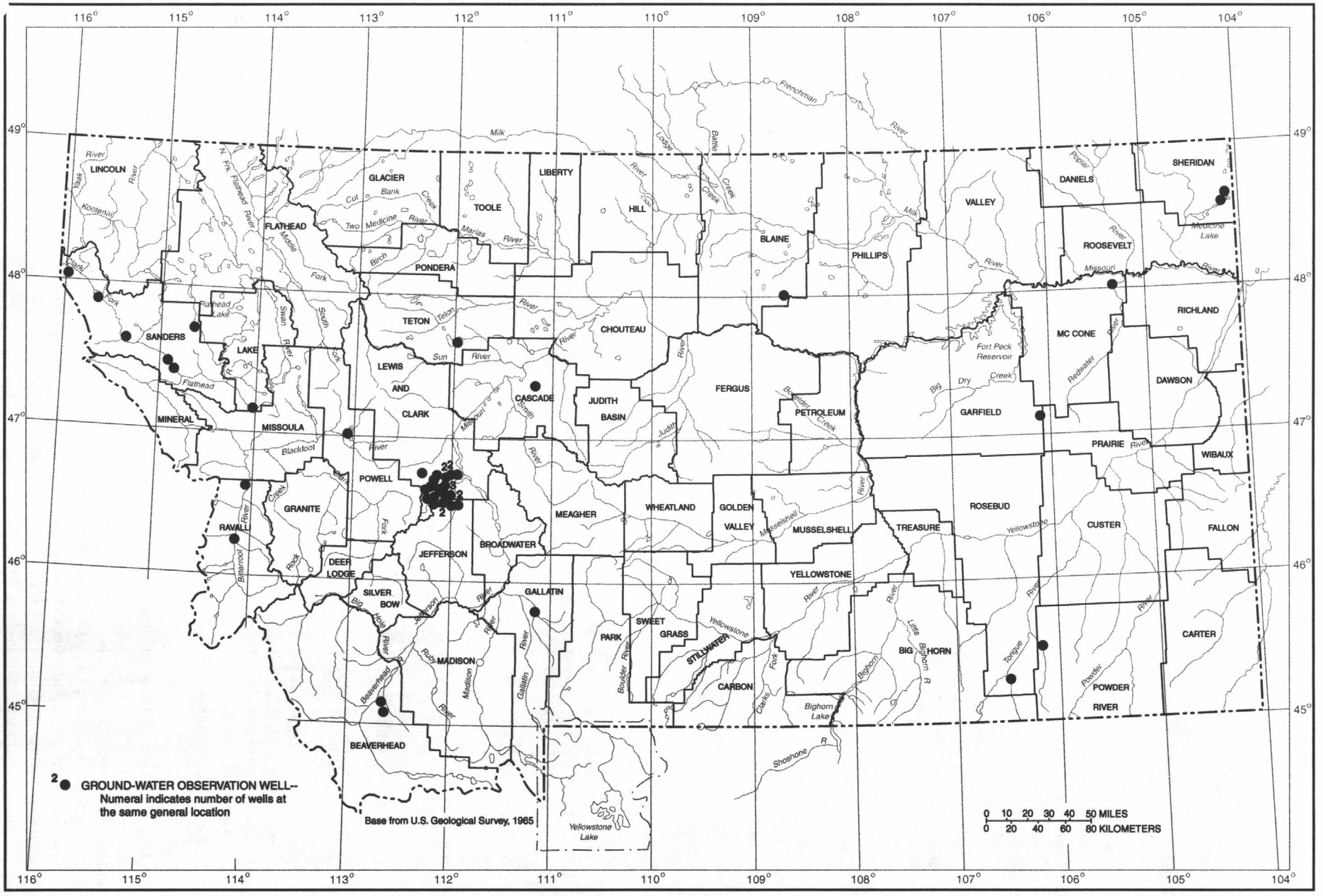


Figure 8. Location of ground-water observation wells in Montana, water year 2000.

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3.5-in. floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (see address on the back of the title page).

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

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 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 325,851 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

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

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while 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.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often 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). Bacteria concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria that are present in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as Gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms which 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). Bacteria concentrations are expressed as number of colonies per 100 mL of 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 warm-blooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which 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). Bacteria concentrations are expressed as number of colonies per 100 mL of sample.

Enterococcus bacteria are commonly found in the feces of humans and other warm-blooded 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 which produce pink to red colonies with black or reddish-brown precipitate after incubation at 41°C on mE agar and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis, Streptococcus feacium, Streptococcus avium*, and their variants.

Escherichia coli (E. coli) are bacteria present in the intestine and feces of warm-blooded 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. Their concentrations are expressed as number of colonies per 100 mL of sample.

Base flow is flow in a channel sustained by ground-water discharge in the absence of direct runoff.

Bed load is the sediment which moves along in essentially continuous contact with the streambed by rolling, sliding, and making brief excursions into the flow a few particle diameters above the bed (within 0.25 ft of the streambed).

Bed load discharge (tons per day) is the quantity of sediment moving as bed load, reported as dry weight, that moves past a cross section in a given time.

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Benthic organisms (invertebrates) are the group of animals inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, 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 micro-organisms, such as bacteria.

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

Ash mass is the mass or amount of residue present after the residue from the 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); periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying zooplankton and periphyton 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.

Organic mass or volatile mass of the 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.

Wet mass is the mass of living matter plus contained water.

Bottom material. See Bed material.

Cells/volume refers to the number of cells of any organism which 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 are generally reported as cells or units per milliliter (mL) or liter (L).

Cfs-day 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, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,447 cubic meters.

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. COD values may correlate with BOD or with organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

Colloid is any substance consisting of particles of such small size dispersed in a medium (for example, water) that they do not readily settle out; but not so small that they can be said to be truly dissolved.

Color unit is produced by one 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.

Control designates a feature in the channel downstream from a gaging station that physically influences 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.

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

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second. It is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute, or 0.02832 cubic meters per second.

Daily-record station is a site where data are collected with sufficient frequency to develop a daily record of streamflow or water-quality values (sediment, water temperature, and specific conductance). The frequency of data collection can range from continuous recording of stage or water-quality parameters to periodic sample collection on a daily or near-daily basis.

Discharge, or flow, is a rate, commonly referring to the volume of water that passes a given point within a given period of time (cubic feet per second). Discharge can also apply to suspended sediment or other chemical constituents, whereby the rate refers to a mass of constituent that passes a point in a given period of time (tons per day).

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days in a 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.)

Instantaneous discharge is the discharge at a particular instant of time.

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

Dissolved refers to that material in a representative water sample that passes through a 0.45-µm membrane filter. This is an operational definition used by most 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) concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration. 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.

Dissolved-solids concentration of water 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 of dissolved solids, the bicarbonate concentration (generally a major dissolved component of water) is converted to carbonate concentration, in milligrams per liter, by multiplying by 0.492. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the 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 is occupied by a drainage system with a common outlet for its surface runoff (see "Drainage area").

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.

Gage datum is the mean sea-level elevation of the zero point of the reference gage from which gage height is determined. This elevation is established for each gage by a system of levels from known benchmarks, by approximation from topographic maps, or by geographical positioning system.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. Gage height is often used interchangeably with the more general term "stage."

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

Ground-water level is the elevation of the water table or another potentiometric surface at a particular location.

Hardness of water is a physical-chemical characteristic that is commonly 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 ($CaCO_3$).

Hydrologic benchmark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a benchmark station may be used to separate effects of natural from human-induced changes in other basins that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped benchmark basin.

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; each hydrologic unit is identified by an 8-digit number.

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

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

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

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

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

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.

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 mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

Miscellaneous sampling site is a location where samples are collected one time or intermittently to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place. *See NOAA web site: http://www.ngs.noaa.gov/faq.shtml*

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of Formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

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

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to a 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.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

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 U.S. Geological Survey 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 either sieve or sedimentation methods. The sedimentation method utilizes 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 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	.004 - .062	Sedimentation
Sand	.062 - 2.0	Sedimentation/sieve
Gravel	2.0 - 64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. 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.

Percent composition 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, mass, or volume.

Periodic station is a site where chemical or physical 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. While 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 indicates the degree of acidity or alkalinity of water and is expressed in logarithmic units. Solutions with pH less than 7 are termed "acidic," and solutions with a pH greater than 7 are termed "basic." Solutions with a pH of 7 are neutral.

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).

Phytoplankton is the plant part of the plankton. They are usually 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 are commonly known as algae.

Blue-green algae *(Cyanophyta)* are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often 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.

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

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 by the plants (carbon method).

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. 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 in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

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. 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.

Radioisotopes are isotopic forms of an element 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.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Recurrence interval is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. Recurrence interval is a simplified expression of a statistical probability and does not imply that hydrologic events occur at fixed intervals of time.

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

River mile is the distance along the meandering path of the stream channel. River mile is typically used to denote location along a river, in miles upstream from the mouth of the river.

Runoff in inches (IN, in.) represents the depth, in inches, to which the drainage basin would be covered if all the runoff for a given time period were uniformly distributed on it.

Sea level refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929. *See: http://www.co-ops.nos.noaa.gov/glossary/gloss_n.html#NGVD*

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it 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 influenced by environmental and land-use factors. Some major factors are topography, soil characteristics, land disturbance, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

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 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The entire sample is used for the analysis.

Daily mean suspended-sediment concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

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

Suspended-sediment load is a general term that refers to the total mass of material in suspension that passes a point during a specified period of time.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, reported as dry weight, that passes a section during a unit time.

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.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution 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 MILL/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 waters, to evaluate mixing of different waters, 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 gage height (stage) 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.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms.

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

Surface area of a lake is that area (acres) as 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 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is operationally defined as the 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-µm membrane filter 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 the 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 sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by directly analyzing the suspended material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total-recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended 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. A 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 the suspended material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

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.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical 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:	Arthropoda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	*Hexagenia*
Species:	*Hexagenia limbata*

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 indicates the dry mass (tons) of dissolved solids 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 or suspension that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

Total is the total 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 all of the constituent in the sample.)

Total recoverable is the amount of a given constituent in a whole-water sample after a representative suspended-sediment 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 among laboratories performing such analyses because different digestion procedures may produce different analytical results.

Turbidity is a measurement of the collective optical properties of a water sample that cause light to be scattered and absorbed rather than transmitted in straight lines; the higher the intensity of scattered light, the higher the turbidity. In this report, turbidity is expressed in nephelometric turbidity units (NTU), obtained from the Nephelometric method for turbidity determination which measures the intensity of light scattered by suspended particles at 90 degrees from the path of an incident light source.

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 man-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often 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 level is the water-surface elevation or stage of the free surface of a body of water above or below any datum (see "Gage height"), or the surface of water standing in a well, usually indicative of the position of the water table or other potentiometric surface.

Water table is the surface of a ground-water body at which the water is at atmospheric pressure.

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

Water year in U.S. Geological Survey 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, 2000, is called the "2000 water year."

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. WRD now is used to designate "Water Resources Division" of the USGS.)

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 a given period of time after thorough mixing in the reservoir.

Well is an excavation (pit, hole, tunnel), generally cylindrical in form and often walled in, drilled, dug, driven, bored, or jetted into the ground to such a depth as to penetrate water-yielding geologic material and allow the water to flow or to be pumped to the surface.

Wet weight refers to the weight of animal tissue or other substance including its contained water.

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. Individual chapters within sections are limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address or by calling 1-888-ASK-USGS. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

In addition to the reports published in the series Techniques of Water-Resources Investigations (TWRI), other report series present publications on various USGS methods. Some of these reports supersede the earlier TWRIs. Pertinent

reports describing USGS methods are listed at the end of this section.

TWRI Reports:

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

1-D1. *Water temperature—influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS–TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS–TWRI Book 1, Chapter D2. 1976. 24 pages.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

2-D1. *Application of surface geophysics to ground-water investigations*, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS–TWRI Book 2, Chapter D1. 1974. 116 pages.

2-D2. *Application of seismic-refraction techniques to hydrologic studies,* by F.P. Haeni: USGS–TWRI Book 2, Chapter D2. 1988. 86 pages

Section E. Subsurface Geophysical Methods

2-E1. *Application of borehole geophysics to water-resources investigations,* by W.S. Keys and L.M. MacCary: USGS–TWRI Book 2, Chapter E1. 1971. 126 pages.

2-E2. *Borehole geophysics applied to ground-water investigations,* by W.S. Keys: USGS–TWRI Book 2, Chapter E2. 1990. 150 pages.

Section F. Drilling and Sampling Methods

2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells,* by Eugene Shuter and W.E. Teasdale: USGS–TWRI Book 2, Chapter F1. 1989. 97 pages.

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

3-A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS–TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS–TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS–TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS-TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS–TWRI Book 3. Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS–TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI Book 3, Chapter A9. 1989. 27 pages.

3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A10. 1984. 59 pages.

3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI Book 3, Chapter A11. 1969. 22 pages.

3-A12. *Fluorometric procedures for dye tracing, Revised,* by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI Book 3, Chapter A12. 1986. 41 pages.

3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A13. 1983. 53 pages.

3-A14. *Use of flumes in measuring discharge,* by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI Book 3, Chapter A14. 1983. 46 pages.

3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS–TWRI Book 3, Chapter A15. 1984. 48 pages.

3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI Book 3, Chapter A16. 1985. 52 pages.

3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS–TWRI Book 3, Chapter A17. 1985. 38 pages.

3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI Book 3, Chapter A18. 1989. 52 pages.

3-A19. *Levels at streamflow gaging stations,* by E.J. Kennedy: USGS–TWRI Book 3, Chapter A19. 1990. 31 pages.

3-A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI Book 3, Chapter A20. 1993. 38 pages.

3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS–TWRI Book 3, Chapter A21. 1995. 56 pages.

Section B. Ground-Water Techniques

3-B1. *Aquifer-test design, observation, and data analysis,* by R.W. Stallman: USGS–TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction,* by G.D. Bennett: USGS–TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. *Type curves for selected problems of flow to wells in confined aquifers,* by J.E. Reed: USGS–TWRI Book 3, Chapter B3. 1980. 106 pages.

3-B4. *Regression modeling of ground-water flow,* by R.L. Cooley and R.L. Naff: USGS–TWRI Book 3, Chapter B4. 1990. 232 pages.

3-B4. *Supplement 1. Regression modeling of ground-water flow—Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems,* by R.L. Cooley: USGS–TWRI Book 3, Chapter B4. 1993. 8 pages.

3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction,* by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS–TWRI Book 3, Chapter B5. 1987. 15 pages.

3-B6. *The principle of superposition and its application in ground-water hydraulics,* by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS–TWRI Book 3, Chapter B6. 1987. 28 pages.

3-B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow,* by E.J. Wexler: USGS–TWRI Book 3, Chapter B7. 1992. 190 pages.

Section C. Sedimentation and Erosion Techniques

3-C1. *Fluvial sediment concepts,* by H.P. Guy: USGS–TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment,* by Thomas K. Edwards and G. Douglas Glysson: USGS–TWRI Book 3, Chapter C2. 1988. 80 pages.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI Book 3, Chapter C3. 1972. 66 pages.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

4-A1. *Some statistical tools in hydrology,* by H.C. Riggs: USGS–TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves,* by H.C. Riggs: USGS–TWRI Book 4, Chapter A2. 1968. 15 pages.

Section B. Surface Water

4-B1. *Low-flow investigations,* by H.C. Riggs: USGS–TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply,* by H.C. Riggs and C.H. Hardison: USGS–TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics,* by H.C. Riggs: USGS–TWRI Book 4, Chapter B3. 1973. 15 pages.

Section D. Interrelated Phases of the Hydrologic Cycle

4-D1. *Computation of rate and volume of stream depletion by wells,* by C.T. Jenkins: USGS–TWRI Book 4, Chapter D1. 1970. 17 pages.

Book 5. Laboratory Analysis

Section A. Water Analysis

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments,* by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI Book 5, Chapter A1. 1989. 545 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy,* by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. *Methods for the determination of organic substances in water and fluvial sediments,* edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI Book 5, Chapter A3. 1987. 80 pages.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples,* by L.J. Britton and P.E. Greeson, editors: USGS–TWRI Book 5, Chapter A4. 1989. 363 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments,* by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS–TWRI Book 5, Chapter A5. 1977. 95 pages.

5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments,* by L.C. Friedman and D.E. Erdmann: USGS–TWRI Book 5, Chapter A6. 1982. 181 pages.

Section C. Sediment Analysis

5-C1. *Laboratory theory and methods for sediment analysis,* by H.P. Guy: USGS–TWRI Book 5, Chapter C1. 1969. 58 pages.

Book 6. Modeling Techniques

Section A. Ground Water

6-A1. *A modular three-dimensional finite-difference ground-water flow model,* by M.G. McDonald and A.W. Harbaugh: USGS–TWRI Book 6, Chapter A1. 1988. 586 pages.

6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model,* by S.A. Leake and D.E. Prudic: USGS–TWRI Book 6, Chapter A2. 1991. 68 pages.

6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems,* Part 1: Model Description and User's Manual, by L.J. Torak: USGS–TWRI Book 6, Chapter A3. 1993. 136 pages.

6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems,* Part 2: Derivation of finite-element equations and comparisons with analytical solutions, by R.L. Cooley: USGS–TWRI Book 6, Chapter A4. 1992. 108 pages.

6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems,* Part 3: Design philosophy and programming details, by L.J. Torak: USGS–TWRI Book 6, Chapter A5, 1993. 243 pages.

6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction,* by Eric D. Swain and Eliezer J. Wexler. 1996. 125 pages.

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments,* by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS–TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water,* by L.F. Konikow and J.D. Bredehoeft: USGS–TWRI Book 7, Chapter C2. 1978. 90 pages.

7-C3. *A model for simulation of flow in singular and interconnected channels,* by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI Book 7, Chapter C3. 1981. 110 pages.

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

8-A1. *Methods of measuring water levels in deep wells,* by M.S. Garber and F.C. Koopman: USGS–TWRI Book 8, Chapter A1. 1968. 23 pages.

8-A2. *Installation and service manual for U.S. Geological Survey manometers,* by J.D. Craig: USGS–TWRI Book 8, Chapter A2. 1983. 57 pages.

Section B. Instruments for Measurement of Discharge

8-B2. *Calibration and maintenance of vertical-axis type current meters,* by G.F. Smoot and C.E. Novak: USGS–TWRI Book 8, Chapter B2. 1968. 15 pages.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

9-A1. *National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A1. 1998. 47 p.

9-A2. *National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A2. 1998. 94 p.

9-A3. *National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A3. 1998. 75 p.

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9-A5. *National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A5. 1999, 149 p.

9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI Book 9, Chapter A6. 1998. Variously paginated.

9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI Book 9, Chapter A7. 1997 and 1999. Variously paginated.

9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI Book 9, Chapter A8. 1998. 48 pages.

9-A9. *National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities*, by S.L. Lane and R.G. Fay: USGS–TWRI Book 9, Chapter A9. 1998. 60 pages.

Other USGS Methods Report:

OFR 93-125. *Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of inorganic and organic constituents in water and fluvial sediments*, by M.J. Fishman, ed., 1993. 217 pages.

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 Conductance	Water Temperature	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	--	--	--	--	--	--
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-P**	**1913-P**	--	--	--	1990-92	**1996-P**	--
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**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
05018500	**St. Mary Canal at St. Mary Crossing, near Babb**	--	**1918-P**	--	--	--	--	--	--	--
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06014500	Red Rock River at Red Rock	1,548	1890, 1951-52, 1974-83	1974-83	--	--	--	--	--	--
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**	--	--	--	--	--	--
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	1951-52, 1964-71	--	--	--	--	--	--
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**	--		1962-74	**1950-51, 1962-81, 1986, 1999-P**	**1999-P**	--
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06022500	Ruby River near Sheridan	863	1946-51	--	--	--	--	--	--	--
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	--	--	--	--	--	--
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-P**	1998-P	--	--	--	--	--	--
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-P**	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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued								
06028000	Big Pipestone Creek near Whitehall	108	1910-11	--	--	--	--	--	--	--
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-P**	**1997-P**	--
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-P**	**1938-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--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**	--	**1986-87, 1999-P**	**1999-P**	--
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	1984-96	1983-88	1983-93	--	1987,1989	--	--
06037000	Gibbon River near West Yellowstone	118	1913-16, 1984-96	1984-96	1983-88	1983-93	--	1987, 1989	--	--
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	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	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-P**	1960	1959	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--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							
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	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**	--	--	--	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	--	--
06046100	Ridgley Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
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-P**	--	--	--	--	--	--
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	--	--
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	--	--	--	--	--	--	--
06052100	Cowan Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06052200	Gibson Creek near Manhattan	--	1952-53	--	--	--	--	1949,1951	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
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**	--	1949,1951, **1957,1986, 1999**	**1965,1999**	--
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**	**1965, 1973-95, 1999**	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-P**	--	--	--	--	--	--
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--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 Conductance	Water Temperature	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-P**	**1911-16, 1923-33, 1946-53, 1955-69, 1975, 1979-P**	--	--	--	**1950, 1999-P**	**1999-P**	--
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-P**	**1997-P**	--	--	--	**1999-P**	**1999-P**	--
06063000	Tenmile Creek near Helena	96.5	1908-54, 1997-98	1909-54, 1975,1981, 1997-98	--	--	--	1950-51, 1997-98	1997-98	--
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	--	--	--	--	--	--
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**	--	--	--	--
06067000	Little Prickly Pear Creek above Deadman Creek, near Marysville	20.1	1909-11	--	--	--	--	--	--	--
06067500	Deadman Creek near Marysville	9.52	1909-11	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06068000	Lost Horse Creek near Marysville	13.1	1909-11	--	--	--	--	--	--	--
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**	--	--	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-P**	**1999-P**	--
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

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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								
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
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06080500	Pishkun Reservoir near Augusta	--	1936-95	--	--	--	--	1951	--	--
06080700	Spring Valley Canal below Spring Valley drop, near Fairfield	--	1967-68	--	--	--	--	--	--	--
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**	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06089000	**Sun River near Vaughn**	1,854	**1897, 1934-P**	**1934-P**	**1969-P**	1969-79	--	**1969-P**	**1987-94 1996-P**	1987-94
06089300	Sun River tributary near Great Falls	21.0	--	1956-73, 1975, 1979-80	--	--	--	--	--	--
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06093600	Two Medicine River near Cut Bank	--	--	--	--	--	--	1982-84	--	--
06094000	Swift Reservoir near Dupuyer	75.3	1916, 1936-64, 1967-95	--	--	--	--	--	--	--
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	112	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	--	--
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	--	--
06099100	Spring Creek near Cut Bank	91	--	--	--	--	--	1982-84, 1991-92	--	--
06099300	Cut Bank Creek at mouth, near Cut Bank	1,213	--	--	--	--	--	1991-92	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
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	--	--	--	--	--	--
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**	--	--	--	1964-72, 1978-86, 1991	1978-86	1978-86
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	6,995	1960-72	1960-72	--	--	--	--	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	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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								
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	--	--	--	--	--	--	--
06105500	Willow Creek near Choteau	88.2	1912-17	--	--	--	--	--	--	--
06105800	**Bruce Coulee tributary near Choteau**	1.70	--	**1963-P**	--	--	--	--	--	--
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**	--		--	**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-P**	--	--	--	--	--	--
06109560	**Alkali Coulee tributary near Virgelle**	0.96	--	**1974-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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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								
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	--	--	--	--	--	--	--
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**	--	--	--	--	--	--
06114900	**Taffy Creek tributary near Winifred**	2.95	--	**1974-P**	--	--	--	--	--	--
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**	**2000**	--	--	--	--	--	--
06115300	**Duval Creek near Landusky**	3.31	**2000**	**1963-P**	--	--	--	--	--	--
06115350	**Rock Creek near Landusky**		**2000**	**2000**						
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-P**	--	--	--	--	--	--
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	--	--	--	--	--	--
06120000	Big Elk Creek at Twodot	89.1	1953-56	--	--	--	--	--	--	--
06120500	**Musselshell River at Harlowton**	1,125	**1907-P**	**1909-P**	--	--	--	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--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 Conductance	Water Temperature	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	0908-11, 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 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-P**	**1996-P**	--	--	--	--	--	--
06127060	**Willow Creek at U.S. Canal, near Roundup**	141	**1995-P**	**1996-P**	--	--	--	--	--	--
06127100	South Willow Creek tributary near Roundup	1.38	--	1962-76	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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								
06127150	East Parrot Creek near Roundup	20.2	--	--	--	--	--	1979-80	1979-80	--
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	19.6	--	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-P**	--	--	--	--	--	--
06130000	Flatwillow Creek near Mosby	1,855	1964-66	--	--	--	1964-66	1964-66	1964-66	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06130500	**Musselshell River at Mosby**	7,846	**1929-35, 1934-P**	**1929, 1931-32, 1934-P**	--	--	1983-95	**1975-95, 1999-P**	**1975-1997, 1999-P**	**1975-P**
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**	--	--	--	--	--	--
06130650	**Hell Creek near Jordan**	70.6	**2000**	**2000**	--	--	--	--	--	--
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**	**1976-85, 1991, 2000**	--	--	--	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**	--	--	--	1964, 1975-87	1975-87	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--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**	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-P**	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06136500	**Fresno Reservoir near Havre**	3,766	**1940-P**	--	--	--	--	--	--	--
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	--
06139900	Beaver Creek at reservation boundary, near Rocky Boy	16.1	--	--	--	--	--	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--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	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 Canal near Havre	--	1921-24, 1928-68	--	--	--	--	--	--	--
06146500	Reser Ditch near Chinook	--	1905-06	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06147000	West Fork Ditch near Chinook	--	1905-07	--	--	--	--	--	--	--
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 Canal 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**	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06153500	Harlem Canal near Zurich	--	1904-21	--	--	--	--	--	--	--
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-P**	**1977-85 1988-P**	1977-85
06154430	**Lodge Pole Creek at Lodge Pole**	19.5	**1987-P**	**1987-P**	--	--	--	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**	--	--
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-P**	--	--	--	--	--	--
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06155600	**Murphy Coulee tributary near Hogeland**	2.62	--	**1974-P**	--	--	--	--	--	--
06155900	**Milk River at Cree Crossing, near Saco**	13,118	**2000**	**2000**	--	--	--	--	--	--
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	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued								
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	--	--
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06170200	Willow Creek near Hinsdale	283	1965-73	1965-73, 1979	--	--	--	--	--	--
06170500	Rock Creek Canal near Hinsdale	--	1918-20	--	--	--	--	--	--	--
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**	--	**1950-53, 1959-94, 1999**	**1974-94, 1999**	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	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06175000	Porcupine Creek at Nashua	725	1908-24, 1982-92	1909, 1912-21, 1923-24, 1939, 1982-93	--	--	--	1982-89	--	--
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-P**	--	--	--	--	--	--
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	--	1949-51, 1961-62, 1965-68, 1970-73	--	--
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-P**	--	--	--	--	--	--
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
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	--	--	--	--	--	--
06177500	**Redwater River at Circle**	547	**1929-72, 1974-P**	**1929-30, 1932-72, 1975-P**	--	--	--	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	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
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**	--	**1975-81, 1987-94, 1999**	**1975-81, 1987-94, 1999**	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
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-P**	--	--	--	--	--	--
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	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
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**	--	--	1972-76	**1965-86, 1992-94, 1997-P**	**1972-86, 1997-P**	1969-86
			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**	1,006	**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**	--	--	--	**1999-P**	**1999-P**	**2000**
06187950	**Soda Butte Creek near Lamar Ranger Station, Yellowstone National Park**	99	**1989-P**	**1989-P**	--	--	--	1989	--	--
06188000	**Lamar River near Tower Falls 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 Springs Outflow, near Mammoth, Yellowstone National Park	--	--	--	--	--	--	1988-93	--	--
06190415	Mammoth 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	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06190530	Clematis Creek at Mammoth, Yellowstone National Park	2.71	--	--	--	--	--	1990-92	--	--
06190540	Hot River at Mammoth, Yellowstone National Park	--	1989-94	1989-95	1989-90	1989-90	--	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**	2,623	**1889-93, 1910-P**	**1890-93 1911-P**	1984-85	1977-81, 1984-85	1985-92	**1956-57, 1969-74, 1988-90 1999-P**	**1965, 1985-92 1999-P**	**1969-74 2000**
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**	1985-86	**1970-94, 1999-P**	**1965, 1979-94, 1999-P**	1979-94
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**	--	**1999-P**	**1999-P**	--
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	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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								
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**	--	**1965, 1999-P**	**1965, 1981-83, 199_**	--
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	--	--	--	--	--	--
06201650	Work Creek near Reed Point	32.5	--	1959-73, 1978	--	--	--	--	--	--
06201700	**Hump Creek near Reedpoint**	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	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
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**	--	--	--	**199P**	**1965,1981, 1999-P**	--
06205050	Stillwater River near Columbus	--	--	--	--	--	--	--	1982-83	--
06205100	**Allen Creek near Park City**	7.17	--	**1961-P**	--	--	--	--	--	--
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	--	--
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**	2,032	**1921-69, 1987-P**	**1922-32, 1934-69, 1987-P**	--	**2000**	1972-73	**1964-65, 1999-P**	**1965,1973, 1999-P**	**2000**
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	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06209500	**Rock Creek near Red Lodge**	105	**1932-82, 1985-86, 2000**	**1932, 1934-82, 1985-86, 2000**	--	--	--	--	--	--
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	--	--	--	--	--	--
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-P**	**1938-P**	--	--	--	--	--	--
06213000	Red Lodge Creek near Boyd	234	1932-37	--	--	--	--	--	--	--
06213500	Rock Creek at Joliet	539	1946-53	1946-53	--	--	--	--	--	--
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-P**	--	--	--	--	--	--
06214500	**Yellowstone River at Billings**	11,795	**1904-05, 1928-P**	**1904-05, 1918, 1929-P**	--	--	1977-81	**1963-93 1999-P**	**1965, 1975-93 1999-P**	1975-93
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**	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued								
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	--	--	--	--	--	--
06286400	**Bighorn Lake near St. Xavier**	19,626	**1965-P**	--	---	--	--	--	--	--
06286490	**Bighorn Canal near St. Xavier**	--	**1966-P**	--	--	--	--	--	--	--
06286500	Bighorn 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	--	1963-74	--	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**	193	**1939-P**	**1939-P**	--	--	--	**1993-P**	**1993-P**	**1993-P**
06289500	**Little Bighorn River near Wyola**	251	1912-24	1912-24	--	--	--	**1993-P**	**1993-P**	**1993-P**
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
06290500	**Little Bighorn River below Pass Creek, near Wyola**	428	**1939-75, 1977-P**	**1939-P**	--	--	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**	--	--	--	--	--	--
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-P**	**1971-75, 1977, 1993-P**	**1993-P**
06294400	**Andresen Coulee near Custer**	2.35	--	**1963-P**	--	--	--	--	--	--
06294500	**Bighorn River above Tullock Creek, near Bighorn**	22,414	**1982-P**	**1982-P**	--	**2000**	--	**1999-P**	**1999-P**	--
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
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**	40,339	**1921-23, 1977-P**	**1921-23, 1978-P**	--	--	1978-81	**1974-82 1999-P**	**1975-82 1999-P**	**1975,1978, 1979,2000**
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-P**	--	--	--	--	--	--
06295110	Rosebud Creek at Kirby	--	--	--	--	--	--	1978-79	1978-79	--
06295113	**Rosebud Creek at reservation boundary, near Kirby**	123	**1980-P**	**1980-P**	--	--	--	1980-84	1980-84	--
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-P**	**1975-86, 1988-93, 1999-P**	--
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	--	--	--	--	--	--	--
06306300	**Tongue River at State line, near Decker**	1,477	**1960-P**	**1961-P**	1983-87	1966-76	--	**1966-P**	--	1986-88
06306500	Tongue River near Decker	1,585	1928-38	1928-38	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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								
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	--	--	1951, 1976-95	1976-96	--
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	--
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	1974-84, 1986-95	1981-83, 1986-87	--	--	1975-95	1975-95	--
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**	--	--	--	1980-93	1980-86	--
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	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
		Part 6--Yellowstone River Basin--Continued								
06307740	Otter Creek at Ashland	707	1973-85, 1988-95	1973-85, 1988-95	1981-85	--	--	1975-85, 1988-95	1975-85, 1988-95	--
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**	**1974-84, 2000**	--	--	1975-81	**1974-81, 2000**	**1975, 1978-81, 2000**	--
06307840	Liscom Creek near Ashland	47.6	--	--	--	--	--	1975,1977	1975,1977	--
06307890	Foster Creek near Volborg	116	--	--	--	--	--	1975-77	1975-77	--
06307930	**Jack Creek near Volborg**	5.47	--	**1973-P**	--	--	--	--	--	--
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 Volberg**	1.65	--	**1973-P**	--	--	--	--	--	--
06308340	**LaGrange Creek near Volberg**	3.66	--	**1973-P**	--	--	--	--	--	--
06308400	Pumpkin Creek near Miles City	697	1972-85	1973-85	--	--	--	1976-85	1976-85	--
06308500	**Tongue River at Miles City**	5,379	**1938-42, 1946-P**	**1938-41, 1946-P**	--	**2000**	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 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-P**	--	--	--	--	--	--
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

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06324500	**Powder River at Moorhead**	8,088	**1929-72, 1974-P**	**1923, 1929-72, 1975-P**	1986-89	--	1975-96	1949, 1951-53, 1956-57, 1969-72, 1975-92	1975-1997	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	--	--	--	--	--	--
06325500	Little Powder River near Broadus	1,974	1947-53, 1957-72	1947-53, 1956-72, 1978	--	--	--	--	--	--
06325550	Little Powder River at mouth, near Broadus	--	--	--	--	--	--	1978-79, 1988-90	1988-89	--
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**	13,189	**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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
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
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	1903-10, 1932-34	--	--	--	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 tributary near Sidney**	0.49	--	**1974-P**	--	--	--	--	--	--
06329500	**Yellowstone River near Sidney**	69,103	**1910-31, 1933-P**	**1911-31, 1934-P**	--	--	**1972-81, 1983-P**	**1948-P**	**1965, 1972-P**	1970-95

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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								
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	--	--	--	--	--	--
06334100	**Wolf Creek near Hammond**	10.1	--	**1955-P**	--	--	--	--	--	--
06334200	Willow Creek near Alzada	122	--	1958-73	--	--	--	--	--	--
06334330	**Little Missouri River tributary near Albion**	1.49	--	**1972-P**	--	--	--	--	--	--
06334610	**Hawksnest Creek tributary near Albion**	0.92	--	**1973-P**	--	--	--	--	--	--
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-P**	--	1972-82
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
		Part 12--Kootenai River Basin--Continued								
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	--	--	--	--	--	--
12301810	Big Creek near Rexford	137	1972-81	1973-82	--	--	--	--	--	--
12301830	**Lake Koocanusa at Tenmile Creek, near Libby**	--	--	--	--	--	--	**1972-P**	--	**1972-P**
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-P**	--	1972-82
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**	--	--	1968-76	**1967-P**	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-P**	**1969-72, 1974-76, 1999-P**	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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 12--Kootenai River Basin--Continued							
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-P**	**1990-P**	--	--	--	--	--	--
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**	--	**1999-P**	**1999-P**	--
			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-P**	**1993-95, 1997-P**	--
12323240	**Blacktail Creek at Butte**	95.4	**1988-P**	**1989-P**	--	--	--	--	--	--
12323248	**Silver Bow Creek above Wastewater Plant Outflow, at Butte**	--	**1999-P**	**2000**	--	--	--	--	--	--
12323250	**Silver Bow Creek below Blacktail Creek, at Butte**	105	**1984-P**	**1984-P**	--	--	--	**1993-95, 1997-P**	**1993-95, 1997-P**	--
12323300	**Smith Gulch near Silver Bow**	4.36	--	**1959-P**	--	--	--	--	--	--
12323500	German Gulch Creek near Ramsay	40.6	1955-69	1955-69, 1975	--	--	--	--	--	--
12323600	**Silver Bow Creek at Opportunity**	284	**1988-P**	**1989-P**	--	--	1993-95	**1993-95, 1997-P**	**1993-95, 1997-P**	--
12323750	**Silver Bow Creek at Warm Springs**	394	**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**	--	**1993-P**	**1993-P**	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
12323800	**Clark Fork near Galen**	572	**1988-P**	**1989-P**	--	**1991-P**	--	**1971-74 1988-P**	**1988-P**	1971-74
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**	916	**1979-P**	**1979-P**	--	1979-83, 1992-98	**1985-P**	**1963, 1969-71, 1985-P**	**1985-P**	1969-71
12324250	Cottonwood Creek at Deer Lodge	45.4	--	1964, 1975-91	--	--	--	--	--	--
12324300	Clark Fork near Garrison	1,139	1961-62	--	--	--	--	--	--	--
12324590	**Little Blackfoot River near Garrison**	407	**1973-P**	**1973-P**	--	**2000**	--	**1963, 1985-P**	**1985-P**	--
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**	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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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								
12331500	**Flint Creek near Drummond**	490	**1990-P**	**1991-P**	--	--	--	**1972-73, 1985-P**	**1985-P**	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-P**	--	--	--	--	--	--
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**	--	--	--	--	--	--
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-P**	--	**1985-P**	**1985-P**	--
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	1971-73, 1995-97	1973
12334680	Landers Fork near Lincoln	130	--	--	--	--	--	1995-97	1995-97	--
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	1995-97	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**	--	--	**2000**	--	1995-97	1995-97	--
12335500	**Nevada Creek above Reservoir, near Finn**	116	**1939-P**	**1940-P**	--	--	--	1980	**1980, 1994-P**	--
12336000	Nevada Creek near Finn	144	1934-39	--	--	--	--	--	--	--
12336500	Nevada Creek Reservoir near Finn	142	1939-95	--	--	-	--	--	--	--
12337000	Nevada Creek near Helmville	165	1946-49	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
12337500	Douglas Creek near Helmville	84.8	1946-47	--	--	--	--	--	--	--
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**	--	--	--	1995-97	1995-97	--
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	--	--	--	--	--	--
12338700	Blackfoot River at Scotty Brown Bridge, near Ovando	1,428	--	--	--	--	--	1995-97	1995-97	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	--	--	--	--	--	--	--
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**	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**	--	--	--	--	--	--
12342950	Trapper Creek near Conner	28.5	--	1974-91	--	--	--	--	--	--
12343000	West Fork Bitterroot River near Darby	552	1910-17	1911-17	--	--	--	--	--	--
12343400	East Fork Bitterroot River near Conner	381	1956-72	1956-72	--	--	--	--	--	--
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**	--	--	--	1956, 1997-98	1997-98	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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								
12344300	Burke Gulch near Darby	6.50	--	1958-82	--	--	--	--	--	--
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	1948-54, 1958-79	--	--	--	1956,1980	1980	--
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	1958-66, 1974,1982	--	--	--	1956, 1997-98	1997-98	--
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--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**	--	**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	1911-17, 1934,1948, 1954, 1959-75	--	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**	--	--	--	**1999-P**	--	--
12354700	Clark Fork near Paradise	10,709	--	--	--	1985-91	--	--	--	--
12355000	**Flathead River at Flathead, British Columbia**	427	**1929-95, 1999-P**	**1929-94, 2000**	--	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-P**	**1976-79, 1999-P**	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--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 Conductance	Water Temperature	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-P**	**1999-P**	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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
12361960	Emery Creek near Hungry Horse	26.4	1965-67	1965-66	--	--	--	--	--	--
12362000	**Hungry Horse Reservoir near Hungry Horse**	1,654	**1951-P**	--	--	--	--	--	--	--
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	1965,1967, 1979-94	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-P**	**1999-P**	--
12366100	**Trumbull Creek near Columbia Falls**	9.0	--	**1997-P**	--	--	--	--	--	--
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**	--	**1999-P**	**1999-P**	--
12370500	Dayton Creek near Proctor	18.5	--	1959-91	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
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**	--	--	--	--	--	--	--
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	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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							
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	--	--	--	--	--	--	--
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**	--	**1971-73, 1984-92 1997-P**	**1984-92, 1999-P**	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

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations--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 Conductance	Water Temperature	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued								
12389300	Thompson River ab 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
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**	--	--	--	--	--	--
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	--	--	--	--	--	--

05014500 SWIFTCURRENT CREEK AT MANY GLACIER, MT

(Hydrologic bench-mark station)

LOCATION.--Lat 48°47'57", long 113°39'21", 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. Datum of gage is 4,876.78 ft above sea level. Prior to May 23, 1916, nonrecording gage on left bank of lake opposite present gage and at present datum, and May 23, 1916, to June 15, 1918, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	176	73	e50	22	23	37	218	252	350	154	62
2	39	157	67	e44	26	21	42	331	221	340	153	74
3	36	142	66	e38	28	20	41	402	230	323	150	87
4	32	157	58	e40	29	22	47	487	287	275	142	84
5	31	134	59	e44	28	25	73	408	369	217	134	80
6	31	142	57	e47	26	26	76	316	428	186	129	74
7	38	132	57	e50	25	26	70	255	505	187	132	74
8	75	141	57	e53	24	26	63	193	500	191	128	70
9	355	143	56	e55	29	25	63	184	606	193	121	90
10	297	129	55	e50	28	23	71	194	578	196	117	97
11	210	130	52	e44	26	22	78	173	474	191	119	109
12	187	139	52	e46	26	22	90	157	389	195	113	107
13	204	1070	54	e48	27	23	118	144	539	207	105	108
14	297	1340	54	e44	27	25	123	143	602	227	95	117
15	258	701	55	e42	28	24	110	151	891	235	89	113
16	204	431	49	e45	27	24	96	177	778	221	83	108
17	159	299	53	e47	25	22	98	237	605	192	79	105
18	134	228	56	e49	23	e23	106	355	507	178	76	104
19	119	186	e55	47	22	e25	122	446	478	177	74	104
20	108	158	e48	45	20	e24	156	438	443	182	65	101
21	91	137	e50	42	20	e23	212	485	407	185	63	94
22	82	123	e53	41	24	e28	290	739	449	183	62	82
23	79	108	e58	36	26	32	310	748	456	183	59	72
24	76	116	e62	35	27	37	267	576	400	178	59	65
25	78	92	e65	33	25	35	211	472	347	178	60	61
26	85	91	e65	31	23	34	173	436	304	167	61	60
27	107	84	e65	29	24	33	154	391	286	156	60	57
28	149	77	e63	27	25	36	168	397	282	151	61	55
29	210	73	e61	26	24	40	199	366	304	150	60	58
30	189	73	e58	25	---	39	202	329	345	154	68	77
31	182	---	e54	24	---	37	---	299	---	157	67	---
TOTAL	4184	7109	1787	1277	734	845	3866	10647	13262	6305	2938	2549
MEAN	135	237	57.6	41.2	25.3	27.3	129	343	442	203	94.8	85.0
MAX	355	1340	73	55	29	40	310	748	891	350	154	117
MIN	31	73	48	24	20	20	37	143	221	150	59	55
AC-FT	8300	14100	3540	2530	1460	1680	7670	21120	26310	12510	5830	5060
CFSM	4.37	7.67	1.87	1.33	.82	.88	4.17	11.1	14.3	6.58	3.07	2.75
IN.	5.04	8.56	2.15	1.54	.88	1.02	4.65	12.82	15.97	7.59	3.54	3.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2000, BY WATER YEAR (WY)*

MEAN	85.2	72.9	37.6	32.8	26.9	30.3	105	378	489	262	118	87.1
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	33.8
(WY)	1988	1988	1979	1979	1985	1975	1975	1955	1926	1944	1988	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1912 - 2000**	
ANNUAL TOTAL	61299		55503			
ANNUAL MEAN	168		152		142	
HIGHEST ANNUAL MEAN					184	1991
LOWEST ANNUAL MEAN					95.5	1988
HIGHEST DAILY MEAN	1340	Nov 14	1340	Nov 14	4130	Jun 8 1964
LOWEST DAILY MEAN	11	Feb 2	20	Feb 20	a.00	Nov 14 1976
ANNUAL SEVEN-DAY MINIMUM	13	Jan 29	23	Feb 27	4.6	Nov 13 1976
INSTANTANEOUS PEAK FLOW			1750	Nov 13	b6700	Jun 8 1964
INSTANTANEOUS PEAK STAGE			6.19	Nov 13	c10.00	Jun 8 1964
ANNUAL RUNOFF (AC-FT)	121600		110100		102900	
ANNUAL RUNOFF (CFSM)	5.44		4.91		4.60	
ANNUAL RUNOFF (INCHES)	73.80		66.82		62.46	
10 PERCENT EXCEEDS	456		375		449	
50 PERCENT EXCEEDS	91		88		88	
90 PERCENT EXCEEDS	20		26		21	

*--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.
e--Estimated.

SASKATCHEWAN RIVER BASIN

05015500 LAKE SHERBURNE AT SHERBURNE, MT

(International gaging station)

LOCATION.--Lat 48°49'42", long 113°31'16", in $SE^1/_4SE^1/_4SE^1/_4$ 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. Datum of gage is 4,709.45 ft above sea level. 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 datum 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 1919. 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, 42,980 acre-ft, July 4, gage height, 73.70 ft; minimum, 1,850 acre-ft, Sept. 22, gage height, 32.46 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
Sept. 30	62.17	28,750	--
Oct. 31	67.05	34,440	+5,690
Nov. 30	58.94	25,140	-9,300
Dec. 31	52.99	18,910	-6,230
CAL YR 1999			+9,610
Jan. 31	55.85	21,840	+2,930
Feb. 29	57.89	24,010	+2,170
Mar. 31	50.87	16,830	-7,180
Apr. 30	40.71	7,830	-9,000
May 31	50.38	16,350	+8,520
June 30	72.65	41,540	+25,190
July 31	67.06	34,450	-7,090
Aug. 31	43.15	9,840	-24,610
Sept. 30	34.00	2,870	-6,970
WTR YR 2000			-25,880

SASKATCHEWAN RIVER BASIN

05016000 SWIFTCURRENT CREEK AT SHERBURNE, MT

LOCATION.--Lat 48°49'49", long 113°30'59", in NW$^1/_4$SW$^1/_4$SW$^1/_4$ 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 current year (seasonal records only). 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. Datum of gage is 4,730.26 ft above sea level. Prior to Aug. 10, 1920, nonrecording gages at two sites within 1,000 ft of present site at different datums. 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 datum 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).
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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			1.2	486	54	241	215	510	525	23		
2			e1.2	478	52	243	214	507	509	24		
3			1.2	470	201	264	214	504	494	24		
4			1.3	461	463	313	240	500	492	25		
5			1.3	454	508	359	267	496	486	25		
6			1.2	446	509	368	290	492	463	25		
7			1.2	439	505	371	316	488	436	25		
8			1.2	431	462	317	356	508	398	26		
9			e1.2	423	386	226	431	558	337	26		
10			e1.2	416	309	193	520	604	263	26		
11			e1.2	409	272	137	556	570	221	26		
12			1.3	402	281	68	553	546	188	43		
13			1.4	397	297	39	466	515	155	83		
14			1.4	392	295	118	410	490	147	92		
15			1.3	386	335	185	409	478	140	91		
16			e20	379	454	164	410	471	136	90		
17			.42	373	547	103	410	452	134	89		
18			.38	368	601	58	465	492	127	89		
19			.36	361	633	38	495	499	117	88		
20			35	358	631	38	423	492	119	88		
21			213	357	574	38	310	484	114	88		
22			340	360	458	39	183	500	87	88		
23			415	380	333	39	74	506	68	86		
24			428	390	160	39	62	498	69	75		
25			424	389	55	39	259	489	39	55		
26			418	388	34	39	408	495	22	33		
27			480	324	35	40	530	496	22	16		
28			514	130	62	40	526	551	22	1.7		
29			508	51	157	40	521	575	22	1.6		
30			502	53	217	130	516	559	23	1.5		
31			494	---	240	---	514	542	---	1.3		
TOTAL			4810.96	11151	10120	4326	11563	15867	6375	1475.1		
MEAN			155	372	326	144	373	512	212	47.6		
MAX			514	486	633	371	556	604	525	92		
MIN			.36	51	34	38	62	452	22	1.3		
AC-FT			9540	22120	20070	8580	22940	31470	12640	2930		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1924 - 2000*

MEAN	8.07	82.3	217	358	378	432	530	366	99.3	a224	b86.1
MAX	19.3	407	644	1033	973	970	756	792	477	495	172
(WY)	1991	1981	1963	1972	1975	1982	1937	1975	1951	2000	2000
MIN	.12	.000	.54	11.0	17.9	134	76.1	.16	.011	85.7	.048
(WY)	1966	1954	1967	1987	1963	1956	1988	1992	1975	1966	1966

SUMMARY STATISTICS	FOR 2000 SEASON		WATER YEARS 1924 - 2000*	
HIGHEST DAILY MEAN	633	May 19	2340	Jun 12 1964
LOWEST DAILY MEAN	.36	Mar 19	.00	Oct 3 1935
ANNUAL SEVEN-DAY MINIMUM			.00	Oct 15 1940
INSTANTANEOUS PEAK FLOW	1220	Aug 16	2510	Jun 7 1995
INSTANTANEOUS PEAK STAGE	6.95	Aug 16	8.63	Jun 7 1995
10 PERCENT EXCEEDS			673	
50 PERCENT EXCEEDS			290	
90 PERCENT EXCEEDS			.40	

*--During period of seasonal operation (May 1924 to September 1981, March 1984 to current year).
a--Based on just 3 years of record (water years 1966, 1998, and 2000).
b--Based on just 2 years of record (water years 1966 and 2000).
e--Estimated.

SASKATCHEWAN RIVER BASIN

05016000 SWIFTCURRENT CREEK AT SHERBURNE, MT--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999								
12...	1650	52	107	10.5	7.0	33	4.7	98
DEC								
16...	1400	271	118	6.0	.0	17	12	94
MAR 2000								
22...	1540	400	137	12.0	1.5	13	14	59
APR								
19...	1515	360	162	15.0	5.0	13	13	99
MAY								
17...	1145	579	137	18.0	10.0	12	19	76
JUL								
21...	1115	282	123	24.0	17.0	4	3.0	97
SEP								
05...	1730	484	128	13.5	13.0	95	124	93

SASKATCHEWAN RIVER BASIN

05017500 ST. MARY RIVER NEAR BABB, MT

LOCATION.--Lat 48°50'00", long 113°25'08", in $NW^1/_4NW^1/_4SE^1/_4$ 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. Datum of gage is 4,468.13 ft above sea level. Prior to Oct. 1, 1915, water-stage recorder or nonrecording gages at several sites about 3.8 mi downstream at different datums. Oct. 1, 1915, to Sept. 30, 1925, water-stage recorder or nonrecording gages at several sites within 1.5 mi downstream at different datums.

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. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	188	530	741	127	94	76	588	804	1640	1510	1070	671
2	185	526	690	134	98	78	608	807	1540	1550	1060	686
3	181	527	644	132	99	74	601	885	1450	1530	1040	682
4	175	523	576	134	97	74	604	1150	1410	1510	1030	662
5	168	511	509	134	95	75	643	1420	1450	1450	1020	666
6	163	513	476	129	93	77	637	1570	1540	1370	993	658
7	158	501	423	132	91	78	625	1580	1650	1310	977	649
8	167	489	383	128	91	77	617	1560	1790	1270	955	613
9	192	500	367	130	91	77	613	1480	1910	1270	947	573
10	261	542	369	126	91	76	616	1380	1960	1310	961	523
11	338	567	406	125	90	75	615	1250	1960	1360	983	487
12	431	635	432	125	88	74	613	1160	1840	1370	954	447
13	505	964	436	122	88	72	631	1090	1720	1370	934	418
14	583	1970	440	132	88	74	662	1040	1730	1320	887	411
15	676	2730	447	138	91	76	673	991	1980	1300	848	391
16	749	2960	453	139	92	76	683	990	2370	1280	806	365
17	775	2820	453	140	92	81	702	1060	2540	1260	776	374
18	743	2590	456	133	90	76	712	1170	2470	1240	752	360
19	707	2350	454	132	86	78	720	1350	2330	1240	737	368
20	677	2140	452	128	82	76	737	1530	2230	1230	716	379
21	627	1950	447	124	79	89	785	1670	2100	1160	699	374
22	573	1810	434	124	81	154	858	1840	2000	1070	682	364
23	529	1680	396	121	79	238	956	2060	1980	968	675	338
24	505	1570	335	118	80	319	1040	2200	1960	865	666	314
25	467	1390	289	114	81	386	1080	2160	1900	845	659	295
26	456	1250	252	112	80	436	1100	2040	1780	894	649	269
27	459	1130	228	107	77	474	1080	1930	1670	996	632	247
28	463	1030	202	104	77	518	998	1820	1570	1050	635	227
29	490	905	160	100	78	558	892	1750	1500	1080	652	209
30	526	819	132	97	---	576	830	1730	1460	1080	676	206
31	529	---	119	95	---	582	---	1700	---	1070	681	---
TOTAL	13646	38422	12601	3836	2539	5850	22519	45167	55430	38128	25752	13226
MEAN	440	1281	406	124	87.6	189	751	1457	1848	1230	831	441
MAX	775	2960	741	140	99	582	1100	2200	2540	1550	1070	686
MIN	158	489	119	95	77	72	588	804	1410	845	632	206
AC-FT	27070	76210	24990	7610	5040	11600	44670	89590	109900	75630	51080	26230

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2000, BY WATER YEAR (WY)*

MEAN	388	266	153	112	106	161	477	1654	2460	1598	1031	728
MAX	1323	1281	722	302	249	457	977	2573	4807	2697	1413	1291
(WY)	1952	2000	1996	1981	1996	1981	1988	1957	1975	1954	1976	1959
MIN	86.2	45.0	33.5	46.0	51.0	52.2	85.0	670	1289	687	320	119
(WY)	1980	1988	1953	1988	1977	1977	1975	1955	1992	1977	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1951 - 2000*	
ANNUAL TOTAL	301437		277116			
ANNUAL MEAN	826		757		764	
HIGHEST ANNUAL MEAN					1073	1951
LOWEST ANNUAL MEAN					444	1977
HIGHEST DAILY MEAN	2960	Nov 16	2960	Nov 16	15600	Jun 9 1964
LOWEST DAILY MEAN	56	Feb 24	72	Mar 13	27	Jan 3 1953
ANNUAL SEVEN-DAY MINIMUM	57	Feb 22	75	Mar 10	28	Dec 30 1952
INSTANTANEOUS PEAK FLOW			2990	Nov 16	a16500	Jun 9 1964
INSTANTANEOUS PEAK STAGE			4.92	Nov 16	b12.96	Jun 9 1964
ANNUAL RUNOFF (AC-FT)	597900		549700		553300	
10 PERCENT EXCEEDS	2040		1720		1890	
50 PERCENT EXCEEDS	641		614		368	
90 PERCENT EXCEEDS	69		90		75	

*--During periods of operation 1951 to current year.
a--From rating curve extended above 6,100 ft^3/s on basis of slope-area measurement of peak flow.
b--From highwater mark in well.

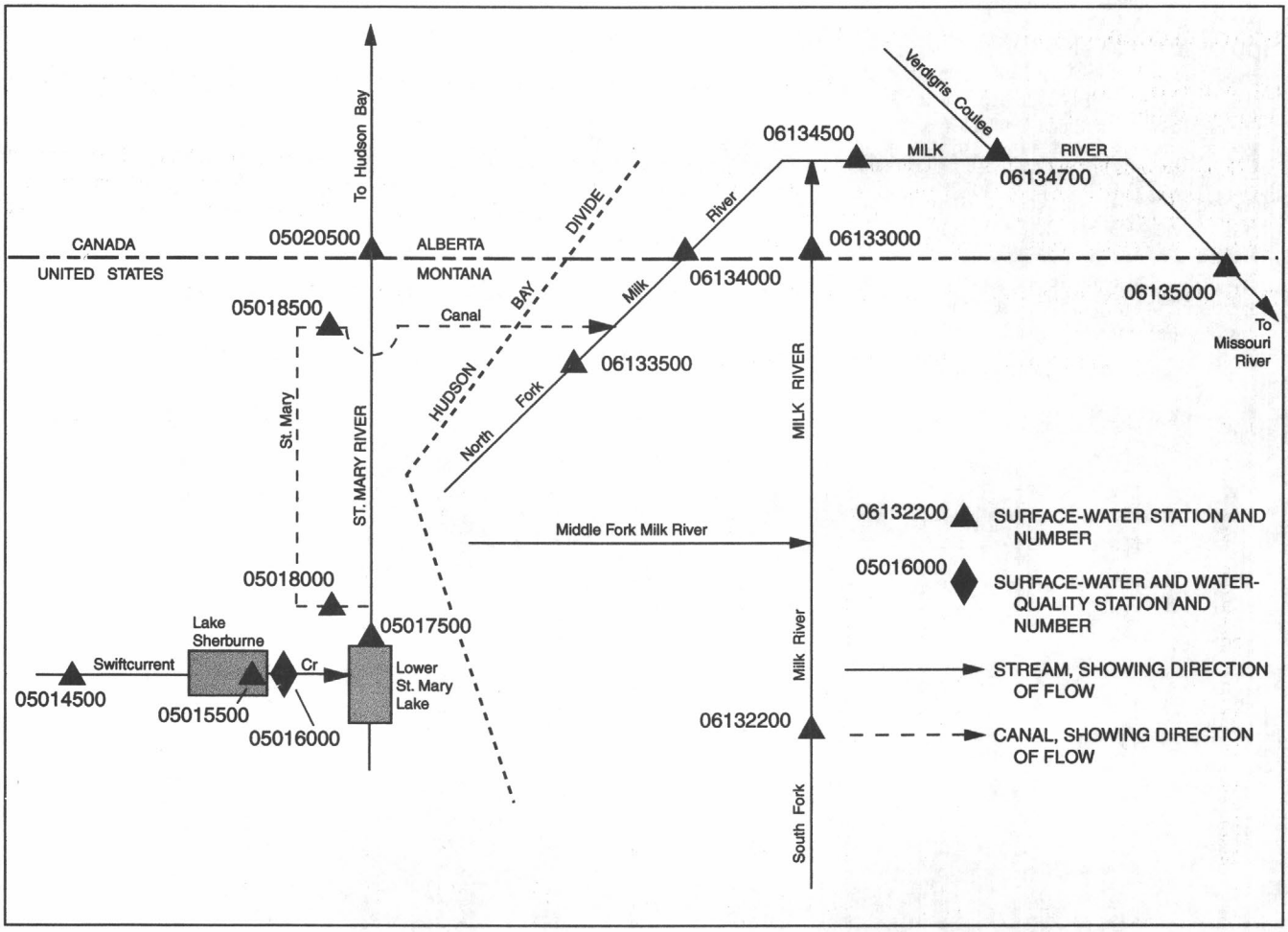


Figure 9. Schematic diagram showing diversion from St. Mary River in Part 5 to Milk River in Part 6.

SASKATCHEWAN RIVER BASIN

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

LOCATION.--Lat 48°51'10", long 113°24'57", in $SE^1/_4NW^1/_4NE^1/_4$ 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 above sea level, from topographic map. Prior to April 17, 1919, staff gage at site 300 ft upstream at different datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. 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. Bureau of Reclamation 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e2.5	493	298	673	641	588	571	7.0		
2			e2.5	493	536	670	642	586	571	7.2		
3			e3.0	490	573	667	639	585	570	7.4		
4			e3.0	492	582	664	624	584	570	7.5		
5			e3.0	494	593	665	621	584	569	7.3		
6			e2.5	490	597	669	625	583	552	7.3		
7			e2.5	485	598	674	632	582	538	7.1		
8			e2.5	461	630	641	637	582	535	6.9		
9			e2.5	463	672	612	637	581	490	7.0		
10			e2.0	433	678	613	638	582	446	7.1		
11			e2.0	400	675	614	642	582	370	7.0		
12			e2.0	398	670	629	644	582	312	6.8		
13			e2.0	393	666	643	644	581	267	6.8		
14			e2.0	392	664	612	642	579	178	6.5		
15			e2.0	390	661	603	641	578	111	6.5		
16			e2.0	390	662	615	641	574	109	6.4		
17			e2.5	388	664	622	640	567	105	6.8		
18			e2.5	386	652	616	639	566	102	8.1		
19			e2.5	384	629	611	640	566	79	8.5		
20			e3.0	373	634	624	620	565	56	8.5		
21			e3.0	351	639	648	528	565	34	8.5		
22			e8.0	352	661	658	349	570	13	7.4		
23			e100	353	681	659	267	572	12	6.7		
24			e200	423	688	658	264	572	11	5.9		
25			259	604	685	657	338	571	11	5.9		
26			308	649	679	652	440	570	10	5.5		
27			368	628	682	648	455	568	9.5	5.4		
28			423	388	662	643	518	568	9.2	5.3		
29			457	146	676	639	558	571	8.5	5.1		
30			472	76	676	638	580	573	7.3	5.1		
31			483	---	676	---	593	571	---	4.8		
TOTAL			3129.5	12658	19739	19237	17619	17848	7226.5	209.3		
MEAN			101	422	637	641	568	576	241	6.75		
MAX			483	649	688	674	644	588	571	8.5		
MIN			2.0	76	298	603	264	565	7.3	4.8		
AC-FT			6210	25110	39150	38160	34950	35400	14330	415		

e--Estimated.

SASKATCHEWAN RIVER BASIN

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

(International gaging station)

LOCATION.--Lat 48°56'50", long 113°22'28", in $NE^1/_4SW^1/_4SW^1/_4$ 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 above sea level, from topographic map. Prior to June 14, 1951, water-stage recorder at several sites 0.8 mi downstream at different datums.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	463	215	629	597	533	509	.00		
2			.00	466	491	625	597	530	509	.00		
3			.00	466	547	622	597	526	505	.00		
4			.00	470	554	622	583	526	505	.00		
5			.00	470	562	622	579	523	505	.00		
6			.00	466	569	622	579	523	498	.00		
7			.00	466	569	629	586	523	480	.00		
8			.00	441	586	611	590	523	480	.00		
9			.00	438	632	576	590	523	449	.00		
10			.00	420	643	576	590	523	396	.00		
11			.00	381	639	576	593	526	343	.00		
12			.00	378	636	583	593	523	263	.00		
13			.00	374	632	604	593	523	241	.00		
14			.00	374	625	586	590	519	168	.00		
15			.00	371	622	565	590	519	108	.00		
16			.00	374	622	576	586	516	103	.00		
17			.00	371	625	586	586	509	102	.00		
18			.00	367	622	579	586	509	99	.00		
19			.00	367	593	572	586	505	89	.00		
20			.00	364	597	583	576	505	60	.00		
21			.00	329	607	607	501	505	46	.00		
22			.00	330	618	614	351	512	3.9	.00		
23			20	331	636	614	233	512	.78	.00		
24			235	367	643	614	226	512	.00	.00		
25			248	551	643	614	267	509	.00	.00		
26			271	607	636	611	388	509	.00	.00		
27			332	607	639	604	406	509	.00	.00		
28			385	434	622	600	452	509	.00	.00		
29			427	182	629	597	505	509	.00	.00		
30			445	96	632	597	519	509	.00	.00		
31			452	---	632	---	537	509	---	.00		
TOTAL			2815.00	12121	18518	18016	16152	16011	6462.68	0.00		
MEAN			90.8	404	597	601	521	516	215	.000		
MAX			452	607	643	629	597	533	509	.00		
MIN			.00	96	215	565	226	505	.00	.00		
AC-FT			5580	24040	36730	35730	32040	31760	12820	.00		

SASKATCHEWAN RIVER BASIN

05020500 ST. MARY RIVER AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION (REVISED).--Lat 49°00'43", long 113°17'57", in NE$^1/_4$ 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. Datum of gage is 4,087.40 ft based upon levels from datum established at previous site 1.1 mi upstream by Prairie Fram Rehabilitation Administration. Prior to Jan. 1, 1913, nonrecording gages at two sites within 0.3 mi of previous site at different datums. Jan. 1, 1913, to Oct. 25, 1955, water-stage recorder at several sites about 7 mi downstream from present site at various datums. Oct. 26, 1955, to Mar. 23, 1965, water-stage recorder at site 200 ft upstream from previous site at datum 2 ft higher. Mar. 24, 1965, to Sept. 8, 1975, water-stage recorder at site 100 ft upstream of previous site at same datum.

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	262	629	843	e155	e125	e120	142	725	1130	1050	573	265
2	260	617	796	e160	e130	e120	170	457	1020	1080	556	282
3	258	615	743	e165	e135	e115	172	488	922	1070	545	279
4	253	672	657	e165	e130	e115	184	750	907	1060	545	259
5	246	604	594	e165	e125	e115	248	1000	958	995	536	262
6	239	599	555	e160	e125	e120	247	1140	1070	907	519	277
7	232	605	503	e160	e125	e120	225	1150	1190	829	507	284
8	238	585	452	e160	e135	e120	247	1080	1350	770	487	263
9	266	602	442	e160	e140	e115	249	960	1530	766	485	249
10	318	641	425	e155	e140	e110	267	844	1590	789	498	248
11	397	662	439	e155	e135	e115	315	712	1560	830	526	255
12	502	783	501	e150	e130	e120	324	626	1420	840	503	305
13	580	1220	505	e150	e125	119	350	560	1280	844	478	271
14	660	2390	497	e155	e125	116	373	506	1300	792	443	324
15	770	2970	520	e165	e125	114	396	466	1580	773	416	361
16	860	3110	529	e170	e130	119	421	456	1980	752	382	356
17	883	2980	526	e170	e130	114	463	522	2160	737	362	357
18	864	2760	523	e165	e130	118	484	663	2110	717	337	355
19	837	2520	492	e160	e125	117	503	900	1990	715	329	372
20	794	2310	504	e155	e120	114	533	1080	1900	711	311	404
21	734	2100	517	e155	e120	118	612	1210	1730	743	293	431
22	672	1960	504	e150	e125	158	705	1380	1610	824	270	460
23	628	1810	467	e150	e135	e226	813	1590	1580	824	254	434
24	604	1690	403	e145	e135	100	868	1720	1540	710	247	406
25	557	1510	360	e145	e130	135	683	1680	1480	636	242	385
26	541	1370	324	e140	e125	174	642	1550	1350	556	236	345
27	547	1250	301	e140	e125	156	610	1430	1240	646	222	311
28	554	1150	267	e135	e120	149	745	1340	1130	645	220	277
29	577	1030	227	e135	e120	143	913	1260	1050	608	242	261
30	600	957	192	e130	---	146	913	1220	1000	591	258	263
31	632	---	171	e130	---	148	---	1200	---	567	273	---
TOTAL	16365	42701	14779	4755	3720	3989	13817	30665	42657	24377	12095	9601
MEAN	528	1423	477	153	128	129	461	989	1422	786	390	320
MAX	883	3110	843	170	140	226	913	1720	2160	1080	573	460
MIN	232	585	171	130	120	100	142	456	907	556	220	248
AC-FT	32460	84700	29310	9430	7380	7910	27410	60820	84610	48350	23990	19040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 2000, BY WATER YEAR (WY)**

MEAN	428	324	199	156	151	184	453	1655	2414	1186	534	452
MAX	1588	1423	844	729	411	512	1330	3565	5941	2675	1065	1511
(WY)	1952	2000	1996	1918	1934	1972	1934	1928	1975	1975	1995	1927
MIN	115	80.3	70.7	55.5	41.6	63.8	136	678	694	496	246	153
(WY)	1940	1988	1988	1944	1936	1980	1975	1941	1941	1988	1988	1988

SASKATCHEWAN RIVER BASIN

05020500 ST. MARY RIVER AT INTERNATIONAL BOUNDARY--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1902 - 2000	
ANNUAL TOTAL	254414		219521			
ANNUAL MEAN	697		600		725	
HIGHEST ANNUAL MEAN					1353	1908
LOWEST ANNUAL MEAN					316	1941
HIGHEST DAILY MEAN	3110	Nov 16	3110	Nov 16	28000	Jun 5 1908
LOWEST DAILY MEAN	89	Mar 18	100	Mar 24	16	Nov 29 1936
ANNUAL SEVEN-DAY MINIMUM	92	Mar 5	116	Mar 9	27	Nov 26 1936
INSTANTANEOUS PEAK FLOW			3160	Nov 16	a40000	Jun 5 1908
INSTANTANEOUS PEAK STAGE			6.52	Nov 16	c13.46	Jun 21 1975
ANNUAL RUNOFF (AC-FT)	504600		435400		525600	
10 PERCENT EXCEEDS	1790		1340		1840	
50 PERCENT EXCEEDS	517		472		364	
90 PERCENT EXCEEDS	105		125		110	

SUMMARY STATISTICS	WATER YEARS 1902 - 1916*		WATER YEARS 1917 - 2000**	
ANNUAL MEAN	1002		679	
HIGHEST ANNUAL MEAN	1353		1285	1927
LOWEST ANNUAL MEAN	646		316	1941
HIGHEST DAILY MEAN	28000	Jun 5 1908	17000	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
INSTANTANEOUS PEAK FLOW	a40000	Jun 5 1908	23300	Jun 21 1975
INSTANTANEOUS PEAK STAGE	b12.75	Jun 5 1908	c13.46	Jun 21 1975
ANNUAL RUNOFF (AC-FT)	726000		492200	
10 PERCENT EXCEEDS	2470		1700	
50 PERCENT EXCEEDS	538		341	
90 PERCENT EXCEEDS	150		108	

*--Before St. Mary Canal diversions began.
**--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.
c--From floodmarks.
e--Estimated.

RED ROCK RIVER BASIN

06006000 RED ROCK CREEK ABOVE LAKES, NEAR LAKEVIEW, MT

LOCATION.--Lat 44°36'56", long 111°37'42", in $NE^1/_4SE^1/_4NW^1/_4$ 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 current season (seasonal records only).
GAGE.--Water-stage recorder. Elevation of gage is 6,670 ft above sea level, from topographic map.
REMARKS.--Seasonal records good. Diversion for use by Wildlife Refuge about 1.5 mi upstream of station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				24	35	73	40	27	29	24		
2				23	38	71	39	27	30	23		
3				24	43	75	38	28	27	23		
4				30	53	70	38	28	26	22		
5				39	54	64	37	27	25	21		
6				37	49	68	37	26	26	21		
7				35	47	71	37	26	26	21		
8				38	42	73	34	26	25	21		
9				38	43	69	34	25	24	21		
10				41	40	67	33	25	24	22		
11				46	37	60	34	25	24	25		
12				46	35	64	33	25	23	25		
13				47	33	74	31	27	23	23		
14				45	32	63	31	26	23	25		
15				37	33	60	31	26	22	24		
16				35	35	58	30	25	22	24		
17				35	44	55	31	25	23	23		
18				33	40	52	34	25	23	22		
19				33	43	61	36	25	23	22		
20				33	49	55	33	25	23	22		
21				33	57	50	31	26	23	25		
22				35	68	48	30	26	22	24		
23				39	72	48	30	23	23	22		
24				37	74	47	29	25	23	22		
25				33	81	45	29	25	23	22		
26				32	89	46	29	26	22	22		
27				31	86	46	30	25	22	22		
28				34	90	43	29	24	22	22		
29				40	90	41	28	24	22	24		
30				35	86	40	28	24	22	25		
31				---	82	---	27	25	---	23		
TOTAL				1068	1700	1757	1011	792	715	707		
MEAN				35.6	54.8	58.6	32.6	25.5	23.8	22.8		
MAX				47	90	75	40	28	30	25		
MIN				23	32	40	27	23	22	21		
AC-FT				2120	3370	3490	2010	1570	1420	1400		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1997 - 2000

MEAN	32.6	73.3	135	81.0	47.4	37.6	32.6
MAX	35.6	90.3	192	110	56.7	43.0	37.6
(WY)	2000	1998	1999	1999	1999	1997	1998
MIN	30.2	54.8	58.6	32.6	25.5	23.8	22.8
(WY)	1999	2000	2000	2000	2000	2000	2001

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1997 - 2000	
HIGHEST DAILY MEAN	90	May 28	270	Jun 22 1999
LOWEST DAILY MEAN	21	Oct 5	21	Apr 18 1998
ANNUAL SEVEN-DAY MINIMUM	21	Oct 4	21	Oct 4 2000
INSTANTANEOUS PEAK FLOW	98	May 28	b293	Jun 10 1997
INSTANTANEOUS PEAK STAGE	3.77	May 28	5.34	Jun 22 199
INSTANTANEOUS LOW FLOW	a15	Oct 7	a15	Oct 7 2000

a--Gage height, 2.66 ft.
b--Gage height, 3.93 ft, from crest-stage gage at miscellaneous site downstream.

MISSOURI RIVER BASIN

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

LOCATION.--Lat 44°39'22", long 112°22'14", in NE$^1/_4$SE$^1/_4$SE$^1/_4$ 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 above sea level, estimated from spillway elevation based on Montana Department of Natural Resources and Conservation datum. Prior to Oct. 1, 1978, at datum 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				7.9	124	535	473	320	290	34		
2				7.9	128	533	472	317	289	34		
3				7.9	133	531	436	317	287	34		
4				7.9	137	527	415	316	285	34		
5				7.9	146	529	416	314	267	34		
6				8.1	155	532	417	316	160	34		
7				8.7	167	478	415	319	71	34		
8				8.7	182	478	415	316	71	34		
9				8.7	193	478	400	314	56	34		
10				8.7	182	478	391	318	32	34		
11				8.3	173	478	390	326	34	34		
12				8.1	180	479	388	322	36	35		
13				8.1	184	492	373	319	36	35		
14				8.3	181	500	362	316	36	35		
15				8.6	263	507	361	312	36	34		
16				8.7	367	513	359	349	36	35		
17				8.6	397	550	358	336	36	35		
18				8.7	393	572	358	314	36	35		
19				8.6	389	558	357	311	35	33		
20				8.7	391	557	355	309	35	33		
21				8.6	394	558	354	315	35	33		
22				8.7	396	558	337	319	35	33		
23				8.7	397	543	324	316	34	33		
24				8.7	423	534	323	296	34	33		
25				8.7	472	533	322	282	34	33		
26				23	466	533	321	287	34	33		
27				32	461	532	319	289	34	33		
28				35	458	499	318	289	34	30		
29				90	456	475	315	292	34	30		
30				122	482	475	318	292	34	29		
31				---	535	---	321	292	---	29		
TOTAL				512.5	9405	15545	11483	9650	2506	1033		
MEAN				17.1	303	518	370	311	83.5	33.3		
MAX				122	535	572	473	349	290	35		
MIN				7.9	124	475	315	282	32	29		
AC-FT				1020	18650	30830	22780	19140	4970	2050		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1969, AND SEASONS 1974 - 2000*

MEAN	21.5	19.9	18.8	95.0	343	459	295	199	138	81.7	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	.000	.000	.000	.000	26.2	4.62	.63	.000	.000	.000	.000	.000
(WY)	1932	1932	1932	1980	1934	1934	1934	1934	1937	1932	1932	1932

SUMMARY STATISTICS	FOR 2000 SEASON		WATER YEARS 1911 - 1969*		SEASONS 1974 - 2000*	
ANNUAL MEAN			143			
HIGHEST ANNUAL MEAN			271	1913		
LOWEST ANNUAL MEAN			59.5	1935		
HIGHEST DAILY MEAN	572	Jun 18	a2500	May 15 1933	946	May 28 1975
LOWEST DAILY MEAN	7.9	Apr 1	.00	Oct 1 1931	.00	Oct 9 1978
ANNUAL SEVEN-DAY MINIMUM			.00	Oct 1 1931		
INSTANTANEOUS PEAK FLOW	580	Jun 17	a2500	May 15 1933	b946	May 28 1975
INSTANTANEOUS PEAK STAGE	3.35	Jun 17	6.40	May 15 1933	4.00	Jun 26 1981
ANNUAL RUNOFF (AC-FT)			103300			
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 October 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 in use.

MISSOURI RIVER MAIN STEM

06015300 CLARK CANYON RESERVOIR NEAR GRANT, MT

LOCATION.--Lat 45°00'06", long 112°51'27", in $SE^1/_4SW^1/_4$ 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. Datum of gage is referenced to sea level (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). Usable capacity, 255,600 acre-ft between elevation 5,455.00 ft, invert of outlet works, and 5,560.40 ft, top of flood control. Dead storage, 1,509 acre-ft, below elevation 5,455.00 ft. Normal operating level, 177,500 acre-ft at elevation 5,546.00 ft. Minimum operating level, 1,450 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, 38,200 acre-ft, Aug. 23, 1989, elevation, 5,508.67 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents at 2400, 172,100 acre-ft, Apr. 21, elevation, 5,545.23 ft; minimum, 58,970 acre-ft, Sept. 20, elevation, 5,517.34 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
Sept. 30	5,535.89	126,900	---
Oct. 31	5,538.33	138,200	+11,300
Nov. 30	5,540.70	149,500	+11,300
Dec. 31	5,541.61	153,900	+4,400
CAL YR 1999			+6,300
Jan. 31	5,542.13	156,500	+2,600
Feb. 29	5,542.97	160,600	+4,100
Mar. 31	5,544.36	167,600	+7,000
Apr. 30	5,544.77	169,700	+2,100
May 31	5539.77	145,000	-24,700
June 30	5,531.92	109,700	-35,300
July 31	5,522.78	75,380	-34,320
Aug. 31	5,517.88	60,480	-14,900
Sept. 30	5,517.80	60,250	-230
WTR YR 2000			-66,650

MISSOURI RIVER BASIN

06016000 BEAVERHEAD RIVER AT BARRETTS, MT

LOCATION.--Lat 45°06'59", long 112°44'59", in SE$^1/_4$SW$^1/_4$SE$^1/_4$ 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. Datum of gage is 5,268.17 ft above sea level. Prior to Oct. 19, 1934, nonrecording gages at same site and datum.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			273	286	568	702	717	751	331	232		
2			273	296	646	680	706	737	330	215		
3			271	290	674	664	686	710	329	167		
4			268	295	735	678	626	665	328	141		
5			268	336	750	732	599	616	326	122		
6			272	319	713	808	587	583	327	122		
7			272	293	664	860	586	541	327	121		
8			273	282	645	906	638	518	326	121		
9			269	286	625	893	682	529	327	121		
10			266	292	608	912	704	529	329	123		
11			267	295	569	931	737	512	332	126		
12			263	294	523	942	763	483	331	146		
13			266	296	502	954	794	469	331	151		
14			267	305	495	941	825	456	330	153		
15			267	302	482	909	859	436	326	158		
16			264	293	471	881	872	429	326	151		
17			266	306	483	863	892	428	327	147		
18			265	319	469	846	898	428	318	143		
19			267	323	479	819	926	415	292	139		
20			260	321	488	773	929	389	266	142		
21			263	326	527	751	912	363	258	143		
22			267	373	562	736	925	366	248	143		
23			273	379	626	720	935	358	225	141		
24			267	400	705	678	931	341	215	142		
25			270	414	775	652	922	339	214	141		
26			278	401	784	650	908	337	213	141		
27			286	438	778	674	902	336	214	145		
28			318	452	766	701	885	335	213	144		
29			303	499	753	700	859	336	214	146		
30			291	529	740	717	823	341	215	156		
31			280	---	715	---	782	347	---	157		
TOTAL			8453	10240	19320	23673	24810	14423	8688	4540		
MEAN			273	341	623	789	800	465	290	146		
MAX			318	529	784	954	935	751	332	232		
MIN			260	282	469	650	586	335	213	121		
AC-FT			16770	20310	38320	46960	49210	28610	17230	9010		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 2000, BY WATER YEAR (WY)*

MEAN	293	290	331	451	618	809	567	463	353	359	409	346
MAX	547	513	934	1347	1913	2608	2147	1929	1645	1093	889	685
(WY)	1984	1984	1910	1913	1917	1908	1984	1984	1984	1985	1913	1984
MIN	120	132	119	123	131	146	95.5	96.1	88.2	113	138	133
(WY)	1932	1975	1991	1934	1934	1934	1934	1934	1934	1993	1975	1975

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1987 - 2000		WATER YEARS 1908 - 2000*	
ANNUAL MEAN					441	
HIGHEST ANNUAL MEAN					1101	1984
LOWEST ANNUAL MEAN					168	1934
HIGHEST DAILY MEAN	954	Jun 13	1640	Jul 26 1995	3640	Jun 19 1908
LOWEST DAILY MEAN	121	Oct 7	80	Sep 17 1989	80	Jan 22 1962
ANNUAL SEVEN-DAY MINIMUM					81	Sep 11 1934
INSTANTANEOUS PEAK FLOW	965	Jun 13	1650	Jul 25 1995	3720	Jun 20 1908
INSTANTANEOUS PEAK STAGE	2.35	Jun 13	3.25	Jul 25 1995	6.10	Jun 20 1908
INSTANTANEOUS LOW FLOW					a69	Jan 30 1939
ANNUAL RUNOFF (AC-FT)					319200	
10 PERCENT EXCEEDS					859	
50 PERCENT EXCEEDS					350	
90 PERCENT EXCEEDS					178	

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	1101	1984	738	1913	1101	1984
LOWEST ANNUAL MEAN	168	1934	168	1934	293	1967
HIGHEST DAILY MEAN	3640	Jun 19 1908	3640	Jun 23 1908	2930	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
INSTANTANEOUS PEAK FLOW	3720	Jun 2 1908	3720	Jun 20 1908	3000	Jun 22 1984
INSTANTANEOUS PEAK STAGE	6.10	Jun 2 1908	6.10	Jun 20 1908	5.04	Jun 22 1984
INSTANTANEOUS LOW FLOW	a69	Jan 30 1939	a69	Jan 30 1939		
ANNUAL RUNOFF (AC-FT)	319200		290500		3933700	
10 PERCENT EXCEEDS	830		676		1000	
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, 0.76 ft.

MISSOURI RIVER BASIN

06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT

LOCATION.--Lat 45°23'01", long 112°27'07", in $SW^1/_4NW^1/_4SE^1/_4$ 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.

WATER-DISCHARGE RECORDS

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. Datum of gage is 4,809.15 ft above sea level. Prior to Feb. 17, 1949, nonrecording gage at bridge 0.5 mi upstream at different datum. Feb. 17, 1949, to June 28, 1951, nonrecording gage at present site and datum.

REMARKS.--Water-discharge 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	362	512	547	472	452	432	411	218	191	172	84	75
2	360	503	539	462	452	425	413	215	196	190	80	74
3	371	506	521	449	449	422	416	197	159	186	77	91
4	371	532	477	470	439	419	412	180	127	210	90	104
5	350	540	479	471	436	418	417	201	119	197	111	124
6	355	540	504	454	434	421	446	221	118	182	121	106
7	356	539	501	467	435	422	415	217	120	167	115	99
8	368	537	478	458	426	430	386	208	126	144	117	100
9	371	527	471	470	425	423	369	214	133	133	112	93
10	372	527	484	463	426	423	370	199	118	128	115	99
11	378	529	476	480	423	419	361	214	110	108	141	114
12	381	529	492	469	427	414	353	238	113	102	128	129
13	386	522	496	454	427	413	346	230	126	96	123	122
14	401	523	463	484	430	416	342	223	147	86	140	118
15	419	522	485	474	435	410	344	216	162	94	134	117
16	484	523	489	475	429	406	338	190	154	90	131	115
17	507	531	492	476	431	409	330	202	180	93	137	115
18	489	530	500	474	426	405	302	198	195	86	137	114
19	465	525	495	478	420	409	283	191	199	94	138	122
20	458	522	493	478	420	401	276	176	172	110	131	128
21	450	515	496	477	429	389	279	152	155	103	120	143
22	451	502	495	477	438	404	288	167	158	95	120	160
23	451	481	483	475	440	405	281	161	161	110	127	169
24	448	490	477	477	442	404	283	144	176	120	117	178
25	442	510	471	471	446	401	263	173	167	111	120	171
26	476	544	465	467	429	402	251	176	164	97	118	163
27	507	544	462	465	434	411	236	179	156	84	95	166
28	511	536	464	464	437	429	233	195	146	79	94	164
29	487	532	464	438	438	454	222	203	143	85	78	161
30	506	545	463	435	---	429	228	206	145	87	79	178
31	509	---	467	440	---	413	---	190	---	92	84	---
TOTAL	13242	15718	15089	14464	12575	12878	9894	6094	4536	3731	3514	3812
MEAN	427	524	487	467	434	415	330	197	151	120	113	127
MAX	511	545	547	484	452	454	446	238	199	210	141	178
MIN	350	481	462	435	420	389	222	144	110	79	77	74
AC-FT	26270	31180	29930	28690	24940	25540	19620	12090	9000	7400	6970	7560

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2000, BY WATER YEAR (WY)

MEAN	455	563	496	417	432	484	489	322	397	289	254	393
MAX	1328	1065	852	725	707	799	1251	1117	1615	1586	1581	1691
(WY)	1985	1985	1984	1976	1984	1972	1969	1984	1984	1984	1984	1984
MIN	32.4	247	210	173	200	251	95.5	40.8	24.2	28.0	25.8	28.1
(WY)	1938	1938	1993	1937	1937	1991	1961	1937	1940	1937	1937	1937

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1935 - 2000	
ANNUAL TOTAL	172911		115547			
ANNUAL MEAN	474		316		416	
HIGHEST ANNUAL MEAN					1097	1984
LOWEST ANNUAL MEAN					170	1937
HIGHEST DAILY MEAN	859	Jun 9	547	Dec 1	3130	Jun 12 1944
LOWEST DAILY MEAN	185	Aug 26	74	Sep 2	7.0	May 25 1940
ANNUAL SEVEN-DAY MINIMUM	213	Sep 16	82	Aug 28	8.7	May 13 1954
INSTANTANEOUS PEAK FLOW			620	Dec 6	b3130	Jun 12 1944
INSTANTANEOUS PEAK STAGE			5.41	Dec 6	7.88	Jun 25 1984
INSTANTANEOUS LOW FLOW			a70	Sep 1	c28	Jun 24 1990
ANNUAL RUNOFF (AC-FT)	343000		229200		301100	
10 PERCENT EXCEEDS	593		502		729	
50 PERCENT EXCEEDS	504		371		400	
90 PERCENT EXCEEDS	268		110		100	

06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT--Continued

SUMMARY STATISTICS	FOR WATER YEARS 1935-1964*		WATER YEARS 1965 - 2000**	
ANNUAL MEAN	391		436	
HIGHEST ANNUAL MEAN	642		1097	1984
LOWEST ANNUAL MEAN	170		182	1991
HIGHEST DAILY MEAN	3130	Jun 12 1944	2180	Jun 25 1984
LOWEST DAILY MEAN	7.0	May 25 1940	28	Jun 24 1990
ANNUAL SEVEN-DAY MINIMUM	8.7	May 13 1974	31	Jun 23 1990
INSTANTANEOUS PEAK FLOW	b3130	Jun 12 1944	2000	Jun 25 1984
INSTANTANEOUS PEAK STAGE	6.76	Jun 12 1944	7.88	Jun 25 1984
ANNUAL RUNOFF (AC-FT)	283100		315700	
10 PERCENT EXCEEDS	648		798	
50 PERCENT EXCEEDS	410		387	
90 PERCENT EXCEEDS	60		134	

*--Prior to construction of Clark Canyon Dam.
**--After construction of Clark Canyon Dam.
a--Gage height, 3.33 ft.
b--Observed gage height, 6.76 ft, site and datum then in use.
c--Gage height, 3.01 ft.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-51, 1962-81, 1986, May to September 1999.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1999 to September 2000.
SUSPENDED-SEDIMENT DISCHARGE: July 1962 to September 1974.

REMARKS.--Prior to October 1968, published as "at Blaine." Temperature recorder installed Aug. 18, 1999. Missing data for June 20-22 and 25-26 due to equipment failure. 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, 37.0°C, June 27, 2000; minimum, 0.0°C on many days in December 1999 through February 2000.
SEDIMENT CONCENTRATION: Maximum daily mean, 670 mg/L, June 8, 1964; minimum daily mean, 5 mg/L, Sep. 22, 23, 1964, May 17, 18, 1973.
SEDIMENT LOAD: Maximum daily, 1,200 tons, June 8, 1964; minimum daily 1.6 tons, July 28, 1968.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.5°C, Aug. 2; minimum, 0.0°C on many days in November through February.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
NOV 1999								
03...	1015	511	8.5	614	17.0	4.5	.47	.481
MAR 2000								
20...	1010	404	8.6	607	6.5	2.5	.50	.474
MAY								
30...	1145	215	8.3	731	21.0	12.0	.75	.317
AUG								
08...	1115	118	8.2	810	24.0	16.5	.53	.081

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
03...	.004	--	<.001	.053	53	73	64
MAR 2000							
20...	.003	.025	.008	.057	49	53	76
MAY							
30...	.006	.043	.014	.098	72	42	83
AUG							
08...	.005	.009	.003	.023	31	9.9	80

MISSOURI RIVER BASIN

06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV LAB AS CACO3 (MG/L) (00905)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999												
03...	1015	290	61	75	24	4.8	.6	23	226	16	.5	20
MAY												
30...	1145	310	63	73	31	7.6	.7	29	247	22	.4	25

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
03...	88	388	.53	535	6	<.1	E.7	1	<1	<2	<31
MAY											
30...	110	448	.61	260	6	<.1	1.3	3	<1	2	7

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.5	8.0	10.0	5.5	3.0	4.5	4.5	3.5	4.0	1.5	.5	1.0
2	10.0	7.0	8.5	4.5	2.0	3.5	3.5	1.5	2.0	1.0	.0	.5
3	10.5	5.5	8.0	7.0	3.5	5.0	2.0	.5	1.0	.0	.0	.0
4	12.0	7.0	9.0	8.5	5.0	6.5	.5	.0	.0	.0	.0	.0
5	12.0	7.0	9.5	7.5	6.0	6.5	.0	.0	.0	.5	.0	.0
6	11.0	8.5	9.5	9.0	6.5	7.5	1.0	.0	.5	.0	.0	.0
7	11.5	8.0	9.5	7.0	5.5	6.5	1.0	.0	.5	.0	.0	.0
8	12.5	8.5	10.5	7.0	5.0	6.0	.0	.0	.0	.0	.0	.0
9	12.0	9.5	10.5	6.5	4.5	5.5	.0	.0	.0	.0	.0	.0
10	11.5	8.0	10.0	6.5	5.0	5.5	.5	.0	.0	.0	.0	.0
11	11.5	8.0	9.5	7.5	5.0	6.0	.0	.0	.0	1.0	.0	.0
12	11.0	9.0	10.0	8.0	5.0	6.5	1.0	.0	.5	1.0	.0	.5
13	12.0	8.0	10.0	8.0	5.5	6.5	1.5	.0	1.0	.0	.0	.0
14	12.0	9.5	10.5	7.0	4.5	6.0	.0	.0	.0	3.0	.0	1.5
15	9.5	6.0	7.5	6.0	3.5	4.5	.0	.0	.0	3.5	2.5	3.0
16	8.0	4.0	6.0	6.0	3.5	5.0	1.5	.0	.5	4.0	2.0	3.0
17	7.0	4.5	5.5	6.0	3.5	5.0	2.0	.5	1.0	3.0	1.0	2.0
18	9.0	6.0	7.0	6.0	4.0	5.0	2.5	1.0	1.5	1.5	.0	1.0
19	8.5	5.0	7.0	4.0	2.5	3.5	2.0	.0	1.0	2.5	.0	1.0
20	9.0	5.0	7.0	5.0	3.0	3.5	2.0	.0	1.0	3.0	1.0	2.0
21	9.5	6.0	7.5	3.0	1.0	2.0	2.5	1.5	2.0	3.5	1.5	2.5
22	9.5	5.5	7.5	2.5	.5	1.5	2.0	.5	1.0	2.5	1.0	2.0
23	9.0	5.0	7.0	1.5	.0	.5	1.0	.0	.5	2.5	.5	1.5
24	8.5	6.0	7.5	1.5	.0	.5	1.0	.0	.0	3.0	1.0	2.0
25	9.0	6.0	7.5	3.5	1.0	2.5	.5	.0	.0	3.5	1.5	2.5
26	9.5	6.5	8.0	4.5	3.5	4.0	.5	.0	.0	3.0	1.5	2.0
27	10.0	7.5	8.5	3.5	1.5	2.5	.5	.0	.0	2.5	.5	1.5
28	9.0	7.0	8.0	3.0	1.0	2.0	1.0	.0	.0	2.5	.5	1.5
29	8.5	6.0	7.0	3.5	1.5	2.5	1.0	.0	.0	.5	.0	.0
30	8.5	5.5	6.5	5.5	3.0	4.0	.5	.0	.0	.0	.0	.0
31	8.0	5.5	6.5	---	---	---	1.0	.0	.5	.0	.0	.0
MONTH	12.5	4.0	8.5	9.0	0.0	4.5	4.5	0.0	0.5	4.0	0.0	1.0

MISSOURI RIVER MAIN STEM

06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	.5	.0	.0	6.5	4.5	5.5	8.0	5.5	6.5	17.5	10.0	13.5
2	3.5	.0	1.5	7.0	3.0	5.0	7.0	4.5	6.0	16.0	11.5	14.0
3	3.0	1.5	2.0	7.5	3.5	5.5	10.0	3.5	6.0	17.5	11.0	14.5
4	2.0	.0	1.0	8.0	4.0	6.0	12.5	6.5	9.0	16.0	11.5	14.0
5	3.0	1.0	2.0	7.0	4.5	5.5	10.5	7.0	9.0	14.0	11.0	12.5
6	4.0	1.0	2.5	7.5	4.0	5.5	9.0	6.5	8.0	13.0	9.5	11.0
7	4.5	2.0	3.0	6.5	4.5	5.5	10.5	4.5	7.5	15.5	10.0	12.0
8	4.5	2.5	3.5	6.0	3.0	4.5	12.5	5.5	8.5	15.0	10.5	13.0
9	5.5	3.0	4.0	6.0	3.0	4.5	11.5	7.5	9.5	13.0	10.0	11.5
10	5.0	2.5	3.5	8.0	4.0	5.5	13.0	7.0	9.5	11.5	8.5	10.0
11	3.0	1.0	2.0	6.5	4.5	5.5	13.0	8.0	10.0	12.5	8.0	10.0
12	4.0	1.5	2.5	7.0	3.0	5.0	11.5	8.5	10.0	13.5	8.0	10.5
13	3.5	2.0	2.5	6.5	4.0	5.0	11.0	8.0	9.5	14.5	9.5	12.0
14	5.0	2.5	3.5	7.5	4.5	5.5	10.0	5.5	8.0	15.0	10.5	12.5
15	4.5	3.0	3.5	7.5	4.0	5.5	12.5	6.5	9.0	17.0	10.5	13.5
16	4.5	2.5	3.5	5.5	4.0	4.5	11.5	8.5	10.0	14.0	10.5	12.0
17	4.5	1.5	3.0	5.5	3.0	4.0	12.0	8.0	10.0	14.0	9.0	11.0
18	3.5	.5	2.0	7.0	3.0	4.5	13.5	8.0	10.5	17.5	9.0	13.0
19	3.5	.0	1.5	6.0	3.5	5.0	14.5	9.0	11.5	16.0	12.0	14.0
20	4.0	.5	2.0	6.5	2.5	4.0	14.5	9.0	11.5	18.0	11.0	14.5
21	6.0	2.5	4.0	7.0	2.0	4.5	16.5	10.0	13.0	17.5	13.0	15.0
22	7.0	4.0	5.0	9.0	4.0	6.5	15.5	10.5	13.0	17.0	13.0	14.5
23	6.0	4.0	5.0	7.5	4.5	6.0	14.0	10.0	12.0	16.0	12.5	14.5
24	5.0	3.0	4.5	7.0	2.5	4.5	14.0	8.5	11.0	17.5	12.5	15.0
25	5.0	2.0	3.0	9.0	4.0	6.0	11.0	8.0	9.5	19.0	13.0	16.0
26	4.0	1.0	2.5	10.5	5.5	8.0	13.5	7.0	10.0	17.0	13.0	15.0
27	5.0	2.5	3.5	11.0	6.0	8.5	16.5	8.5	12.0	16.0	11.0	14.0
28	7.0	4.0	5.5	9.5	6.0	8.0	13.5	10.5	12.0	15.5	11.5	13.5
29	7.0	4.0	5.5	7.0	4.0	5.5	13.5	7.5	10.0	16.5	11.5	14.0
30	---	---	---	8.5	3.5	6.0	15.5	7.5	11.5	16.5	11.0	13.5
31	---	---	---	9.5	5.0	7.0	---	---	---	14.0	11.0	12.5
MONTH	7.0	0.0	3.0	11.0	2.0	5.5	16.5	3.5	10.0	19.0	8.0	13.0

	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.5	9.5	13.0	19.0	15.0	17.5	22.5	16.0	19.5	17.0	14.0	15.5
2	19.5	11.5	15.0	20.0	14.0	17.0	23.5	16.5	20.0	15.5	13.0	14.0
3	20.0	13.0	16.5	17.5	14.0	15.5	21.0	16.5	19.0	16.0	10.5	13.5
4	20.5	13.0	16.5	20.0	12.0	15.5	19.0	15.5	17.0	18.0	12.0	15.0
5	19.0	14.0	17.0	20.0	13.5	17.0	22.0	15.0	18.5	18.0	12.5	15.5
6	21.5	14.0	17.5	20.5	14.0	17.5	21.5	16.0	19.0	15.5	12.5	14.0
7	21.0	14.5	18.0	22.0	13.5	17.5	21.5	15.5	18.5	16.5	10.5	13.5
8	19.0	14.5	17.0	22.0	15.0	18.5	21.5	15.0	18.5	15.5	11.5	13.5
9	16.5	13.0	14.5	21.5	15.5	18.5	21.5	15.0	18.5	14.5	10.5	12.5
10	17.5	12.5	15.0	20.5	15.0	17.5	20.0	17.0	18.5	13.5	10.5	11.5
11	17.0	13.0	15.5	22.0	14.5	18.5	22.0	16.0	19.0	15.5	10.5	12.5
12	16.0	13.5	14.5	22.5	15.5	19.0	21.0	15.0	18.0	17.0	11.5	14.5
13	18.0	12.5	15.0	22.5	15.5	19.0	20.5	14.5	17.5	18.5	12.5	15.5
14	18.0	14.0	15.5	22.5	15.5	19.5	20.5	14.0	17.5	18.5	13.0	16.0
15	17.5	13.0	15.5	21.0	16.0	19.0	21.0	14.0	17.5	18.5	13.0	16.0
16	17.5	12.5	15.0	22.5	15.0	18.5	19.0	14.0	16.5	17.5	13.5	15.5
17	19.5	12.0	16.0	20.5	16.5	18.5	19.5	13.5	16.5	18.5	13.5	16.0
18	19.5	13.5	16.5	19.5	15.5	17.5	18.0	14.0	15.5	17.0	13.0	15.0
19	18.0	14.0	16.0	19.0	14.5	17.0	18.5	12.5	15.5	17.0	12.0	14.5
20	---	12.5	---	21.0	14.0	17.5	18.5	13.5	16.0	13.0	9.5	11.5
21	---	---	---	22.5	15.0	18.5	18.5	12.0	15.5	12.0	5.5	9.0
22	19.0	14.0	---	21.0	15.5	18.5	19.5	13.0	16.0	6.5	3.0	5.0
23	21.0	15.0	17.5	22.5	15.5	19.0	20.0	14.0	17.0	9.0	3.5	6.0
24	21.0	14.5	17.5	22.0	15.5	18.5	20.5	16.5	18.5	11.0	5.0	8.0
25	---	---	---	22.0	15.0	18.5	21.0	15.0	18.0	12.5	6.0	9.5
26	---	---	---	20.5	16.0	18.5	19.5	14.5	17.0	13.5	7.5	10.5
27	21.5	14.5	17.5	21.5	15.5	19.0	19.0	14.0	16.5	13.5	8.0	11.0
28	22.0	14.0	18.0	23.0	16.0	19.5	18.5	13.0	16.0	14.5	8.0	11.5
29	22.5	14.5	18.5	23.0	16.5	20.0	18.5	12.5	16.0	14.0	10.0	12.5
30	22.0	15.5	19.0	23.0	17.0	20.0	18.0	14.5	16.0	13.0	10.5	11.5
31	---	---	---	22.5	17.5	20.0	18.0	12.5	15.5	---	---	---
MONTH	---	---	---	23.0	12.0	18.5	23.5	12.0	17.5	18.5	3.0	12.5

RUBY RIVER BASIN

06019500 RUBY RIVER ABOVE RESERVOIR, NEAR ALDER, MT

LOCATION.--Lat 45°11'33", long 112°08'30", in NW$^1/_4$SE$^1/_4$SW$^1/_4$ 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. Datum of gage is 5,400 ft above sea level, from topographic map. Prior to Oct. 1, 1938, nonrecording gage at bridge 1,500 ft downstream at datum 5.2 ft lower. Oct. 1, 1938, to Aug. 5, 1955, water-stage recorder at site 500 ft downstream at datum 0.5 ft lower.

REMARKS.--Records good. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	122	126	113	114	113	121	198	356	154	73	87
2	131	113	117	113	111	110	125	232	341	162	75	100
3	130	127	113	111	110	109	116	263	367	152	76	100
4	130	136	107	111	106	111	124	317	375	150	79	97
5	130	132	116	109	108	113	134	337	349	149	80	94
6	132	129	115	113	109	115	146	296	347	137	85	94
7	133	126	115	113	110	115	134	274	330	139	85	96
8	131	124	115	115	108	115	130	275	316	144	84	100
9	129	125	110	115	107	106	136	265	297	145	82	113
10	130	124	107	110	108	114	143	274	292	151	83	113
11	129	125	110	109	108	108	143	250	268	162	86	115
12	123	124	112	110	109	106	148	225	257	158	88	113
13	123	123	114	112	109	109	156	212	320	154	83	107
14	123	123	114	106	108	106	164	204	266	137	81	103
15	126	121	111	112	108	106	166	213	237	129	80	100
16	127	122	114	113	106	101	162	237	228	129	75	99
17	126	126	116	112	103	111	162	353	206	126	74	103
18	135	127	117	108	98	105	168	322	197	111	73	102
19	131	116	117	109	100	110	171	314	206	102	71	99
20	128	123	117	112	102	103	168	341	203	95	70	105
21	130	114	119	112	111	106	176	367	188	93	72	108
22	129	112	117	111	109	112	167	455	192	89	74	112
23	129	105	114	108	112	115	199	435	197	90	69	111
24	130	108	114	109	117	112	189	470	183	91	69	112
25	128	117	115	111	116	111	176	465	175	91	74	110
26	126	126	113	111	105	119	159	592	177	86	78	109
27	127	127	113	111	117	116	151	537	183	84	78	108
28	130	121	114	108	117	131	179	534	179	86	75	106
29	132	122	115	103	113	120	231	546	165	81	80	98
30	131	123	111	111	---	123	216	466	158	82	83	95
31	128	---	109	111	---	120	---	416	---	78	86	---
TOTAL	3998	3663	3537	3432	3159	3471	4760	10685	7555	3737	2421	3109
MEAN	129	122	114	111	109	112	159	345	252	121	78.1	104
MAX	135	136	126	115	117	131	231	592	375	162	88	115
MIN	123	105	107	103	98	101	116	198	158	78	69	87
AC-FT	7930	7270	7020	6810	6270	6880	9440	21190	14990	7410	4800	6170

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

MEAN	122	123	112	104	103	111	166	424	480	197	123	115
MAX	185	177	170	158	135	181	288	1010	1117	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	216	136	74.8	59.3	73.3
(WY)	1940	1940	1940	1943	1942	1945	1945	1987	1987	1961	1940	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000	
ANNUAL TOTAL	71701		53527			
ANNUAL MEAN	196		146		182	
HIGHEST ANNUAL MEAN					336	1984
LOWEST ANNUAL MEAN					119	1961
HIGHEST DAILY MEAN	1000	May 30	592	May 26	2940	May 16 1984
LOWEST DAILY MEAN	105	Nov 23	69	Aug 23	35	Jan 23 1962
ANNUAL SEVEN-DAY MINIMUM	111	Dec 9	71	Aug 18	38	Aug 14 1992
INSTANTANEOUS PEAK FLOW			727	May 26	3810	May 16 1984
INSTANTANEOUS PEAK STAGE			4.50	May 26	b6.24	May 16 1984
INSTANTANEOUS LOW FLOW			a64	Aug 23	c34	Aug 14 1992
ANNUAL RUNOFF (AC-FT)	142200		106200		131900	
10 PERCENT EXCEEDS	403		259		362	
50 PERCENT EXCEEDS	132		116		120	
90 PERCENT EXCEEDS	114		87		90	

a--Gage height, 2.60 ft.
b--Site and datum then in use.
c--Gage height, 1.99 ft, site and datum then in use.

RUBY RIVER BASIN

06020600 RUBY RIVER BELOW RESERVOIR, NEAR ALDER, MT

LOCATION.--Lat 45°14'32", long 112°06'36", in $SE^1/_4SE^1/_4NE^1/_4$ 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.--November 1962 to current year.

REVISED RECORDS.--1985 (M).

GAGE.--Water-stage recorder. Datum of gage is 5,286.63 ft above sea level (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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	69	58	43	39	30	31	198	416	284	384	291
2	89	69	57	43	39	30	31	205	379	275	381	286
3	90	69	57	44	39	30	31	234	369	256	399	279
4	91	69	57	44	39	30	31	278	370	228	421	273
5	92	70	53	44	39	30	31	330	368	208	417	280
6	93	70	46	44	39	30	31	333	362	208	415	283
7	94	70	46	40	39	30	37	299	384	208	412	280
8	94	70	46	37	39	30	40	315	375	233	407	277
9	94	70	45	36	39	30	40	311	364	250	387	274
10	95	71	44	36	39	30	40	303	363	226	353	271
11	96	72	44	36	39	31	40	292	362	229	327	268
12	96	72	44	36	39	31	40	281	361	235	326	264
13	98	72	44	36	39	31	40	295	334	242	324	261
14	99	72	44	36	39	30	40	277	315	271	323	258
15	99	72	43	37	39	30	40	325	315	284	306	247
16	100	72	43	36	39	30	41	324	316	284	282	237
17	100	72	44	37	34	30	41	324	346	303	239	234
18	101	72	44	37	30	30	41	323	358	305	212	231
19	101	64	44	37	30	30	41	323	357	304	211	228
20	87	59	43	37	30	31	41	323	353	302	198	211
21	78	59	43	37	30	31	41	323	337	302	231	201
22	78	60	43	37	30	31	42	325	327	321	255	107
23	78	60	43	37	30	31	42	347	303	336	253	42
24	79	59	43	38	30	31	42	388	290	354	251	43
25	79	59	43	38	30	31	42	428	290	375	247	43
26	71	59	43	38	30	31	42	485	293	396	257	44
27	73	59	42	38	30	31	58	533	299	394	262	44
28	74	59	43	38	30	31	96	516	285	392	261	45
29	74	59	43	39	30	31	154	527	285	389	275	45
30	74	58	43	39	---	31	198	506	284	387	297	45
31	68	---	43	39	---	31	---	461	---	385	294	---
TOTAL	2722	1987	1418	1194	1018	945	1505	10732	10160	9166	9607	5892
MEAN	87.8	66.2	45.7	38.5	35.1	30.5	50.2	346	339	296	310	196
MAX	101	72	58	44	39	31	198	533	416	396	421	291
MIN	68	58	42	36	30	30	31	198	284	208	198	42
AC-FT	5400	3940	2810	2370	2020	1870	2990	21290	20150	18180	19060	11690

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2000, BY WATER YEAR (WY)

MEAN	128	76.2	56.6	52.2	46.9	59.1	93.9	426	610	356	357	254
MAX	244	222	142	139	92.4	174	192	1035	1209	559	473	399
(WY)	1965	1985	1984	1984	1971	1998	1965	1984	1984	1975	1970	1975
MIN	38.0	33.6	23.7	20.9	21.4	19.3	30.5	189	281	197	222	59.4
(WY)	1986	1989	1967	1989	1991	1991	1991	1963	1987	1992	1985	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1963 - 2000	
ANNUAL TOTAL	77916		56346			
ANNUAL MEAN	213		154		212	
HIGHEST ANNUAL MEAN					352	1984
LOWEST ANNUAL MEAN					140	1989
HIGHEST DAILY MEAN	1010	May 30	533	May 27	2500	May 17 1984
LOWEST DAILY MEAN	42	Dec 27	30	Feb 18	15	Feb 17 1995
ANNUAL SEVEN-DAY MINIMUM	43	Dec 21	30	Feb 18	16	Jan 3 1989
INSTANTANEOUS PEAK FLOW			550	May 27	3010	May 16 1984
INSTANTANEOUS PEAK STAGE			4.20	May 27	a8.52	May 16 1984
INSTANTANEOUS LOW FLOW					b1.4	Dec 5 1974
ANNUAL RUNOFF (AC-FT)	154500		111800		153300	
10 PERCENT EXCEEDS	496		359		459	
50 PERCENT EXCEEDS	85		72		115	
90 PERCENT EXCEEDS	49		31		33	

a--From floodmark.
b--Dam closure, result of discharge measurement.

BIG HOLE RIVER BASIN

06024450 BIG HOLE RIVER BELOW BIG LAKE CREEK, AT WISDOM, MT

LOCATION.--Lat 45°37'07", long 113°27'25", in $SW^1/_4SW^1/_4NE^1/_4$ 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 above sea level, from topographic map.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				e50	303	242	20	14	8.7	34		
2				e100	311	155	21	13	14	68		
3				184	318	90	25	13	19	71		
4				257	311	58	37	13	23	56		
5				427	345	52	35	13	26	51		
6				461	336	59	32	12	24	48		
7				310	300	52	31	11	21	46		
8				294	244	51	29	11	20	55		
9				365	230	48	28	11	19	66		
10				432	276	67	26	10	20	77		
11				464	287	82	32	10	21	82		
12				526	245	94	34	10	22	98		
13				598	197	148	32	10	21	121		
14				649	157	161	27	9.6	19	145		
15				525	136	109	26	9.4	17	156		
16				429	96	82	30	9.2	13	148		
17				399	53	72	32	9.1	12	141		
18				396	64	54	34	9.0	12	135		
19				403	56	69	38	9.0	13	132		
20				399	50	117	43	8.8	15	128		
21				395	40	72	38	8.7	16	126		
22				429	41	44	31	8.7	17	132		
23				456	45	34	26	8.5	20	119		
24				410	77	27	21	8.2	22	119		
25				350	151	19	21	8.2	23	119		
26				325	177	15	20	8.2	22	120		
27				303	195	12	19	7.7	21	120		
28				305	230	11	18	7.5	21	119		
29				350	301	9.4	18	7.3	21	122		
30				325	381	9.8	16	7.4	21	135		
31				---	316	---	14	7.3	---	135		
TOTAL				11316	6269	2115.2	854	302.8	563.7	3224		
MEAN				377	202	70.5	27.5	9.77	18.8	104		
MAX				649	381	242	43	14	26	156		
MIN				50	40	9.4	14	7.3	8.7	34		
AC-FT				22450	12430	4200	1690	601	1120	6390		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1988 - 2000

MEAN	424	548	631	257	73.5	41.1	71.9
MAX	614	1476	1797	739	215	95.4	139
(WY)	1996	1997	1997	1995	1997	1997	1998
MIN	277	71.2	68.9	21.4	1.11	2.42	26.5
(WY)	1992	1992	1994	1988	1988	1988	1989

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1988 - 2000	
HIGHEST DAILY MEAN	649	Apr 14	3830	Jun 7 1991
LOWEST DAILY MEAN	7.3	Aug 29	b.00	Aug 28 1988
INSTANTANEOUS PEAK FLOW	707	Apr 14	4200	Jun 6 1995
INSTANTANEOUS PEAK STAGE	4.22	Apr 14	6.37	Jun 6 1995
INSTANTANEOUS LOW FLOW	a7.2	Aug 27	b.00	Aug 28 1988
10 PERCENT EXCEEDS			770	
50 PERCENT EXCEEDS			100	
90 PERCENT EXCEEDS			19	

a--Gage height, 1.96 ft.
b--No flow many days in August and September 1988.
e--Estimated.

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.--Complete temperature record for season (April to October). 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, 1994.

EXTREMES FOR CURRENT YEAR (April to October).--
WATER TEMPERATURE: Maximum, 24.5°C, July 30; minimum, 0.0°C, Apr. 1-8.

WATER TEMPERATURE, DEGREES CELSIUS, CALENDAR YEAR JANUARY TO DECEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JANUARY			FEBRUARY			MARCH			APRIL	
1										.5	.0	.0
2										.5	.0	.0
3										1.0	.0	.5
4										2.5	.0	1.0
5										2.0	.0	1.0
6										2.0	.0	.5
7										5.5	.0	2.0
8										6.5	.0	3.0
9										7.5	1.0	4.0
10										7.5	1.0	4.0
11										8.0	1.0	4.5
12										8.5	3.0	5.5
13										6.5	4.0	5.0
14										7.0	2.5	5.0
15										7.0	4.0	5.5
16										7.0	3.5	5.5
17										9.0	3.5	6.0
18										7.5	4.0	6.0
19										11.0	5.0	7.5
20										10.0	5.5	8.0
21										13.0	6.5	9.5
22										10.5	7.5	9.0
23										8.0	5.5	6.5
24										9.5	3.5	6.0
25										7.0	4.5	6.0
26										11.5	3.5	7.5
27										14.5	7.0	10.5
28										12.0	7.0	9.5
29										9.0	4.5	6.5
30										12.5	4.0	8.0
31										---	---	---
MONTH										14.5	.0	5.0

06024450 BIG HOLE RIVER BELOW BIG LAKE CREEK, AT WISDOM, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, CALENDAR YEAR JANUARY TO DECEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		MAY			JUNE			JULY			AUGUST	
1	15.0	7.0	11.0	16.5	6.5	11.0	21.5	14.0	17.5	24.0	15.0	19.5
2	12.5	9.0	11.0	20.0	9.5	14.5	22.5	13.5	17.5	24.0	15.0	19.0
3	13.0	7.0	10.0	20.5	11.0	15.5	17.0	13.0	14.0	19.5	14.0	17.0
4	11.0	8.5	9.5	22.0	10.5	16.0	19.5	10.5	14.5	19.0	14.5	16.5
5	10.5	7.5	9.0	19.0	12.0	16.0	19.0	11.0	15.0	22.5	13.5	18.0
6	10.5	6.0	8.0	22.0	11.5	16.5	20.5	12.0	16.0	21.5	13.0	17.5
7	13.0	7.0	9.5	22.5	12.5	17.0	22.5	12.0	16.5	21.5	13.0	17.0
8	11.0	6.5	9.0	19.5	13.0	16.5	22.5	13.0	17.5	21.5	12.5	17.0
9	9.0	6.0	7.5	17.5	11.5	14.0	22.5	13.0	17.5	22.5	13.0	17.5
10	8.5	4.5	6.5	16.5	9.5	13.0	23.0	13.5	18.0	20.5	14.5	17.5
11	7.5	3.0	5.0	15.0	9.5	12.5	23.0	13.5	18.0	21.0	13.5	17.0
12	8.5	3.5	6.0	14.5	10.5	12.5	22.5	14.0	18.5	21.5	12.5	17.0
13	11.5	4.5	8.0	16.5	10.0	13.5	23.5	14.0	19.0	20.0	12.0	16.0
14	12.5	6.5	9.5	18.0	12.0	14.5	24.0	14.5	19.0	20.5	11.5	15.5
15	14.5	6.5	10.5	15.5	11.5	13.5	21.5	13.5	18.0	19.5	11.5	15.5
16	11.5	8.0	9.5	18.0	9.0	13.5	22.0	13.0	17.5	18.5	11.5	15.0
17	13.5	7.0	10.0	20.5	9.5	15.0	20.5	14.5	17.5	19.5	11.0	15.0
18	17.5	8.0	12.0	18.5	11.0	15.0	21.0	14.0	17.0	18.5	11.5	15.0
19	15.5	8.5	12.0	17.0	11.5	14.0	20.5	12.5	16.5	18.0	11.0	14.5
20	17.5	7.5	12.0	18.5	10.5	14.0	21.5	12.5	17.0	18.5	11.0	14.5
21	19.0	10.5	14.0	21.5	10.5	16.0	23.0	13.5	18.0	18.5	10.0	14.0
22	18.0	11.0	14.0	20.5	12.0	16.5	22.0	13.5	17.5	19.0	10.5	14.5
23	18.0	10.5	14.0	21.5	12.0	16.5	22.0	13.5	18.0	19.0	11.0	15.0
24	15.5	10.0	12.5	21.5	11.5	16.5	23.0	12.5	17.5	19.5	14.0	16.5
25	18.0	10.0	13.5	22.5	12.5	17.0	23.5	13.0	18.0	20.0	12.0	16.0
26	15.5	10.5	13.0	21.5	11.5	16.5	22.0	14.0	17.5	18.0	12.0	15.0
27	14.0	8.5	11.5	22.5	12.0	16.5	22.5	13.5	18.0	17.5	11.0	14.5
28	16.0	10.0	12.5	22.0	12.5	17.0	23.5	13.5	18.5	17.5	10.5	13.5
29	14.0	10.0	11.5	21.0	12.5	16.5	24.0	14.5	19.0	16.5	10.0	13.5
30	14.5	8.0	11.0	20.5	13.0	16.5	24.5	15.0	19.5	17.5	10.5	14.0
31	12.5	9.5	11.0	---	---	---	23.5	15.5	19.5	16.5	10.0	13.5
MONTH	19.0	3.0	10.5	22.5	6.5	15.0	24.5	10.5	17.5	24.0	10.0	16.0

		SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER	
1	17.0	12.0	14.5	12.0	8.5	10.0						
2	14.0	11.0	12.5	11.5	7.0	9.5						
3	11.0	7.5	9.5	11.0	5.0	8.0						
4	16.0	8.0	11.5	10.0	4.5	7.0						
5	17.0	9.5	12.5	9.0	3.0	6.0						
6	13.0	9.5	11.5	9.0	2.0	5.5						
7	16.5	7.0	11.5	9.0	2.0	5.5						
8	13.0	8.5	11.0	9.5	2.5	6.0						
9	15.0	8.0	11.0	10.0	3.0	6.5						
10	11.0	8.5	9.5	8.0	5.5	7.0						
11	14.0	9.0	11.0	8.0	5.5	7.0						
12	17.5	8.5	12.5	6.0	4.0	5.0						
13	19.5	10.0	14.5	6.0	4.5	5.0						
14	19.5	11.0	15.0	7.0	4.5	5.5						
15	19.0	11.0	15.0	8.0	4.0	6.0						
16	18.5	12.5	15.0	8.5	3.5	6.0						
17	18.5	11.0	14.5	9.0	4.0	6.5						
18	15.5	10.5	13.0	8.5	4.0	6.5						
19	15.5	10.5	13.0	9.0	5.5	7.0						
20	13.5	7.5	10.5	7.5	4.5	6.0						
21	10.5	4.0	8.0	7.0	4.0	5.5						
22	5.5	1.5	3.5	5.5	1.0	3.0						
23	10.0	1.5	5.0	5.0	.0	2.5						
24	11.5	2.5	6.5	6.5	2.0	4.0						
25	12.5	4.0	8.0	6.5	2.0	4.0						
26	13.0	4.5	8.5	5.5	2.5	4.5						
27	13.5	5.0	9.0	6.0	3.5	4.5						
28	14.0	5.5	9.5	5.5	3.0	4.5						
29	12.0	7.0	9.5	4.5	2.5	3.5						
30	10.5	8.0	9.5	4.0	3.0	3.5						
31	---	---	---	4.5	2.0	3.0						
MONTH	19.5	1.5	11.0	12.0	.0	5.5						

BIG HOLE RIVER BASIN

06024540 BIG HOLE RIVER BELOW MUDD CREEK, NEAR WISDOM, MT

LOCATION.--Lat 45°48'27", long 113°18'45", in $SE^1/_4$ $SW^1/_4NW^1/_4$ 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 of 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. Datum of gage is 5,880 ft above sea level, from topographical map.

REMARKS.--Seasonal records good except those from July to September, which are fair, and those for estimated daily discharges, 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, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				e290	754	1100	163	58	42	119		
2				e300	743	899	160	56	54	139		
3				e320	825	730	154	53	61	166		
4				e350	859	622	166	51	72	155		
5				e600	985	580	170	58	77	140		
6				e800	1020	572	165	55	77	133		
7				e750	941	540	149	55	74	131		
8				e700	808	520	142	54	70	128		
9				791	737	514	132	54	69	137		
10				938	799	528	124	53	71	143		
11				1060	829	544	113	51	82	157		
12				1110	739	595	115	50	88	186		
13				1210	637	680	117	50	80	227		
14				1310	568	728	116	50	77	264		
15				1190	518	641	109	49	75	273		
16				997	490	568	107	49	71	265		
17				918	467	507	110	50	68	251		
18				892	487	452	111	48	66	243		
19				915	533	445	112	48	69	239		
20				924	562	517	118	46	71	235		
21				927	575	477	111	45	73	240		
22				955	621	411	100	46	79	237		
23				1040	674	406	90	45	86	231		
24				1000	716	338	78	45	83	217		
25				848	818	277	73	46	84	217		
26				760	895	236	71	43	85	219		
27				702	926	213	69	40	87	218		
28				712	990	196	69	38	86	215		
29				855	1120	181	67	39	93	219		
30				834	1260	169	63	39	97	238		
31				---	1250	---	61	39	---	242		
TOTAL				24998	24146	15186	3505	1503	2267	6224		
MEAN				833	779	506	113	48.5	75.6	201		
MAX				1310	1260	1100	170	58	97	273		
MIN				290	467	169	61	38	42	119		
AC-FT				49580	47890	30120	6950	2980	4500	12350		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1997 - 2000

MEAN	928	1577	1638	480	148	111	196
MAX	1076	2306	2272	961	244	151	258
(WY)	1998	1998	1999	1998	1998	1998	1998
MIN	833	779	506	113	48.5	75.6	137
(WY)	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1997 - 2000	
HIGHEST DAILY MEAN	1310	Apr 14	4560	May 31 1999
LOWEST DAILY MEAN	38	Aug 28	38	Aug 28 2000
INSTANTANEOUS PEAK FLOW	a1360	Apr 13	4690	May 31 1999
INSTANTANEOUS PEAK STAGE	b5.06	Apr 6	5.59	May 31 1999
INSTANTANEOUS LOW FLOW	c36	Aug 27	c36	Aug 27 2000

a--Gage height, 3.89 ft.
b--Backwater from ice.
c--Gage height, 2.16 ft.
e--Estimated.

BIG HOLE RIVER BASIN

06025250 BIG HOLE RIVER AT MAIDEN ROCK, NEAR DIVIDE, MT

LOCATION.--Lat 45°42'05", long 112°44'04", in $SW^1/_4SE^1/_4SE^1/_4$ sec. 32, T.1S., R.9W., Beaverhead County, Hydrologic Unit 10020004, on left bank at bridge on county road, 0.1 mi upstream from Moose Creek, 0.3 mi north of Maiden Rock, 5.2 mi northwest of Melrose, and at river mile 48.3.

DRAINAGE AREA.--2,199 mi^2

PERIOD OF RECORD.--October 1997 to current year (seasonal records only).

GAGE.--Water-stage recorder. Datum of gage is 5,300 ft above sea level, from topographic map.

REMARKS.--Seasonal records good. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				441	1260	2190	533	250	180	273		
2				472	1360	1900	574	241	195	314		
3				460	1480	1680	570	238	204	309		
4				523	1600	1590	584	241	214	326		
5				742	1680	1560	542	242	223	310		
6				1120	1710	1600	520	240	226	293		
7				1200	1570	1640	498	229	224	284		
8				1030	1390	1620	469	227	215	280		
9				1050	1260	1580	452	222	214	277		
10				1280	1290	1520	431	216	212	282		
11				1360	1300	1380	410	225	224	297		
12				1420	1230	1340	393	224	227	341		
13				1660	1100	1500	379	216	232	380		
14				1780	988	1470	375	209	219	452		
15				1690	914	1430	369	207	212	483		
16				1490	905	1440	353	203	210	482		
17				1350	1190	1290	345	201	206	465		
18				1350	1240	1130	348	200	199	453		
19				1380	1220	1070	355	202	200	453		
20				1400	1260	1140	350	194	204	447		
21				1410	1320	1090	355	192	220	454		
22				1470	1520	1010	344	189	218	459		
23				1610	1710	1020	339	189	215	440		
24				1550	1790	928	320	188	230	433		
25				1350	1820	834	301	189	226	425		
26				1220	1960	743	289	186	225	419		
27				1130	1960	679	283	184	228	422		
28				1170	2090	626	273	179	234	422		
29				1320	2390	586	267	173	236	421		
30				1320	2390	552	261	173	241	445		
31				---	2410	---	257	173	---	447		
TOTAL				36748	47307	38138	12139	6442	6513	11988		
MEAN				1225	1526	1271	392	208	217	387		
MAX				1780	2410	2190	584	250	241	483		
MIN				441	905	552	257	173	180	273		
AC-FT				72890	93830	75650	24080	12780	12920	23780		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1997 - 2000

MEAN				1340	2752	3111	1109	390	291	417		
MAX				1497	3871	4232	1999	563	362	573		
(WY)				1998	1998	1999	1998	1998	1998	1998		
MIN				1225	1526	1271	392	208	217	318		
(WY)				2000	2000	2000	2000	2000	2000	2000		

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1997 - 2000	
HIGHEST DAILY MEAN	2410	May 31	6850	May 30 1999
LOWEST DAILY MEAN	173	Aug 29	173	Aug 29 2000
INSTANTANEOUS PEAK FLOW	2450	May 31	6930	May 30 2000
INSTANTANEOUS PEAK STAGE	5.00	May 31	7.05	May 30 2000
INSTANTANEOUS LOW FLOW	a164	Aug 29	a164	Aug 29 2000

a--Gage height, 2.48 ft.

BIG HOLE RIVER BASIN

06025500 BIG HOLE RIVER NEAR MELROSE, MT

LOCATION.--Lat 45°31'36", long 112°42'03", in $SE^1/_4SE^1/_4SW^1/_4$ 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. Datum of gage is 5,032.87 ft above sea level. 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 datum.
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. Bureau of Reclamation satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	310	384	449	e330	e300	343	424	1210	2250	466	184	141
2	310	351	418	e320	e350	334	453	1260	1960	499	177	156
3	309	334	341	e320	e350	341	437	1410	1700	522	173	159
4	311	381	301	e330	334	344	484	1520	1590	533	175	168
5	311	403	e250	e330	355	351	636	1630	1540	500	176	173
6	312	424	272	e320	345	349	1000	1700	1550	481	172	176
7	323	458	364	e330	350	358	1200	1570	1590	466	165	180
8	321	472	341	e330	345	366	1030	1380	1610	436	158	181
9	320	458	328	e340	347	348	1050	1240	1610	414	156	184
10	322	439	357	e340	344	354	1250	1230	1550	394	152	189
11	323	429	348	e340	337	352	1390	1270	1400	376	156	201
12	322	426	384	e330	340	343	1440	1210	1320	356	161	204
13	324	418	395	e310	344	354	1690	1090	1440	343	156	208
14	325	417	375	e350	342	345	1840	960	1450	334	154	196
15	317	404	389	e350	339	341	1770	867	1390	331	150	185
16	322	399	398	e340	330	347	1570	847	1430	323	147	176
17	325	402	403	e340	316	356	1400	1070	1280	311	148	177
18	331	410	397	327	306	343	1380	1250	1110	296	146	176
19	336	390	386	358	323	353	1410	1160	1040	304	146	176
20	344	378	390	357	324	334	1430	1190	1080	303	143	179
21	344	377	390	358	328	337	1440	1230	1050	298	138	193
22	349	e260	359	358	333	339	1490	1420	963	288	133	198
23	348	e250	e330	353	337	345	1630	1640	963	284	132	196
24	354	e260	e310	356	341	346	1620	1750	888	273	136	211
25	359	338	e300	353	335	359	1410	1780	794	261	138	212
26	358	435	e300	361	322	373	1230	1930	694	243	137	210
27	362	470	e300	355	342	375	1120	1950	619	229	133	210
28	369	428	e290	341	342	415	1110	2050	562	212	130	212
29	393	398	e300	e300	339	415	1260	2390	524	204	127	212
30	394	402	e290	e290	---	420	1300	2420	492	198	126	214
31	394	---	e310	e280	---	415	---	2400	---	192	130	---
TOTAL	10442	11795	10765	10397	9740	11095	36894	46024	37439	10670	4655	5653
MEAN	337	393	347	335	336	358	1230	1485	1248	344	150	188
MAX	394	472	449	361	355	420	1840	2420	2250	533	184	214
MIN	309	250	250	280	300	334	424	847	492	192	126	141
AC-FT	20710	23400	21350	20620	19320	22010	73180	91290	74260	21160	9230	11210

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2000, BY WATER YEAR (WY)

MEAN	498	496	395	349	363	476	1504	3322	3989	1327	472	376
MAX	1109	1037	763	716	800	958	3515	8294	8380	4120	1457	870
(WY)	1947	1928	1976	1928	1971	1986	1943	1976	1965	1975	1975	1965
MIN	184	255	223	143	143	247	490	1108	814	254	87.6	114
(WY)	1936	1938	1933	1937	1937	1937	1975	1977	1992	1931	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1924 - 2000	
ANNUAL TOTAL	381202		205569			
ANNUAL MEAN	1044		562		1131	
HIGHEST ANNUAL MEAN					2024	1976
LOWEST ANNUAL MEAN					486	1931
HIGHEST DAILY MEAN	7380	May 30	2420	May 30	13800	Jun 4 1948
LOWEST DAILY MEAN	228	Aug 27	126	Aug 30	b49	Aug 17 1931
ANNUAL SEVEN-DAY MINIMUM	243	Aug 23	132	Aug 25	55	Aug 30 1988
INSTANTANEOUS PEAK FLOW			2480	May 29	c23000	Jun 14 1927
INSTANTANEOUS PEAK STAGE			3.33	May 29	d14.00	Jun 14 1927
INSTANTANEOUS LOW FLOW			a123	Aug 29	b49	Aug 17 1931
ANNUAL RUNOFF (AC-FT)	756100		407700		819600	
10 PERCENT EXCEEDS	2930		1420		3050	
50 PERCENT EXCEEDS	400		348		480	
90 PERCENT EXCEEDS	273		176		257	

a--Gage height, 0.77 ft.
b--Observed, gage height, 0.70 ft, site and datum then in use.
c--When Wise River Reservoir dam failed; maximum discharge unaffected by dam failure, 14,300 ft^3/s, June 10, 1972.
d--From floodmark, site and datum then in use.
e--Estimated.

BIG HOLE RIVER BASIN

06025500 BIG HOLE RIVER NEAR MELROSE, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-57, 1960-64, 1977 to current year.

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--Record complete for year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 24.0°C, June 25, 1988; 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, 23.0°C, July 29; minimum, 0.0°C many days November through February

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.5	8.0	9.5	5.0	2.5	3.5	2.5	1.5	2.0	.0	.0	.0
2	9.5	6.5	8.0	3.5	.5	2.0	1.5	.0	.5	.0	.0	.0
3	9.5	5.0	7.0	4.5	1.5	3.0	.5	.0	.0	.0	.0	.0
4	10.0	5.5	7.5	6.5	3.5	5.0	.0	.0	.0	.0	.0	.0
5	10.5	6.0	8.5	5.5	3.5	4.5	.0	.0	.0	.0	.0	.0
6	9.5	7.5	8.5	7.0	4.0	5.5	.5	.0	.0	.0	.0	.0
7	10.5	7.5	9.0	6.0	4.0	5.0	.5	.0	.0	.0	.0	.0
8	11.5	8.5	10.0	5.5	3.5	4.5	.0	.0	.0	.0	.0	.0
9	11.0	9.0	10.0	5.5	3.0	4.5	.0	.0	.0	.0	.0	.0
10	10.5	7.0	9.0	5.0	4.0	4.5	.0	.0	.0	.0	.0	.0
11	10.5	7.0	9.0	6.0	3.5	5.0	.0	.0	.0	.0	.0	.0
12	12.0	8.0	9.5	6.5	4.0	5.5	.0	.0	.0	.0	.0	.0
13	11.5	7.5	9.5	6.5	4.0	5.0	.0	.0	.0	.0	.0	.0
14	12.0	9.0	10.0	5.5	3.0	4.5	.0	.0	.0	.0	.0	.0
15	9.0	5.5	7.0	4.0	2.0	3.5	.0	.0	.0	.0	.0	.0
16	6.5	3.0	5.0	4.0	2.0	3.0	.5	.0	.0	.5	.0	.0
17	5.5	3.5	4.5	4.0	2.5	3.5	.5	.0	.0	.5	.0	.0
18	8.0	5.0	6.0	3.5	2.0	3.0	.5	.0	.5	.0	.0	.0
19	7.0	4.0	5.5	2.5	.5	1.5	.5	.0	.0	.0	.0	.0
20	7.5	4.0	5.5	3.0	1.5	2.0	.0	.0	.0	.0	.0	.0
21	8.0	4.5	6.0	1.5	.0	.5	.5	.0	.0	.0	.0	.0
22	8.0	4.5	6.5	1.0	.0	.5	.0	.0	.0	.5	.0	.0
23	7.5	4.0	6.0	.5	.0	.0	.0	.0	.0	.0	.0	.0
24	6.5	4.5	5.5	.5	.0	.0	.0	.0	.0	.5	.0	.0
25	7.0	4.5	5.5	2.5	.0	1.0	.0	.0	.0	.5	.0	.0
26	8.0	4.5	6.5	3.5	2.0	2.5	.0	.0	.0	.5	.0	.0
27	8.0	6.0	7.0	2.5	.5	1.5	.0	.0	.0	.5	.0	.0
28	8.0	6.5	7.5	1.5	.0	1.0	.0	.0	.0	.0	.0	.0
29	7.5	5.5	6.5	1.5	.0	1.0	.0	.0	.0	.0	.0	.0
30	7.5	4.5	6.0	3.0	1.0	2.0	.5	.0	.0	.0	.0	.0
31	7.0	5.0	6.0	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	12.0	3.0	7.5	7.0	.0	3.0	2.5	.0	.0	.5	.0	.0

BIG HOLE RIVER BASIN

06025500 BIG HOLE RIVER NEAR MELROSE, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	4.0	2.5	3.0	6.0	3.5	5.0	14.5	9.0	11.5
2	.0	.0	.0	5.0	.5	2.5	5.5	3.0	4.5	14.0	11.5	12.5
3	.0	.0	.0	5.5	1.5	3.5	8.0	2.0	4.5	13.5	10.0	12.0
4	.0	.0	.0	5.5	1.5	4.0	10.5	4.0	7.0	13.0	10.5	11.5
5	.0	.0	.0	5.0	2.5	4.0	9.0	5.0	7.0	12.0	9.0	10.5
6	.5	.0	.0	6.0	2.5	4.0	6.5	2.5	4.5	10.5	8.5	9.0
7	1.0	.0	.5	5.0	2.5	4.0	5.5	1.0	3.0	11.5	8.5	9.5
8	1.0	.0	.5	4.5	2.0	3.0	6.5	2.5	4.5	11.0	8.5	10.0
9	2.0	.5	1.0	3.5	1.5	2.5	7.5	3.5	5.0	10.5	8.5	9.5
10	2.0	.0	1.0	4.5	1.5	3.0	6.5	3.5	5.0	9.0	7.5	8.5
11	1.0	.0	.5	5.0	1.5	3.0	7.0	3.0	5.0	9.0	6.5	7.5
12	1.0	.0	.5	5.0	1.0	3.0	8.5	6.0	7.0	8.5	6.0	7.5
13	2.0	.0	1.0	5.0	2.5	3.5	8.5	6.5	8.0	10.0	6.5	8.0
14	3.0	.5	1.5	5.5	2.5	4.0	7.5	5.5	6.5	11.5	8.0	9.5
15	2.5	1.0	1.5	5.5	1.5	3.5	8.5	5.0	6.5	14.0	9.0	11.0
16	2.5	.5	1.5	4.0	1.5	3.0	9.0	6.0	7.5	12.0	10.0	11.0
17	2.0	.0	.5	4.5	1.5	3.0	9.0	6.0	7.5	11.5	9.5	10.5
18	.5	.0	.0	5.5	1.0	3.0	10.0	6.5	8.5	13.5	8.5	11.0
19	.5	.0	.0	5.5	3.0	4.0	10.5	8.5	9.0	14.0	10.0	12.0
20	.5	.0	.0	5.0	.5	2.5	11.5	8.0	9.5	14.5	10.0	12.0
21	3.0	.0	1.0	5.5	1.0	3.5	13.0	9.0	10.5	15.0	12.0	13.5
22	4.0	1.0	2.5	7.5	2.0	4.5	14.0	10.0	11.5	15.0	12.5	13.5
23	3.5	1.5	2.5	5.5	3.0	4.5	11.0	9.0	10.0	15.0	12.0	13.5
24	3.0	1.5	2.5	6.0	1.0	3.5	10.5	7.5	8.5	13.5	11.0	12.0
25	3.5	.5	1.5	7.0	2.0	4.5	8.5	7.0	7.5	14.0	11.0	12.5
26	2.5	.0	1.0	9.0	4.0	6.5	11.0	6.0	8.0	13.0	12.0	12.5
27	3.0	1.0	2.0	9.5	4.0	7.0	13.5	7.5	10.0	12.5	10.5	11.5
28	4.5	2.0	3.0	8.0	4.5	6.5	12.5	10.0	11.5	13.0	11.5	12.0
29	5.0	1.5	3.5	4.5	2.5	3.5	11.5	8.0	9.5	12.5	10.5	11.5
30	---	---	---	7.0	2.0	4.0	12.0	7.0	9.5	13.0	9.5	11.0
31	---	---	---	8.0	3.0	5.0	---	---	---	11.5	10.0	10.5
MONTH	5.0	0.0	1.0	9.5	.5	4.0	14.0	1.0	7.5	15.0	6.0	11.0

		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.0	8.5	10.5	18.0	15.5	17.0	22.5	16.5	19.5	16.5	13.5	15.0
2	15.5	11.0	13.0	19.0	14.5	16.5	22.5	17.0	19.5	15.0	12.5	14.0
3	17.5	13.0	15.0	16.5	13.5	14.5	20.0	16.0	18.0	13.5	10.5	12.0
4	17.5	13.0	15.0	17.5	11.5	14.0	18.0	15.5	16.5	16.0	11.0	13.5
5	16.5	14.0	15.5	18.5	12.0	15.0	20.0	15.0	17.5	16.0	11.5	13.5
6	18.0	13.5	15.5	18.0	13.0	15.5	20.5	15.5	18.0	14.0	11.5	12.5
7	18.0	14.5	16.0	19.0	13.0	16.0	20.5	15.0	18.0	15.0	9.5	12.0
8	17.0	15.0	16.0	20.5	14.0	17.0	19.5	14.5	17.5	14.0	10.5	12.5
9	15.0	13.0	14.0	20.5	14.5	17.0	19.5	15.0	17.5	14.5	10.0	12.5
10	14.0	11.5	12.5	20.0	15.0	17.5	19.0	16.0	17.5	13.0	10.0	11.0
11	13.0	10.5	12.0	21.5	15.0	18.0	21.0	15.0	18.0	15.0	10.5	12.5
12	13.0	11.5	12.5	20.0	15.5	18.0	19.5	14.5	17.5	16.0	10.5	13.5
13	15.5	11.0	13.0	21.0	15.5	18.5	20.0	14.5	17.0	17.5	12.0	15.0
14	14.5	11.5	13.0	21.5	15.5	18.5	20.0	14.0	17.0	18.0	13.0	15.5
15	16.0	13.0	14.0	20.5	15.5	18.0	19.5	14.0	17.0	17.5	13.0	15.5
16	15.0	11.5	13.0	21.0	14.5	17.5	18.5	14.0	16.5	18.5	14.0	16.0
17	16.5	11.5	13.5	19.0	16.0	17.5	19.0	13.5	16.5	18.0	14.0	16.0
18	17.0	13.0	15.0	19.0	15.5	17.0	18.0	14.5	16.0	16.5	13.5	15.0
19	16.0	13.5	14.5	18.5	14.5	16.5	18.0	12.5	15.0	17.0	13.5	15.0
20	17.0	11.5	14.0	19.5	14.5	17.0	16.5	13.5	15.5	13.5	10.0	11.5
21	18.5	12.5	15.5	22.0	14.5	18.0	17.5	12.5	15.0	12.0	7.0	9.5
22	17.0	14.5	15.5	20.5	16.0	18.5	18.0	13.0	15.5	7.0	4.5	5.5
23	18.5	14.0	16.0	22.0	16.0	19.0	18.5	13.5	16.5	8.5	4.0	6.0
24	19.5	14.0	16.5	21.5	15.5	18.5	18.0	15.5	17.0	9.5	4.5	7.0
25	20.0	14.0	16.5	21.0	15.5	18.5	19.5	14.0	17.0	11.0	5.5	8.5
26	19.5	14.0	16.5	20.0	16.0	18.5	19.0	14.5	17.0	12.0	7.0	9.5
27	19.5	13.5	16.5	21.0	15.5	18.5	19.0	14.0	16.5	12.5	7.5	10.0
28	20.5	14.0	17.0	22.5	16.0	19.0	17.5	13.0	15.0	12.5	8.0	10.5
29	20.5	14.0	17.5	23.0	16.5	20.0	17.0	12.5	15.0	12.0	9.0	11.0
30	21.0	15.0	17.5	22.5	17.0	20.0	16.5	13.5	15.0	12.0	9.5	10.5
31	---	---	---	21.5	17.5	19.5	16.5	12.5	14.5	---	---	---
MONTH	21.0	8.5	15.0	23.0	11.5	17.5	22.5	12.5	17.0	18.5	4.0	12.0

BIG HOLE RIVER BASIN

06026210 BIG HOLE RIVER NEAR GLEN, MT

LOCATION.--Lat 45°26'26", long 112°33'20", in $NW^1/_4SW^1/_4SE^1/_4$ 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 above sea level, from topographic map

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				501	1260	2250	572	189	138	298		
2				534	1270	1960	600	182	173	360		
3				532	1380	1690	655	178	182	379		
4				563	1470	1570	660	190	185	387		
5				682	1580	1550	624	194	189	415		
6				998	1660	1570	586	183	195	405		
7				1240	1570	1600	552	172	202	384		
8				1130	1410	1610	531	153	202	377		
9				1120	1290	1630	496	153	202	378		
10				1270	1280	1600	467	158	213	380		
11				1410	1340	1450	441	162	225	403		
12				1450	1300	1380	411	162	248	496		
13				1640	1200	1440	396	155	252	520		
14				1790	1080	1490	389	142	241	576		
15				1770	988	1420	383	136	224	620		
16				1600	953	1470	373	136	214	635		
17				1440	1100	1350	362	138	198	623		
18				1410	1320	1210	331	149	167	602		
19				1430	1230	1160	322	153	171	592		
20				1450	1240	1160	333	132	180	580		
21				1460	1280	1140	333	129	204	576		
22				1500	1420	1080	323	129	228	588		
23				1600	1610	1080	310	126	236	572		
24				1630	1720	1010	296	129	241	564		
25				1470	1740	919	278	134	252	553		
26				1310	1870	830	258	131	253	545		
27				1210	1910	749	244	128	246	548		
28				1180	1960	687	226	123	251	540		
29				1290	2310	645	216	122	260	546		
30				1340	2380	613	204	122	268	579		
31				---	2350	---	183	127	---	580		
TOTAL				37950	46471	39313	12355	4617	6440	15601		
MEAN				1265	1499	1310	399	149	215	503		
MAX				1790	2380	2250	660	194	268	635		
MIN				501	953	613	183	122	138	298		
AC-FT				75270	92180	77980	24510	9160	12770	30940		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1997-2000

MEAN	1417	2724	3223	1190	377	311	532
MAX	1568	3829	4432	2138	565	393	708
(WY)	1998	1998	1999	1998	1998	1998	1998
MIN	1265	1499	1310	399	149	215	405
(WY)	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1997 - 2000	
HIGHEST DAILY MEAN	2380	May 30	7360	May 30 1999
LOWEST DAILY MEAN	122	Aug 29	122	Aug 29 2000
INSTANTANEOUS PEAK FLOW	2430	May 29	7570	May 30 1999
INSTANTANEOUS PEAK STAGE	3.99	May 29	6.15	May 30 1999
INSTANTANEOUS LOW FLOW	a119	Aug 29	a119	Aug 28 2000

a--Gage height, 1.86 ft.

06026500 JEFFERSON RIVER NEAR TWIN BRIDGES, MT

LOCATION.--Lat 45°36'45", long 112°19'47", in $SE^1/_4SE^1/_4SW^1/_4$ 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 above sea level, from topographic map. August 1940 to September 1943, nonrecording gage at site 500 ft downstream at different datum. 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 datums.

REMARKS.--Records good except those for estimated daily discharges, which are fair. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	1320	1390	1160	e1000	1070	1100	1700	2720	795	257	284
2	1070	1340	1430	1130	1100	1070	1140	1580	2390	878	253	300
3	1120	1320	1320	1080	1150	1060	1170	1630	2090	978	230	349
4	1120	1290	e1100	1110	1060	1060	1150	1700	1840	1080	242	389
5	1100	1410	e1000	1190	1070	1070	1220	1890	1800	1020	310	378
6	1080	1420	e1050	1120	1080	1080	1540	2080	1770	933	361	382
7	1040	1420	e1100	1130	1080	1090	1870	2080	1790	852	368	390
8	1060	1450	e1050	1150	1080	1120	1820	1870	1810	784	356	389
9	1070	1440	e1050	1130	1100	1110	1710	1690	1860	713	361	366
10	1090	1410	e1100	e1100	1110	1080	1800	1640	1920	689	343	400
11	1120	1370	e1150	e1100	1060	1080	2000	1740	1820	630	364	461
12	1160	1360	1220	e1050	1080	1070	2020	1780	1720	549	377	483
13	1150	1340	1250	e1000	1090	1060	2180	1680	1770	489	359	485
14	1160	1340	1180	e1100	1090	1060	2380	1510	1860	465	369	474
15	1170	1340	1200	1200	1110	1050	2410	1380	1830	455	364	464
16	1250	1330	1270	1170	1090	1050	2260	1270	1850	452	347	439
17	1310	1340	1260	1150	1060	1060	2060	1340	1810	449	325	429
18	1330	1350	1280	1120	1020	1040	1980	1700	1670	459	350	429
19	1270	1350	1300	1140	986	1040	1940	1560	1630	436	407	429
20	1270	1300	1220	1150	1020	1040	1940	1520	1630	430	402	441
21	1240	1310	1270	1150	1070	1010	1940	1510	1520	401	411	493
22	1220	1220	1230	1150	1100	1010	2000	1660	1420	392	368	568
23	1230	e1050	e1100	1140	1100	1020	2100	1830	1430	376	364	627
24	1220	e1050	e1050	1140	1100	1030	2170	1930	1390	380	358	632
25	1210	1180	e1050	1140	1110	1030	2030	1990	1240	379	349	650
26	1230	1320	e1000	1140	1050	1040	1830	2140	1150	345	351	636
27	1300	1460	e1000	1120	1070	1070	1670	2270	1030	333	334	618
28	1310	1400	e1000	1120	1090	1110	1540	2340	958	304	306	626
29	1300	1370	e1050	e1000	1090	1200	1640	2690	874	296	286	635
30	1320	1360	e1050	e950	---	1170	1740	2900	813	285	263	636
31	1320	---	1120	e900	---	1140	---	2810	---	269	284	---
TOTAL	36880	39960	35840	34430	31216	33190	54350	57410	49405	17296	10419	14282
MEAN	1190	1332	1156	1111	1076	1071	1812	1852	1647	558	336	476
MAX	1330	1460	1430	1200	1150	1200	2410	2900	2720	1080	411	650
MIN	1040	1050	1000	900	986	1010	1100	1270	813	269	230	284
AC-FT	73150	79260	71090	68290	61920	65830	107800	113900	97990	34310	20670	28330

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2000, BY WATER YEAR (WY)*

MEAN	1383	1535	1304	1101	1183	1351	2434	3984	5975	2146	885	1049
MAX	2052	2025	1864	1424	1690	2092	4634	7025	9816	4477	1700	2114
(WY)	1966	1966	1996	1996	1971	1972	1943	1997	1997	1995	1995	1965
MIN	760	914	845	641	862	840	927	1724	1296	527	208	288
(WY)	1967	1995	1995	1995	1967	1967	1961	1966	1994	1966	1961	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1940 - 2000*	
ANNUAL TOTAL	681394		414678			
ANNUAL MEAN	1867		1133		2063	
HIGHEST ANNUAL MEAN					2824	1997
LOWEST ANNUAL MEAN					1130	1961
HIGHEST DAILY MEAN	8850	May 31	2900	May 30	14900	Jun 9 1997
LOWEST DAILY MEAN	651	Aug 27	230	Aug 3	165	Aug 19 1961
ANNUAL SEVEN-DAY MINIMUM	757	Sep 16	262	Jul 29	176	Aug 16 1961
INSTANTANEOUS PEAK FLOW			2950	May 30	b16500	Jun 10 1964
INSTANTANEOUS PEAK STAGE			6.33	May 30	12.60	Jun 8 1995
INSTANTANEOUS LOW FLOW			a215	Aug 3	c82	Aug 17 1966
ANNUAL RUNOFF (AC-FT)	1352000		822500		1495000	
10 PERCENT EXCEEDS	3680		1830		4440	
50 PERCENT EXCEEDS	1290		1110		1360	
90 PERCENT EXCEEDS	883		369		760	

*--During periods of operation (August 1940 to September 1943, October 1957 to September 1972, May 1994 to current year).
a--Gage height, 2.84 ft.
b--Gage height, 9.04 ft, site and datum then in use.
c--Gage height, 1.61 ft, site and datum then in use.
e--Estimated.

06031450 BOULDER RIVER ABOVE KLEINSMITH GULCH, NEAR BASIN, MT

LOCATION.--Lat 46°16'11", long 112°16'43", in $SW^1/_4NE^1/_4SW^1/_4$ sec. 18, T.6 N., R.5 W., Jefferson County, Hydrologic Unit 10020006, 0.5 mi upstream from Kleinsmith Gulch and 0.9 mi southwest of Basin.

DRAINAGE AREA.--218 mi^2.

PERIOD OF RECORD.--October 1996 to present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
NOV 1999										
16...	0900	9.27	7.9	143	-1.5	0.5	59	18	3.6	1.2
JAN 2000										
20...	1000	13.6	7.7	151	-3.5	0.0	56	17	3.4	1.3
MAY										
02...	0940	116	8.2	87	13.5	8.5	32	9.5	1.9	1.2
JUN										
06...	1000	67.9	7.9	80	22.5	11.0	28	8.6	1.6	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
NOV 1999										
16...	.5	8.0	58	2.1	--	--	15	83	.11	2.08
JAN 2000										
20...	.5	8.8	58	1.8	--	--	14	82	.11	2.99
MAY										
02...	.4	4.7	33	1	<.1	16	8.1	62	.08	19.4
JUN										
06...	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
NOV 1999										
16...	2	44	3	3	<.1	<.1	--	1	2	64
JAN 2000										
20...	20	64	2	--	<.1	<.1	--	2	E1	43
MAY										
02...	--	--	3	3	<.1	<.1	<1	2	3	--
JUN										
06...	--	--	3	3	<.1	<.1	--	2	2	--

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999										
16...	286	<1	<1	11	16	3	<31	3	.08	80
JAN 2000										
20...	283	<1	<1	14	18	14	<31	3	.11	65
MAY										
02...	--	<1	<1	--	--	2	4	13	4.1	75
JUN										
06...	--	<1	<1	--	--	3	4	7	1.3	83

462340112175701 BASIN CREEK BELOW BUCKEYE MINE, NEAR BASIN, MT

LOCATION.--Lat 46°23'40", long 112°17'57", in SW$^1/_4$ SE$^1/_4$ NW$^1/_4$ sec. 36, T.8 N., R.6 W., Jefferson County, Hydrologic Unit 10020006, 0.4 mi downstream from the Buckeye Mine and 8.7 mi north of Basin.

DRAINAGE AREA.--2.49 mi^2.

PERIOD OF RECORD.--October 1996 to present (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
JAN 2000 19...	1145	7.0	81.5	-5.0	0.0	35	10	2.4	1.1	.2	2.3

DATE	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
JAN 2000 19...	33	E.2	8.3	24	136	14	.2	.3	3	5

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JAN 2000 19...	91	595	2	81	57	63	40	43	32	52

E--Estimated.

462347112180401 BASIN CREEK BELOW BUCKEYE MINE NEAR LOGGING ROAD, NEAR BASIN, MT

LOCATION.--Lat 46°23'47", long 112°18'04", in $SW^1/_4SE^1/_4NW^1/_4$ 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 to June 2000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
JAN 2000												
19...	0945	.24	7.0	84	-5.0	0.0	35	9.9	2.4	1.0	.2	2.4
MAY												
02...	0915	6.9	8.0	49	5.0	0.0	19	5.4	1.3	.9	.1	1.4
JUN												
05...	1045	1.8	7.9	59	23.5	7.0	23	6.9	1.5	--	--	--

DATE	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
JAN 2000												
19...	32	E.2	--	--	8.9	17	33	24	--	.2	.3	2
MAY												
02...	15	E.2	<.1	10	7.1	--	--	10	57	1	1	13
JUN												
05...	--	--	--	--	--	--	--	13	16	.6	.6	12

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JAN 2000												
19...	1	370	573	1	6	112	108	38	38	2	0.0	67
MAY												
02...	15	--	--	9	54	--	--	150	144	11	0.2	42
JUN												
05...	12	--	--	2	4	--	--	81	87	1	0.0	75

E--Estimated.

BOULDER RIVER BASIN

462120112173701 BULLION MINE ADIT NEAR BASIN, MT

LOCATION.--Lat 46°21'20", long 112°17'37", in NW$^1/_4$SW$^1/_4$SE$^1/_4$ 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.

PERIOD OF RECORD.--October 1999 to June 2000, discontinued.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)
OCT 1999												
26...	1105	.01	3.1	1560	--	5.0	320	79	30	2.8	5.2	.1
JAN 2000												
19...	0900	.01	3.4	1280	-6.0	2.0	300	73	27	3.0	5.5	.1
APR												
25...	1100	E.01	3.7	1160	7.0	5.0	280	70	26	2.8	5.7	.1
JUN												
05...	1230	.01	2.8	--	25.0	9.5	300	75	28	2.7	4.7	.1

DATE	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT 1999												
26...	<1	1.6	--	800	--	7950	10600	450	710	374	330	4800
JAN 2000												
19...	<1	.7	--	690	--	6870	--	210	--	323	--	3380
APR												
25...	--	.4	.2	640	31	--	--	220	--	260	--	2060
JUN												
05...	--	<.3	<.1	1000	36	--	--	6300	--	430	--	11300

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	H-2 / H-1 STABLE ISOTOPE RATIO PER MIL (82082)	O-18 / O-16 STABLE ISOTOPE RATIO PER MIL (82085)
OCT 1999											
26...	4600	160000	151000	389	420	17900	19000	33900	31400	-142	-18.94
JAN 2000											
19...	--	140000	--	354	--	17700	--	27000	--	-143	-18.89
APR											
25...	--	--	--	253	--	--	--	23400	--	-144	-18.92
JUN											
05...	--	--	--	801	--	--	--	58500	--	-144	-18.78

E--Estimated.

BOULDER RIVER BASIN

462153112181701 BULLION MINE TRIBUTARY AT MOUTH, NEAR BASIN, MT

LOCATION.--Lat 46°21'53", long 112°18'17", in $SE^1/_4NW^1/_4NW^1/_4$ 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 present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAY 2000											
03...	1115	1.3	7.1	101	16.5	3.0	34	9.7	2.5	.7	.2
JUN											
05...	1330	.81	6.8	87	26.5	11.5	29	8.3	2.0	--	--

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)
MAY 2000											
03...	2.1	7.1	.3	<.1	14	33	69	.09	.24	3	30
JUN											
05...	--	--	--	--	--	--	--	--	--	11	33

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000											
03...	15	16	99	183	<1	12	1770	1680	7	.02	52
JUN											
05...	10	12	86	148	2	7	1170	1120	1	.00	73

BOULDER RIVER BASIN

462047112201901 JACK CREEK AT MOUTH, NEAR BASIN, MT

LOCATION.--Lat 46°20'47", long 112°20'19", in NW$^1/_4$SE$^1/_4$SE$^1/_4$ sec. 22, T.7 N., R.6 W., Jefferson County, Hydrologic Unit 10020006, at Basin Creek road crossing, 7 mi north of Basin.

DRAINAGE AREA.--8.55 mi^2.

PERIOD OF RECORD.--January to July 2000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
JAN 2000									
19...	1330	.79	7.2	104	-1.5	0.0	40	11	2.9
MAY									
02...	1300	11	7.4	66	20.5	6.5	25	7.0	1.7
JUN									
05...	1515	4.1	7.2	70	27.5	12.0	26	7.5	1.8
JUL									
12...	1440	2.0	7.7	92	26.5	17.5	35	9.9	2.5

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
JAN 2000										
19...	1.2	.2	3.2	24	.3	--	--	24	58	.08
MAY										
02...	.9	.2	2.2	17	.3	<.1	14	11	48	.07
JUN										
05...	--	--	--	--	--	--	--	--	--	--
JUL										
12...	1.3	.2	2.8	22	--	--	17	20	--	--

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
JAN 2000										
19...	.12	58	116	--	--	3	--	3	3	--
MAY										
02...	1.40	80	354	<1	<1	4	11	3	3	<.8
JUN										
05...	--	--	--	--	--	8	13	2	2	--
JUL										
12...	--	--	--	--	--	5	10	2	3	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
JAN 2000										
19...	--	11	16	95	203	<1	E0.5	89	86	--
MAY										
02...	<1	34	42	120	572	<1	4	85	85	<.2
JUN										
05...	--	25	29	--	--	<1	2	--	--	--
JUL										
12...	--	--	21	110	373	--	--	55	--	--

E--Estimated.

BOULDER RIVER BASIN

462047112201901 JACK CREEK AT MOUTH, NEAR BASIN, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JAN 2000										
19...	--	--	--	--	--	392	442	1	.00	67
MAY										
02...	<.3	<1	<1	<.2	<1	301	289	5	.15	70
JUN										
05...	--	--	--	--	--	204	228	1	.01	80
JUL										
12...	--	--	--	--	--	213	258	2	.01	60

BOULDER RIVER BASIN

06031600 BASIN CREEK AT BASIN, MT

LOCATION.--Lat 46°16'16", long 112°15'42", in NE$^1/_4$NW$^1/_4$SW$^1/_4$ 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 present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
NOV 1999										
16...	1045	4.6	7.6	102	15.0	1.5	40	11	2.9	1.1
JAN 2000										
20...	1130	4.7	7.6	106	0.0	0.0	41	12	2.9	1.2
MAY										
02...	1125	81	7.4	48	18.0	6.2	17	4.9	1.1	1.0
JUN										
06...	1130	17	7.5	60	25.5	13.0	21	6.1	1.4	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
NOV 1999										
16...	.2	3.4	30	.5	--	--	19	57	.08	.70
JAN 2000										
20...	.2	3.7	31	.6	--	--	19	57	.08	.72
MAY										
02...	.2	2.2	13	.5	<.1	14	8	39	.05	8.5
JUN										
06...	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
NOV 1999										
16...	12	33	5	7	.3	.4	2	4	21	181
JAN 2000										
20...	14	E17	3	--	.3	.3	2	3	14	81
MAY										
02...	--	--	5	17	.5	.8	10	15	--	--
JUN										
06...	--	--	7	9	.3	.3	8	8	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999									
16...	<1	E1	6	20	62	84	2	.02	82
JAN 2000									
20...	<1	E1	6	8	75	76	3	.04	23
MAY									
02...	<1	9	--	--	78	92	14	3.1	70
JUN									
06...	<1	<1	--	--	49	55	2	.09	82

E--Estimated.

BOUNDER RIVER BASIN

462012112135101 CATARACT CREEK TRIBUTARY, 1.6 MILE ABOVE UNCLE SAM GULCH, NEAR BASIN, MT

LOCATION.--Lat 46°20'12", long 112°13'51", in NE$^1/_4$SW$^1/_4$SE$^1/_4$ sec. 21, T.7 N., R.5 W., Jefferson County, Hydrologic Unit 10020006, left bank tributary to Cataract Creek, 1 mi west of Boulder Chief Park, 1.6 mi upstream from Uncle Sam Gulch, and 4.5 mi northeast of Basin.

PERIOD OF RECORD.--October 1999, discontinued.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)
OCT 1999 26...	1525	.02	7.2	141	4.5	57	17.1	3.4	1.1	.2	4.3	41

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT 1999 26...	.9	26	78	.11	.01	6	53	E1	E2	<1	1	<1

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999 26...	E1	50	142	<1	E1	24	31	271	284	5	0.00	35

E--Estimated.

BOULDER RIVER BASIN

461905112144201 CATARACT CREEK ABOVE UNCLE SAM GULCH, NEAR BASIN, MT

LOCATION.--Lat 46°19'05", long 112°14'42", in $SE^1/_4SE^1/_4NE^1/_4$ sec. 32, T.7 N., R.5 W., Jefferson County, Hydrologic Unit 10020006, 100 ft upstream from Uncle Sam Gulch and 3.4 mi northeast of Basin.

DRAINAGE AREA.--22.2 mi^2.

PERIOD OF RECORD.--October 1996 to present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
MAY 2000										
04...	0945	43	7.4	49	13.0	2.0	20	5.9	1.2	.8
JUN										
06...	1445	11	7.6	67	28.5	14.0	27	8.2	1.5	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
MAY 2000										
04...	.2	1.7	17	E.2	<.1	9.6	5.7	2	3	.2
JUN										
06...	--	--	--	--	--	--	--	2	3	E.1

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000										
04...	.2	8	8	<1	1	43	42	3	.35	61
JUN										
06...	.1	7	7	<1	<1	34	34	2	.06	50

E--Estimated.

BOULDER RIVER BASIN

461904112144401 UNCLE SAM GULCH AT MOUTH, NEAR BASIN, MT

LOCATION.--Lat 46°19'04", long 112°14'44", in $SE^1/_4SE^1/_4NE^1/_4$ 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 present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAY 2000											
04...	0850	4.5	7.0	75	21.5	1.5	26	7.7	1.6	.6	.2
JUN											
06...	1400	1.8	7.1	109	31.0	15.0	36	11	2.3	--	--

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)
MAY 2000											
04...	2.2	12	.3	<.1	12	19	52	.07	.63	3	52
JUN											
06...	--	--	--	--	--	--	--	--	--	1	32

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000											
04...	13	12	150	229	<1	14	1140	1160	10	.12	53
JUN											
06...	29	32	66	362	<1	8	1720	2310	6	.03	67

06031960 CATARACT CREEK AT BASIN, MT

LOCATION.--Lat 46°16'17", long 112°14'28", in $NE^1/_4NW^1/_4SW^1/_4$ 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 present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
NOV 1999										
16...	1210	1.9	7.8	141	10.0	2.0	63	19	3.7	1.0
JAN 2000										
20...	1230	3.8	7.6	142	-1.0	0.0	62	19	3.7	1.0
MAY										
02...	1245	48	7.3	55	16.0	7.0	21	6.5	1.3	.8
JUN										
06...	1245	13.2	7.6	80	26.0	14.0	32	9.8	1.9	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
NOV 1999										
16...	.2	3.4	50	.4	--	--	22	80	.11	.42
JAN 2000										
20...	.2	3.6	50	.5	--	--	21	79	.11	.80
MAY										
02...	.2	1.8	17	.3	<.1	9.6	7.5	38	.05	5.0
JUN										
06...	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
NOV 1999										
16...	6	E26	4	3	4	4	18	23	E8	41
JAN 2000										
20...	22	32	3	--	4	4	16	19	E9	36
MAY										
02...	--	--	2	10	2	2	32	40	--	--
JUN										
06...	--	--	3	5	3	3	29	34	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999									
16...	<1	<1	32	31	424	420	2	.01	58
JAN 2000									
20...	<1	<1	27	27	370	404	1	.01	64
MAY									
02...	<1	4	--	--	165	169	10	1.3	39
JUN									
06...	<1	<1	--	--	243	258	2	.07	33

E--Estimated.

BOULDER RIVER BASIN

06032300 HIGH ORE CREEK NEAR BASIN, MT

LOCATION.--Lat 46°15'53", long 112°12'10", in NE$^1/_4$NE$^1/_4$NE$^1/_4$ sec. 22, T.6 N., R.5 W., Jefferson County, Hydrologic Unit 10020006, at culvert, 0.1 mi upstream from the Boulder River, and 2.8 mi east of Basin.

DRAINAGE AREA.--8.86 mi^2.

PERIOD OF RECORD.--October 1996 to present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
JAN 2000										
20...	1315	.60	7.9	308	-1.0	0.0	150	40	11	1.6
JUN										
22...	0845	.53	8.4	328	15.0	10.0	150	41	12	2.2
JUL										
24...	1335	.33	8.7	342	27.1	20.5	150	41	12	2.2

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
JAN 2000										
20...	.2	5.5	92	1.4	--	--	64	180	.25	.29
JUN										
22...	.2	5.7	104	1.6	.2	18	64	207	.28	.30
JUL										
24...	.2	6.1	113	1.9	--	18	63	213	.29	.19

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
JAN 2000										
20...	7	88	22	--	3	3	2	6	<10	227
JUN										
22...	--	--	27	43	2	3	3	7	--	--
JUL										
24...	--	--	38	54	2	2	4	5	<10	136

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JAN 2000									
20...	<1	12	342	364	1120	1130	6	.01	71
JUN									
22...	<1	18	--	--	576	682	13	.02	86
JUL									
24...	--	--	36	72	286	342	4	<.01	68

BOULDER RIVER BASIN

06032400 BOULDER RIVER BELOW LITTLE GALENA GULCH, NEAR BASIN, MT

LOCATION.--Lat 46°14'58", long 112°10'27", in $NE^1/_4NE^1/_4NW^1/_4$ 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 present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
NOV 1999										
16...	1345	21	7.7	152	12.0	3.5	63	19	4.0	1.2
JAN 2000										
20...	1430	29	7.7	158	-2.0	0.0	63	18	4.1	1.4
MAY										
02...	1420	197	7.5	71	17.5	9.5	26	7.7	1.6	1.1
JUN										
07...	1030	80	7.9	88	25.5	13.5	32	9.6	2.0	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
NOV 1999										
16...	.4	6.6	52	2.0	--	--	20	84	.11	4.88
JAN 2000										
20...	.4	7.2	57	1.6	--	--	20	87	.12	6.79
MAY										
02...	.3	3.4	24	.8	<.1	14	8	51	.07	27.3
JUN										
07...	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
NOV 1999										
16...	5	64	5	7	.6	.8	6	10	58	235
JAN 2000										
20...	12	55	4	--	.8	.9	6	8	42	192
MAY										
02...	--	--	4	10	.4	.7	12	17	--	--
JUN										
07...	--	--	5	7	.4	.5	9	11	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999									
16...	<1	2	12	26	101	131	5	.29	79
JAN 2000									
20...	<1	1	14	23	132	148	2	.16	93
MAY									
02...	<1	5	--	--	59	79	14	7.4	72
JUN									
07...	<1	1	--	--	62	72	6	1.3	81

BOULDER RIVER BASIN

06033000 BOULDER RIVER NEAR BOULDER, MT

LOCATION.--Lat 46°12'40", long 112°05'27", in $SE^1/_4NE^1/_4SW^1/_4$ 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 of 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 above sea level, by barometer. Prior to Aug. 29, 1946, nonrecording gage at present site and datum.

REMARKS.--Records good. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	27	35	27	26	33	37	161	163	21	8.9	6.4
2	21	19	30	27	27	30	42	219	142	32	8.5	6.8
3	21	27	28	27	30	33	33	241	121	39	8.6	7.2
4	21	28	18	27	30	35	49	231	107	87	9.1	7.1
5	23	28	16	27	31	38	69	224	98	57	9.3	7.1
6	23	29	25	27	31	38	99	210	90	47	8.9	6.8
7	20	29	31	28	32	36	95	182	72	42	8.6	7.1
8	19	30	28	28	32	36	70	165	64	37	8.7	6.8
9	21	29	26	28	33	34	73	165	62	31	8.7	6.4
10	21	29	27	29	31	31	94	168	66	23	8.2	6.4
11	21	28	27	28	31	33	96	160	68	21	8.2	6.7
12	21	28	28	28	31	30	99	145	68	20	7.6	6.4
13	21	28	29	28	31	35	132	131	80	19	8.5	6.7
14	20	27	27	28	31	34	147	123	74	17	8.1	7.5
15	18	24	29	28	31	30	132	123	78	17	7.7	6.5
16	18	28	30	29	31	30	113	132	100	17	7.4	6.6
17	19	29	31	29	30	36	125	209	89	17	7.3	6.8
18	20	30	30	28	30	32	150	209	79	15	7.1	7.1
19	20	25	30	28	30	33	159	198	63	17	7.1	7.2
20	21	33	30	29	30	29	171	190	64	16	6.9	7.1
21	22	29	31	29	31	28	177	189	60	14	7.2	7.7
22	22	28	30	29	32	35	197	194	51	13	7.5	7.7
23	22	19	28	29	33	37	227	195	47	12	7.4	8.5
24	22	21	27	29	33	32	183	188	42	11	7.3	8.8
25	23	34	28	30	32	36	146	166	39	11	7.5	10
26	22	43	27	30	29	41	137	154	35	11	7.3	10
27	22	35	28	31	32	36	133	143	25	11	7.3	12
28	23	30	28	30	32	43	166	154	22	11	7.1	11
29	27	29	28	29	33	33	175	155	21	9.6	7.1	11
30	29	35	28	28	---	35	148	157	21	9.1	6.8	11
31	28	---	28	27	---	32	---	175	---	8.7	6.7	---
TOTAL	673	858	866	879	896	1054	3674	5456	2111	713.4	242.6	234.4
MEAN	21.7	28.6	27.9	28.4	30.9	34.0	122	176	70.4	23.0	7.83	7.81
MAX	29	43	35	31	33	43	227	241	163	87	9.3	12
MIN	18	19	16	27	26	28	33	123	21	8.7	6.7	6.4
AC-FT	1330	1700	1720	1740	1780	2090	7290	10820	4190	1420	481	465

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2000, BY WATER YEAR (WY)*

MEAN	37.3	35.4	29.0	26.7	31.1	48.7	169	467	411	96.7	31.7	29.1
MAX	113	71.2	53.0	42.1	68.5	121	511	961	1027	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

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1929 - 2000*	
ANNUAL TOTAL	34540		17657.4			
ANNUAL MEAN	94.6		48.2		118	
HIGHEST ANNUAL MEAN					211	1965
LOWEST ANNUAL MEAN					48.2	2000
HIGHEST DAILY MEAN	812	Jun 3	241	May 3	2400	May 22 1948
LOWEST DAILY MEAN	15	Sep 19	6.4	Sep 1	.00	Jul 15 1931
ANNUAL SEVEN-DAY MINIMUM	16	Sep 18	6.6	Sep 7	1.0	Jan 21 1930
INSTANTANEOUS PEAK FLOW			267	May 3	3490	Jun 9 1964
INSTANTANEOUS PEAK STAGE			6.14	May 3	10.90	Jun 9 1964
INSTANTANEOUS LOW FLOW			a6.1	Aug 31	.00	Jul 15 1931
ANNUAL RUNOFF (AC-FT)	68510		35020		85640	
10 PERCENT EXCEEDS	226		147		344	
50 PERCENT EXCEEDS	36		29		37	
90 PERCENT EXCEEDS	19		7.6		15	

*--During periods of operation (May 1929 to December 1932, March 1934 to September 1972, October 1984 to current year).
a--Gage height, 4.66 ft.

WILLOW CREEK BASIN

06035000 WILLOW CREEK NEAR HARRISON, MT

LOCATION.--Lat 46°43'23", long 111°44'25", in $SE^1/_4SW^1/_4NW^1/_4$ 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.

PERIOD OF RECORD.--April 1938 to September 1982, October 1982 to current year (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 above sea level, from topographic map. Prior to Oct. 8, 1946, water-stage recorder at datum 0.22 ft higher, with different concrete control.

REMARKS.--Seasonal records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 12,500 acres of which 3,500 acres is in Norwegian Creek drainage. Several observations of water temperature and specific conductance were obtained during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				24	12	32	28	1.7	3.6	e14		
2				26	8.4	24	32	1.7	3.9	e15		
3				24	7.8	20	35	1.6	5.1	15		
4				30	11	18	38	2.0	5.9	13		
5				30	14	26	31	2.2	6.7	12		
6				29	17	37	26	1.9	5.9	10		
7				25	13	55	20	2.2	5.3	9.0		
8				25	11	66	18	2.3	5.2	9.1		
9				25	11	60	17	2.1	5.3	8.8		
10				25	14	52	15	2.0	6.5	8.6		
11				26	20	53	10	2.4	8.5	8.8		
12				25	21	47	8.8	2.8	9.5	13		
13				27	16	71	8.0	2.8	7.9	14		
14				31	16	53	7.1	2.7	5.7	14		
15				29	14	57	6.2	2.8	5.9	13		
16				28	9.1	65	6.0	2.9	e6.0	13		
17				30	58	57	5.9	3.0	e6.0	12		
18				29	41	47	5.6	2.6	e6.5	13		
19				29	27	57	5.4	2.8	e7.0	13		
20				23	19	56	4.4	2.9	e7.0	17		
21				16	11	42	2.9	2.6	e7.5	20		
22				17	12	38	2.6	2.5	e8.0	22		
23				31	13	41	2.5	2.1	e8.5	17		
24				25	24	40	2.1	1.9	e9.0	17		
25				20	27	40	2.4	3.0	e10	14		
26				20	31	37	3.7	3.2	e10	14		
27				20	23	34	2.9	2.6	e11	13		
28				14	36	33	3.0	2.5	e12	13		
29				16	51	33	2.2	2.7	e13	12		
30				13	45	30	1.8	2.9	e14	16		
31				---	34	---	1.6	3.5	---	20		
TOTAL				732	667.3	1321	355.1	76.9	226.4	423.3		
MEAN				24.4	21.5	44.0	11.5	2.48	7.55	13.7		
MAX				31	58	71	38	3.5	14	22		
MIN				13	7.8	18	1.6	1.6	3.6	8.6		
AC-FT				1450	1320	2620	704	153	449	840		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1982, AND SEASONS 1983 - 2000*

MEAN	24.7	27.4	31.7	42.1	63.9	114	62.3	12.5	19.3	29.8	33.7	29.9
MAX	43.6	60.9	44.7	72.5	167	300	278	61.0	62.4	80.1	56.5	47.4
(WY)	1976	1963	1974	1996	1984	1995	1975	1993	1965	1983	1947	1948
MIN	10.0	12.0	18.0	11.1	11.8	10.1	1.52	1.12	2.01	2.01	9.40	11.5
(WY)	1940	1940	1940	1961	1955	1966	1988	1988	1956	1989	1955	1955

SUMMARY STATISTICS	FOR 2000 SEASON		WATER YEARS 1938 - 1982*		SEASONS 1983-2000*	
ANNUAL MEAN			40.7			
HIGHEST ANNUAL MEAN			76.0	1975		
LOWEST ANNUAL MEAN			19.2	1954		
HIGHEST DAILY MEAN	71	Jun 13	591	Jun 27 1944	423	Jun 6 1995
LOWEST DAILY MEAN	1.6	Jul 31	1.6	Sep 16 1956	.59	Jul 23 1988
ANNUAL SEVEN-DAY MINIMUM			1.6	Sep 16 1956		
INSTANTANEOUS PEAK FLOW	a84	Jun 13	813	Feb 3 1963	448	Jun 6 1995
INSTANTANEOUS PEAK STAGE	b2.48	Oct 1	4.24	Feb 3 1963	3.38	Jun 6 1995
INSTANTANEOUS LOW FLOW	c1.5	Jul 30	d1.4	Sep 17 1956	f.32	Jul 21 1988
ANNUAL RUNOFF (AC-FT)			29480			
10 PERCENT EXCEEDS			90			
50 PERCENT EXCEEDS			30			
90 PERCENT EXCEEDS			6.9			

*--During period of operation (1938 to current year, seasonal records beginning 1983).
a--Gage height, 1.34 ft.
b--Backwater from beaver dam.
c--Gage height, 0.33 ft.
d--Gage height, 0.39 ft.
e--Estimated.
f--Gage height, 0.26 ft.

JEFFERSON RIVER BASIN

06036650 JEFFERSON RIVER NEAR THREE FORKS, MT

LOCATION.--Lat 45°53'52", long 111°35'45", in $SW^1/_4SW^1/_4NW^1/_4$ 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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.
GAGE.--Water-stage recorder. Datum of gage is 4,076.76 ft above sea level.
REMARKS.--Water-discharge records good . 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1110	1490	1580	1370	e1200	1320	1330	1580	2920	901	138	182
2	1140	1500	1600	1410	e1300	1300	1310	1510	2740	890	127	199
3	1240	1510	1590	1340	1490	1290	1330	1400	2390	935	120	214
4	1270	1470	1490	1300	1390	1290	1360	1390	2070	1090	122	225
5	1260	1520	1400	1360	1350	1290	1340	1480	1830	1260	135	254
6	1250	1620	1350	1370	1310	1300	1450	1640	1700	1140	132	266
7	1230	1620	1450	1350	1300	1310	1700	1770	1650	1020	146	262
8	1200	1640	1440	1430	1310	1350	1940	1740	1640	905	166	252
9	1180	1650	1410	1430	1320	1340	1840	1620	1660	746	177	256
10	1210	1640	1380	1460	1330	1320	1780	1550	1720	617	186	274
11	1250	1610	1430	1430	1300	1310	1910	1560	1730	567	199	301
12	1270	1580	1460	1280	1300	1300	2070	1620	1680	529	202	336
13	1310	1570	1450	1180	1350	1270	2110	1630	1700	463	218	366
14	1310	1540	e1500	1330	1320	1270	2360	1560	1730	412	223	370
15	1310	1550	e1400	1610	1330	1270	2490	1470	1810	380	200	365
16	1320	1550	e1450	1560	1330	1260	2470	1360	1790	344	194	360
17	1380	1550	1440	1440	1290	1270	2270	1360	1800	330	196	347
18	1440	1570	1440	1340	1260	1270	2070	1470	1730	325	191	344
19	1510	1560	1420	1360	1200	1260	2010	1660	1680	318	191	347
20	1480	1560	1500	1400	1210	1250	1930	1590	1690	293	207	341
21	1460	1510	1450	1420	1290	1230	1950	1580	1650	244	226	393
22	1430	1500	1430	1340	1300	1200	1940	1580	1570	228	235	441
23	1420	1390	1460	1320	1330	1220	2040	1640	1550	215	228	541
24	1430	1320	1470	1270	1350	1230	2140	1750	1550	204	215	613
25	1420	1380	1360	1310	1350	1230	2110	1840	1500	197	228	636
26	1410	1430	1280	1280	1310	1230	1920	1940	1360	205	220	674
27	1440	1560	1270	1260	1280	1240	1710	2070	1250	194	215	663
28	1490	1640	1260	1250	1320	1270	1550	2220	1140	169	212	644
29	1490	1590	1290	1250	1320	1330	1490	2430	1050	158	200	648
30	1480	1560	1340	1130	---	1400	1550	2790	945	149	197	656
31	1510	---	1320	e1000	---	1360	---	2940	---	148	186	---
TOTAL	41650	46180	44110	41580	38040	39780	55470	53740	51225	15576	5832	11770
MEAN	1344	1539	1423	1341	1312	1283	1849	1734	1708	502	188	392
MAX	1510	1650	1600	1610	1490	1400	2490	2940	2920	1260	235	674
MIN	1110	1320	1260	1000	1200	1200	1310	1360	945	148	120	182
AC-FT	82610	91600	87490	82470	75450	78900	110000	106600	101600	30890	11570	23350

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2000, BY WATER YEAR (WY)

MEAN	1664	1696	1393	1265	1354	1604	2480	3999	5324	2216	982	1222
MAX	3163	2805	1993	1929	1964	2295	4444	7679	11420	5505	3030	3303
(WY)	1985	1984	1999	1983	1984	1996	1996	1997	1997	1995	1984	1984
MIN	803	1039	805	727	811	989	1371	990	988	352	59.1	262
(WY)	1989	1989	1993	1993	1989	1991	1992	1992	1992	1988	1988	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1978 - 2000	
ANNUAL TOTAL	811091		444953			
ANNUAL MEAN	2222		1216		2099	
HIGHEST ANNUAL MEAN					3650	1984
LOWEST ANNUAL MEAN					996	1992
HIGHEST DAILY MEAN	10700	Jun 1	2940	May 31	16800	Jun 9 1995
LOWEST DAILY MEAN	597	Aug 2	120	Aug 3	44	Aug 19 1988
ANNUAL SEVEN-DAY MINIMUM	624	Jul 30	131	Aug 1	48	Aug 19 1988
INSTANTANEOUS PEAK FLOW			a3060	May 31	d17000	Jun 9 1995
INSTANTANEOUS PEAK STAGE			b6.08	Feb 2	f9.88	Jan 3 1997
INSTANTANEOUS LOW FLOW			c117	Aug 2	g43	Aug 19 1988
ANNUAL RUNOFF (AC-FT)	1609000		882600		1521000	
10 PERCENT EXCEEDS	4260		1740		4090	
50 PERCENT EXCEEDS	1510		1330		1550	
90 PERCENT EXCEEDS	863		217		662	

a--Gage height, 4.76 ft.
b--Backwater from ice.
c--Gage height, 1.74 ft.
d--Gage height, 9.00 ft.
e--Estimated.
f--Backwater from ice.
g--Gage height, 1.31 ft.

06036650 JEFFERSON RIVER NEAR THREE FORKS, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1980-81, 1986, 1987, May 1999 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: June 1980 to September 1981, October 1999 to September 2000.
INSTRUMENTATION.--Temperature recorder since October 1999.
REMARKS--Missing temperature records complete for Oct. 16-19 due to equipment problems. Unpublished records of instantaneous specific conductance and temperature data are available in files of the District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 27.0°C, July 31, 2000; minimum, 0.0°C, on many days during winter period.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 27.0°C, July 31; minimum, 0.0°C, many days November through February.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
03...	1245	1530	8.6	493	17.5	5.0	.003
MAR 2000							
21...	0745	1240	8.4	473	4.5	3.5	.002
MAY							
30...	1440	2800	8.3	261	23.0	15.0	<.001
AUG							
08...	1410	167	8.3	495	29.0	22.0	<.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
03...	.219	.29	<.001	.018	23	95	80
MAR 2000							
21...	.240	.35	.005	.040	25	84	85
MAY							
30...	<.005	.73	.010	.119	75	567	82
AUG							
08...	<.005	.37	<.001	.018	4	1.8	80

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999											
03...	1245	220	59	19	4.1	.5	19	185	11	.4	19
MAY 2000											
30...	1440	100	28	8.5	2.8	.4	9.9	97	4.2	.2	15

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
03...	65	307	.42	1270	4	<.1	<1	E1	<1	<2	<31
MAY 2000											
30...	27	153	.21	1160	3	<.1	2	4	2	2	11

E--Estimated.

JEFFERSON RIVER BASIN

06036650 JEFFERSON RIVER NEAR THREE FORKS, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.0	9.0	10.0	6.5	5.0	5.5	3.5	3.0	3.5	.0	.0	.0
2	9.5	7.5	8.5	5.0	3.5	4.0	3.0	2.0	2.5	.0	.0	.0
3	9.0	6.0	7.5	5.5	3.5	4.5	2.0	.5	1.5	.0	.0	.0
4	10.5	7.0	8.5	6.5	5.0	6.0	.5	.0	.0	.0	.0	.0
5	10.5	8.0	9.5	6.0	5.0	5.5	.0	.0	.0	.0	.0	.0
6	10.5	9.0	10.0	7.5	5.5	6.5	.0	.0	.0	.0	.0	.0
7	11.0	9.0	10.0	7.0	6.5	7.0	.5	.0	.0	.0	.0	.0
8	12.0	10.0	11.0	7.5	5.5	6.5	.0	.0	.0	.0	.0	.0
9	12.5	10.5	11.5	7.5	6.0	6.5	.0	.0	.0	.0	.0	.0
10	11.5	9.0	10.5	6.0	5.5	6.0	.0	.0	.0	.0	.0	.0
11	11.0	9.5	10.0	7.0	5.5	6.0	.0	.0	.0	.0	.0	.0
12	11.0	9.5	10.5	8.0	6.0	7.0	.5	.0	.0	.0	.0	.0
13	12.0	9.0	10.5	8.0	6.5	7.5	.5	.0	.0	.0	.0	.0
14	12.5	11.0	11.5	7.0	6.0	6.5	.0	.0	.0	.0	.0	.0
15	11.0	8.0	9.0	6.0	4.5	5.5	.0	.0	.0	.0	.0	.0
16	---	6.5	---	6.0	4.5	5.0	1.0	.0	.5	.5	.0	.0
17	---	---	---	5.5	4.0	5.0	1.5	.5	1.0	.5	.0	.0
18	---	---	---	5.0	4.0	5.0	1.5	.5	1.0	.0	.0	.0
19	8.0	---	---	4.0	3.0	3.5	.5	.0	.0	.0	.0	.0
20	8.0	5.5	7.0	4.5	3.0	4.0	.5	.0	.0	.0	.0	.0
21	9.0	6.5	7.5	3.5	2.5	3.0	1.0	.0	.5	.5	.0	.0
22	9.0	6.5	7.5	2.5	.5	1.5	1.0	.0	.5	.5	.0	.5
23	8.0	6.5	7.0	.5	.0	.0	.0	.0	.0	1.0	.0	.5
24	7.5	6.0	7.0	.5	.0	.0	.0	.0	.0	1.0	.5	.5
25	8.0	6.5	7.0	3.0	.0	1.5	.0	.0	.0	.5	.0	.0
26	9.0	6.5	8.0	4.5	3.0	3.5	.0	.0	.0	1.0	.0	.5
27	9.5	8.0	8.5	3.5	2.5	3.0	.0	.0	.0	.5	.0	.5
28	9.0	8.0	8.5	3.0	1.5	2.0	.0	.0	.0	1.0	.0	.5
29	8.5	7.0	8.0	2.0	1.0	1.5	.0	.0	.0	.0	.0	.0
30	8.5	6.5	7.5	4.0	2.0	3.0	.0	.0	.0	.0	.0	.0
31	8.0	6.5	7.0	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	---	---	---	8.0	0.0	4.5	3.5	0.0	0.5	1.0	0.0	0.0
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	6.5	4.5	5.5	7.5	6.5	7.0	16.5	12.0	14.0
2	.5	.0	.0	6.5	4.0	5.0	7.0	6.0	6.5	15.5	14.0	14.5
3	1.5	.0	.5	7.0	4.0	5.5	8.5	4.5	6.5	16.5	13.0	14.5
4	.5	.0	.0	7.5	4.5	6.0	11.0	6.5	8.5	16.0	14.0	14.5
5	.0	.0	.0	7.0	5.5	6.0	11.0	8.0	9.5	14.0	12.5	13.5
6	2.0	.0	1.0	7.5	4.5	6.0	10.5	7.0	8.5	13.5	11.5	12.0
7	3.0	1.0	2.0	7.0	5.0	6.0	9.5	5.5	7.5	14.0	11.5	12.5
8	3.5	1.5	3.0	6.0	3.5	5.0	10.5	7.0	8.5	14.5	11.5	13.0
9	4.5	3.0	4.0	5.5	4.0	4.5	10.0	8.0	9.0	13.5	12.0	13.0
10	4.0	2.0	3.0	5.5	3.0	4.0	11.5	8.5	9.5	13.0	10.5	12.0
11	2.0	.5	1.5	5.0	3.5	4.5	11.5	8.5	10.0	11.5	9.5	10.5
12	1.0	.0	.5	6.0	3.0	4.5	11.0	9.5	10.5	11.5	8.5	9.5
13	1.5	.0	.5	6.5	4.0	5.5	11.0	8.0	9.5	13.0	9.5	11.0
14	2.0	.5	1.0	6.5	4.0	5.0	8.0	6.5	7.5	14.5	11.5	12.5
15	3.0	1.0	2.0	6.5	4.0	5.0	10.0	7.0	8.0	16.0	12.0	14.0
16	3.5	2.0	2.5	6.0	4.0	5.0	11.0	9.0	10.0	15.0	13.5	14.0
17	3.0	1.0	2.0	5.5	4.5	5.0	11.5	9.5	10.5	13.5	12.5	13.0
18	2.5	.0	1.0	6.0	3.0	4.5	13.0	10.5	11.5	16.0	11.0	13.5
19	2.0	.0	1.0	5.0	3.5	4.5	13.0	10.0	11.5	15.5	13.5	14.5
20	2.0	.0	1.0	5.5	3.5	4.5	14.0	11.5	12.5	17.0	12.5	15.0
21	4.5	1.5	3.0	6.5	3.0	4.5	15.5	12.0	13.5	16.5	15.0	15.5
22	5.5	2.5	4.0	7.5	3.5	5.5	15.0	13.0	14.0	17.0	14.0	15.5
23	5.5	3.5	4.5	6.5	5.0	6.0	14.5	12.5	13.5	18.5	15.0	16.0
24	4.5	3.0	4.0	7.0	3.5	5.5	13.0	11.5	12.0	17.5	14.5	16.0
25	4.0	2.5	3.0	7.5	4.0	6.0	11.5	10.0	10.5	19.0	15.5	17.0
26	4.0	1.5	2.5	9.5	6.0	8.0	13.0	9.5	11.0	18.0	16.5	17.0
27	4.0	2.0	3.0	11.0	6.5	9.0	14.5	10.5	12.5	17.0	14.5	16.0
28	5.5	3.0	4.0	9.5	8.0	9.0	14.5	12.0	13.5	17.0	14.5	16.0
29	6.0	3.5	5.0	8.0	6.5	7.0	13.0	10.5	12.0	16.0	14.0	15.0
30	---	---	---	7.5	5.0	6.5	14.0	9.5	12.0	16.0	13.0	14.5
31	---	---	---	8.5	5.5	7.0	---	---	---	14.0	12.5	13.5
MONTH	6.0	0.0	2.0	11.0	3.0	5.5	15.5	4.5	10.0	19.0	8.5	14.0

JEFFERSON RIVER BASIN

06036650 JEFFERSON RIVER NEAR THREE FORKS, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.0	11.0	13.0	22.5	19.5	21.0	26.5	21.0	23.5	17.0	15.0	16.0
2	17.5	13.0	15.0	21.5	18.5	20.0	26.5	21.0	23.5	17.5	14.5	16.0
3	19.0	15.5	17.5	21.0	18.5	19.5	24.5	19.5	22.0	17.5	13.5	15.5
4	20.0	16.5	18.0	21.5	18.0	19.5	22.0	19.5	20.5	19.5	14.5	16.5
5	20.5	17.0	19.0	21.5	17.0	19.0	23.5	18.5	21.0	20.0	15.0	17.0
6	21.0	18.0	19.5	21.5	18.0	19.5	25.0	18.5	21.5	18.0	15.5	16.5
7	22.0	18.5	20.0	22.0	17.0	19.5	24.0	19.0	21.5	18.0	13.5	15.5
8	21.5	18.5	20.0	23.5	18.5	21.0	23.5	18.5	21.0	16.5	14.0	15.0
9	19.0	17.0	18.0	23.5	19.5	21.5	23.5	18.5	21.0	15.0	12.0	13.5
10	18.5	16.0	17.0	23.5	19.5	21.5	22.5	19.5	21.0	14.0	12.5	13.5
11	18.5	15.0	16.5	23.0	18.5	21.0	23.5	19.0	21.0	16.0	12.0	14.0
12	17.0	15.0	16.0	23.5	19.5	21.5	23.5	19.0	21.0	17.5	13.5	15.5
13	16.0	14.0	14.5	24.5	20.5	22.5	23.5	18.5	21.0	19.0	15.0	17.0
14	16.5	15.5	16.0	24.5	20.5	22.5	23.0	18.0	20.0	19.5	16.0	17.5
15	15.5	14.0	15.0	24.0	20.5	22.0	24.0	17.5	20.5	20.0	16.5	18.5
16	17.0	14.0	15.5	25.0	19.5	22.5	22.5	18.0	20.0	19.5	16.5	18.0
17	18.5	14.0	16.5	22.5	20.5	21.5	22.5	17.0	19.5	19.5	16.5	18.0
18	19.5	16.0	17.5	23.0	20.0	21.0	20.5	17.5	19.0	18.0	16.0	17.0
19	18.0	16.5	17.0	22.0	19.0	20.5	21.0	16.0	18.0	16.5	14.0	15.0
20	18.0	15.0	16.5	23.0	19.0	21.0	20.5	16.5	18.5	14.0	12.0	13.0
21	20.5	15.5	18.0	24.5	18.5	21.5	20.5	15.5	17.5	12.5	7.0	10.5
22	19.5	17.5	18.5	25.5	19.5	22.5	21.0	15.5	18.0	7.0	5.5	6.0
23	21.0	16.5	18.5	25.0	20.0	22.5	22.5	17.0	19.5	7.5	5.0	6.0
24	21.0	17.5	19.5	24.5	19.0	21.5	22.5	19.0	20.5	9.0	4.5	6.5
25	21.5	17.5	19.5	25.0	18.5	21.5	23.0	17.5	20.0	11.0	6.5	9.0
26	21.0	17.5	19.0	25.0	20.0	22.0	21.5	18.5	20.0	12.5	8.5	10.5
27	21.5	17.0	19.5	25.0	19.5	22.5	20.5	16.5	18.5	13.0	9.5	11.5
28	22.5	17.5	20.0	26.0	19.5	22.5	21.0	15.5	18.0	13.5	10.0	11.5
29	22.5	18.5	20.5	26.5	20.5	23.5	20.5	16.0	18.0	13.0	11.0	12.0
30	23.5	19.0	21.5	27.0	20.5	23.5	19.5	16.0	17.5	13.0	11.5	12.0
31	---	---	---	27.0	21.5	24.0	19.5	15.0	17.0	---	---	---
MONTH	23.5	11.0	18.0	27.0	17.0	21.5	26.5	15.0	20.0	20.0	4.5	14.0

MADISON RIVER BASIN

06037500 MADISON RIVER NEAR WEST YELLOWSTONE, MT

LOCATION.--Lat 44°39'25", long 111°04'03", in $NE^1/_4NW^1/_4SW^1/_4$ sec.36, T.13 S., R.5 E., Gallatin County, Hydrologic Unit 10020007, Yellowstone National Park, on left bank 0.7 mi downstream of 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.

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 above sea level, from topographic map. 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 datums. U. S. Geological Survey satellite telemeter at station. Supplementary nonrecording gage at site 0.3 mi downstream at different datum used at time during 1927-30.

REMARKS.--Records good. No regulation or diversions upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	520	508	511	501	473	480	462	822	883	506	430	448
2	520	498	514	502	476	476	464	925	820	502	438	480
3	519	504	517	490	476	473	451	1010	797	496	435	448
4	518	502	485	491	467	478	466	1100	778	489	444	433
5	514	508	486	499	475	482	539	1060	753	491	481	424
6	519	502	493	492	476	494	542	1030	722	485	472	423
7	520	502	507	493	472	486	502	1000	690	480	442	436
8	511	502	501	499	472	493	493	1030	674	467	433	424
9	513	508	502	501	487	487	524	1000	673	461	430	416
10	511	511	502	481	483	480	517	988	663	461	441	412
11	511	511	502	515	479	477	544	839	651	471	448	417
12	511	511	502	498	492	464	576	769	642	461	425	420
13	503	502	529	505	495	470	608	724	885	459	425	417
14	502	502	502	520	504	470	696	694	705	450	417	416
15	502	498	492	520	497	468	654	699	653	445	415	416
16	502	496	520	520	490	457	643	735	634	441	416	416
17	501	496	520	515	488	481	642	938	613	454	416	425
18	513	501	520	499	474	471	643	934	593	484	421	432
19	505	493	520	517	473	481	660	891	617	501	437	430
20	505	502	520	511	468	470	694	932	700	482	419	430
21	502	503	520	511	482	456	732	968	624	467	417	433
22	502	499	519	507	489	467	789	1020	582	458	414	447
23	502	489	503	500	489	482	925	1070	566	445	409	449
24	502	485	495	502	492	471	851	997	555	438	411	446
25	502	495	497	502	500	459	741	1100	539	439	413	447
26	502	516	494	503	483	470	744	1350	531	438	413	441
27	508	528	493	499	488	477	712	1290	535	439	438	438
28	536	520	493	489	496	515	805	1190	535	433	417	433
29	559	515	493	470	485	491	982	1270	520	433	409	433
30	524	511	487	478	---	468	831	1060	519	433	412	426
31	516	---	489	476	---	459	---	979	---	433	424	---
TOTAL	15875	15118	15628	15506	14021	14753	19432	30414	19652	14342	13262	12956
MEAN	512	504	504	500	483	476	648	981	655	463	428	432
MAX	559	528	529	520	504	515	982	1350	885	506	481	480
MIN	501	485	485	470	467	456	451	694	519	433	409	412
AC-FT	31490	29990	31000	30760	27810	29260	38540	60330	38980	28450	26310	25700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2000, BY WATER YEAR (WY)*

MEAN	434	425	417	405	399	406	497	856	823	503	435	429
MAX	710	697	641	586	572	539	671	1725	1479	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

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1913 - 2000*	
ANNUAL TOTAL	235398		200959			
ANNUAL MEAN	645		549		501	
HIGHEST ANNUAL MEAN					789	1997
LOWEST ANNUAL MEAN					337	1934
HIGHEST DAILY MEAN	2110	May 30	1350	May 26	2750	May 18 1996
LOWEST DAILY MEAN	463	Jan 3	409	Aug 23	245	Jan 1 1942
ANNUAL SEVEN-DAY MINIMUM	473	Jan 1	414	Aug 20	267	Aug 6 1931
INSTANTANEOUS PEAK FLOW			1500	May 26	b2820	May 18 1996
INSTANTANEOUS PEAK STAGE			2.84	May 26	c10.00	Jan 8 1937
INSTANTANEOUS LOW FLOW			a408	Aug 15	d100	Feb 7 1933
ANNUAL RUNOFF (AC-FT)	466900		398600		363100	
10 PERCENT EXCEEDS	1040		781		750	
50 PERCENT EXCEEDS	515		499		434	
90 PERCENT EXCEEDS	485		433		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, 1.81 ft.
b--Gage height, 3.78 ft.
c--About, backwater from ice.
d--Result of freezeup.

MADISON RIVER BASIN

06038500 MADISON RIVER BELOW HEBGEN LAKE, NEAR GRAYLING, MT

LOCATION.--Lat 44°52'00", long 111°20'15", $NE^1/_4NE^1/_4NE^1/_4$ 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.

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. Datum of gage is 6,448.47 ft above sea level (after 1959 earthquake). Prior to July 13, 1943, nonrecording gage in stilling well.

REMARKS.--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. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--91 years, 1,025 ft^3/s, 15.38 in/yr, 742,600 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, 1,750 ft^3/s, May 26, gage height, 2.36 ft; minimum daily, 936 ft^3/s, July 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1110	1220	1210	1200	1180	1170	1210	1200	1700	997	1220	938
2	1110	1220	1210	1200	1190	1170	1210	1200	1700	982	1220	938
3	1110	1220	1210	1200	1190	1210	1210	1200	1700	975	1130	938
4	1110	1220	1210	1200	1190	1250	1210	1200	1700	964	1050	938
5	1110	1220	1210	1200	1190	1250	1210	1190	1610	958	1050	938
6	1110	1220	1210	1200	1190	1250	1210	1190	1500	958	1040	971
7	1110	1220	1210	1200	1190	1250	1210	1190	1490	958	1030	1090
8	1110	1220	1210	1200	1190	1240	1210	1200	1400	956	1020	1140
9	1110	1220	1210	1200	1190	1240	1210	1200	1330	954	1010	1140
10	1110	1220	1210	1200	1190	1240	1210	1200	1330	949	996	1140
11	1110	1220	1210	1200	1180	1240	1210	1200	1330	948	989	1140
12	1110	1220	1210	1200	1180	1240	1200	1200	1320	948	979	1140
13	1100	1220	1210	1190	1180	1240	1200	1210	1320	948	978	1140
14	1170	1220	1210	1190	1180	1240	1200	1210	1320	947	966	1140
15	1230	1220	1210	1190	1180	1240	1200	1210	1310	944	949	1140
16	1230	1220	1210	1190	1180	1230	1200	1210	1300	941	948	1140
17	1230	1220	1210	1190	1180	1240	1200	1280	1280	943	948	1130
18	1230	1220	1200	1190	1180	1230	1200	1420	1270	938	941	1130
19	1230	1220	1210	1190	1170	1230	1210	1550	1250	936	938	1130
20	1230	1220	1200	1190	1170	1230	1200	1610	1180	1000	938	1120
21	1220	1220	1200	1190	1170	1230	1210	1610	1080	1140	938	1120
22	1220	1220	1200	1190	1170	1230	1210	1610	1070	1160	938	1120
23	1220	1220	1200	1190	1170	1230	1210	1610	1060	1160	938	1120
24	1220	1210	1200	1190	1170	1230	1210	1610	1050	1140	938	1120
25	1220	1210	1200	1190	1170	1220	1210	1610	1040	1130	938	1120
26	1220	1210	1200	1180	1170	1220	1210	1680	1030	1120	938	1120
27	1220	1210	1200	1180	1170	1220	1200	1740	1020	1120	938	1120
28	1220	1210	1200	1180	1170	1220	1200	1730	1020	1190	938	1120
29	1220	1210	1200	1180	1170	1220	1200	1730	1020	1240	938	1110
30	1220	1210	1200	1180	---	1220	1200	1720	1000	1230	938	1110
31	1220	---	1200	1180	---	1220	---	1710	---	1230	938	---
TOTAL	36390	36530	37380	36950	34200	38090	36180	43430	38730	32004	30658	32701
MEAN	1174	1218	1206	1192	1179	1229	1206	1401	1291	1032	989	1090
MAX	1230	1220	1210	1200	1190	1250	1210	1740	1700	1240	1220	1140
MIN	1100	1210	1200	1180	1170	1170	1200	1190	1000	936	938	938
AC-FT	72180	72460	74140	73290	67840	75550	71760	86140	76820	63480	60810	64860
ADJUSTED FOR CHANGE IN CONTENTS IN HEBGEN LAKE												
MEAN †	1044	1031	931	1026	1117	970	1223	2211	1471	907	826	826
CFSM †	1.15	1.14	1.03	1.13	1.23	1.07	1.35	2.44	1.63	1.00	0.91	0.91
IN †	1.33	1.27	1.19	1.31	1.33	1.24	1.51	2.82	1.81	1.16	1.05	1.02
AC-FT†	64180	61360	57240	63090	64240	59650	72760	135940	87520	55780	50810	49160

OBSERVED

CAL YR	1999	TOTAL	498084	MEAN	1365	MAX	2410	MIN	872	AC-FT	987900	
WTR YR	2000	TOTAL	433243	MEAN	1184	MAX	1740	MIN	936	AC-FT	859300	

ADJUSTED

CAL YR	1999	TOTAL	499521	MEAN	1369	CFSM	1.51	IN	20.53	AC-FT	990800	
WTR YR	2000	TOTAL	414283	MEAN	1132	CFSM	1.25	IN	17.02	AC-FT	821400	

†--Adjusted for change in contents in Hebgen Lake.

MADISON RIVER BASIN

06038800 MADISON RIVER AT KIRBY RANCH, NEAR CAMERON, MT

LOCATION.--Lat 44°53'22", long 111°34'46", in $NE^1/_4NE^1/_4SE^1/_4$ 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.
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 above sea level, from topographic map. Aug. 31, 1959, to Oct. 2, 1959, nonrecording gage 75 ft downstream at datum 0.96 ft. lower. Oct. 3, 1959 to September 1963, water-stage recorder at present site and datum. May 1978 to September 1994, nonrecording gage 75 ft downstream at present datum.
REMARKS.--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. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1140	1260	1260	1250	1230	1230	1270	1370	2250	1180	1340	1040
2	1130	1250	1260	1250	1240	1230	1260	1430	2220	1170	1340	1050
3	1140	1260	1260	1250	1240	1240	1260	1470	2270	1150	1320	1020
4	1140	1270	1250	1250	1240	1300	1270	1540	2320	1140	1210	1010
5	1140	1270	1240	1250	1250	1320	1280	1520	2310	1120	1170	997
6	1140	1270	1240	1250	1240	1320	1270	1470	2180	1100	1140	1000
7	1140	1270	1250	1240	1240	1320	1270	1430	2160	1090	1130	1080
8	1140	1270	1250	1250	1240	1330	1270	1410	2110	1080	1110	1190
9	1150	1270	1250	1250	1250	1310	1270	1390	1920	1080	1100	1210
10	1150	1270	1250	1250	1250	1310	1270	1370	1830	1080	1080	1210
11	1150	1270	1250	1260	1240	1310	1270	1350	1740	1090	1060	1210
12	1140	1270	1260	1250	1250	1300	1280	1340	1740	1090	1050	1220
13	1140	1270	1260	1240	1260	1300	1290	1330	1850	1080	1030	1210
14	1160	1260	1250	1240	1270	1310	1290	1320	1730	1070	1030	1210
15	1260	1260	1260	1240	1250	1300	1290	1330	1700	1060	1010	1200
16	1280	1260	1260	1250	1240	1300	1290	1340	1680	1060	1000	1200
17	1290	1260	1260	1240	1240	1300	1290	1420	1620	1060	1000	1200
18	1290	1260	1260	1230	1230	1290	1290	1560	1560	1060	995	1190
19	1290	1260	1250	1240	1230	1300	1280	1740	1590	1070	981	1190
20	1290	1260	1260	1240	1240	1290	1290	1890	1550	1080	981	1190
21	1290	1250	1270	1240	1240	1280	1300	1970	1390	1190	984	1180
22	1290	1250	1250	1240	1240	1280	1330	2050	1330	1280	981	1170
23	1300	1240	1250	1240	1240	1290	1350	2100	1320	1280	981	1160
24	1290	1250	1240	1240	1240	1280	1350	2150	1300	1270	989	1170
25	1290	1260	1240	1240	1240	1280	1330	2170	1280	1260	996	1170
26	1280	1270	1250	1240	1230	1280	1310	2260	1260	1250	1000	1160
27	1270	1270	1250	1240	1240	1280	1310	2350	1260	1240	1010	1160
28	1290	1260	1250	1240	1250	1290	1340	2430	1230	1250	990	1160
29	1280	1260	1250	1230	1240	1270	1400	2470	1210	1340	986	1160
30	1270	1260	1240	1230	---	1270	1370	2420	1200	1360	983	1160
31	1260	---	1250	1230	---	1270	---	2360	---	1350	989	---
TOTAL	37810	37860	38820	38530	36030	39980	38940	53750	51110	35980	32966	34477
MEAN	1220	1262	1252	1243	1242	1290	1298	1734	1704	1161	1063	1149
MAX	1300	1270	1270	1260	1270	1330	1400	2470	2320	1360	1340	1220
MIN	1130	1240	1240	1230	1230	1230	1260	1320	1200	1060	981	997
AC-FT	75000	75100	77000	76420	71470	79300	77240	106600	101400	71370	65390	68390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2000, BY WATER YEAR (WY)*

MEAN	1726	1730	1285	1061	1044	1073	1061	1413	1938	1336	1168	1220
MAX	2570	2780	3005	1449	1521	1611	1527	2865	3862	2125	1672	1567
(WY)	1962	1960	1960	1999	1999	1999	1995	1997	1997	1982	1997	1996
MIN	938	736	739	737	626	525	370	445	619	716	734	732
(WY)	1961	1961	1961	1961	1963	1963	1961	1961	1960	1979	1960	1960

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1959 - 2000*	
ANNUAL TOTAL	564330		476253			
ANNUAL MEAN	1546		1301		1382	
HIGHEST ANNUAL MEAN					1896	1997
LOWEST ANNUAL MEAN					733	1961
HIGHEST DAILY MEAN	3260	Jun 16	2470	May 29	b5030	May 31 1993
LOWEST DAILY MEAN	1010	Aug 7	981	Aug 19	139	Sep 1 1959
ANNUAL SEVEN-DAY MINIMUM	1020	Aug 2	985	Aug 18	152	Sep 1 1959
INSTANTANEOUS PEAK FLOW			2520	May 29	b5030	May 30 1993
INSTANTANEOUS PEAK STAGE			2.86	May 29	3.97	Jun 7 1996
INSTANTANEOUS LOW FLOW			a962	Aug 19	c139	Sep 1 1959
ANNUAL RUNOFF (AC-FT)	1119000		944600		1001000	
10 PERCENT EXCEEDS	2510		1480		2260	
50 PERCENT EXCEEDS	1450		1250		1260	
90 PERCENT EXCEEDS	1140		1080		722	

*--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, 1.88 ft.
b--Observed, gage height, 3.15 ft, previous site at present datum.
c--Observed, present site and datum.

MADISON RIVER BASIN

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT

LOCATION.--Lat 45°29'25", long 111°38'00", in $SW^1/_4SE^1/_4NW^1/_4$ 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. Datum of gage is 4,689.03 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to May 7, 1941, nonrecording gage in wooden stilling well at present site at different datum. May 7, 1941, to Jan. 13, 1945, nonrecording gages in concrete stilling well at present site and datum.
REMARKS.--Water-discharge records good. 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. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1550	1890	1810	1590	1510	1690	1670	1770	3460	1620	1490	1360
2	1510	1880	1750	1600	1510	1700	1850	1800	3050	1620	1500	1260
3	1490	1820	1750	1600	1520	1700	1560	1830	3070	1610	1540	1270
4	1510	1770	1740	1600	1560	1700	1530	1820	3200	1610	1360	1270
5	1510	1700	1550	1600	1620	1700	1640	1810	3360	1620	1350	1270
6	1510	1640	1610	1740	1700	1700	1630	1870	3380	1620	1340	1410
7	1550	1640	1790	1800	1700	1700	1680	1880	3370	1570	1360	1620
8	1660	1640	1780	1740	1700	1710	1750	1980	3360	1460	1360	1510
9	1690	1640	1810	1580	1710	1710	1760	2110	3300	1410	1520	1390
10	1650	1650	1760	1570	1690	1700	1750	2170	3150	1370	1350	1370
11	1820	1640	1710	1570	1690	1720	1740	2270	2650	1320	1340	1410
12	1760	1640	1620	1580	1530	1730	1730	2100	2280	1290	1300	1410
13	1800	1710	1580	1630	1600	1730	1720	1970	2330	1310	1290	1410
14	1690	1750	1570	1680	1760	1720	1720	1950	2620	1380	1300	1420
15	1700	1790	1570	1790	1840	1720	1740	1880	2580	1490	1270	1420
16	1710	1840	1590	1950	1780	1550	1540	1780	2320	1440	1290	1420
17	1710	1900	1630	2010	1750	1610	1790	1810	2320	1440	1290	1420
18	1660	1940	1730	1870	1720	1680	1870	2040	2160	1430	1240	1420
19	1630	1980	1790	1740	1690	1710	1700	2240	1980	1430	1240	1460
20	1630	2040	1840	1740	1690	1710	1700	2250	1980	1300	1200	1490
21	1630	2020	1900	1740	1680	1700	1650	2410	1980	1270	1290	1490
22	1630	2000	1900	1740	1680	1790	1640	2800	1980	1340	1340	1490
23	1630	1980	1820	1740	1690	1950	1680	2990	1980	1340	1210	1490
24	1630	1970	1760	1730	1690	1810	1700	3090	1970	1350	1170	1500
25	1630	1970	1740	1740	1690	1670	1700	3400	1930	1360	1160	1500
26	1680	1950	1650	1740	1690	1580	1750	3480	1890	1350	1230	1570
27	1780	1940	1620	1740	1690	1520	1750	3580	1750	1330	1270	1630
28	1840	1940	1620	1740	1690	1490	1750	3580	1630	1490	1350	1600
29	1860	1930	1620	1690	1700	1540	1760	3780	1640	1500	1410	1500
30	1890	1880	1610	1620	---	1610	1770	4260	1630	1500	1320	1440
31	1890	---	1590	1570	---	1680	---	4050	---	1480	1310	---
TOTAL	51830	55080	52810	52770	48470	52230	51220	76750	74300	44650	40990	43220
MEAN	1672	1836	1704	1702	1671	1685	1707	2476	2477	1440	1322	1441
MAX	1890	2040	1900	2010	1840	1950	1870	4260	3460	1620	1540	1630
MIN	1490	1640	1550	1570	1510	1490	1530	1770	1630	1270	1160	1260
AC-FT	102800	109300	104700	104700	96140	103600	101600	152200	147400	88560	81300	85730

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2000, BY WATER YEAR (WY)

MEAN	1954	2023	1527	1394	1399	1454	1571	2038	3037	1878	1542	1638
MAX	2963	3318	3243	2061	2336	2087	3008	4189	6135	3454	2339	2298
(WY)	1960	1960	1960	1999	1943	1939	1948	1969	1997	1965	1971	1972
MIN	810	961	974	767	781	891	717	859	1122	972	1044	934
(WY)	1942	1941	1940	1940	1940	1941	1941	1961	1992	1961	1961	1941

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1939 - 2000	
ANNUAL TOTAL	778170		644320			
ANNUAL MEAN	2132		1760		1788	
HIGHEST ANNUAL MEAN					2530	1997
LOWEST ANNUAL MEAN					1047	1941
HIGHEST DAILY MEAN	5350	May 31	4260	May 30	9210	Jun 11 1970
LOWEST DAILY MEAN	1300	Jul 31	1160	Aug 25	210	Aug 25 1959
ANNUAL SEVEN-DAY MINIMUM	1320	Jul 31	1230	Aug 20	390	Aug 23 1959
INSTANTANEOUS PEAK FLOW			4450	May 30	9550	Jun 12 1970
INSTANTANEOUS PEAK STAGE			5.46	May 30	8.01	Jun 12 1970
ANNUAL RUNOFF (AC-FT)	1544000		1278000		1295000	
10 PERCENT EXCEEDS	3370		2040		2720	
50 PERCENT EXCEEDS	1900		1690		1580	
90 PERCENT EXCEEDS	1510		1350		1080	

MADISON RIVER BASIN

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT--Continued

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.--Missing temperature data from Nov. 23 to Dec. 13 due to corrosion of thermister. 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, 24.0°C, July 20, 21, 1998, July 29, 30, 1991; minimum, 0.0°C several to many day during winter months most years.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.0°C, Aug. 1-4; minimum, 0.0°C, Jan. 2, 3.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.0	9.5	9.5	6.5	5.5	6.0	---	---	---	.5	.5	.5
2	10.0	8.5	9.0	5.5	5.0	5.0	---	---	---	.5	.5	.5
3	8.5	7.5	8.0	5.5	5.0	5.0	---	---	---	.5	.0	.5
4	9.0	8.0	8.5	5.0	4.5	5.0	---	---	---	.5	.0	.5
5	9.0	8.5	9.0	5.5	5.0	5.0	---	---	---	.5	.5	.5
6	9.0	9.0	9.0	6.0	5.0	5.5	---	---	---	.5	.5	.5
7	9.0	8.5	8.5	6.0	5.5	5.5	---	---	---	1.0	.5	.5
8	9.0	8.5	9.0	6.0	5.5	5.5	---	---	---	1.0	.5	.5
9	9.0	9.0	9.0	6.5	5.5	6.0	---	---	---	1.0	.5	.5
10	9.5	8.5	9.0	6.5	5.5	6.0	---	---	---	1.0	.5	1.0
11	10.0	9.0	9.5	6.0	5.5	6.0	---	---	---	1.0	.5	1.0
12	10.0	9.5	9.5	6.0	5.5	6.0	---	---	---	1.0	.5	.5
13	10.0	9.5	10.0	6.0	5.5	6.0	---	---	---	1.0	.5	.5
14	10.5	10.0	10.0	6.0	6.0	6.0	.5	.5	.5	1.0	.5	.5
15	10.0	9.0	9.5	6.0	6.0	6.0	1.0	.5	.5	.5	.5	.5
16	9.0	8.0	8.5	6.0	6.0	6.0	1.0	.5	1.0	1.0	.5	.5
17	8.0	7.0	7.5	6.0	6.0	6.0	1.0	.5	1.0	1.0	.5	.5
18	7.5	7.0	7.0	6.0	5.5	6.0	1.0	1.0	1.0	1.0	.5	1.0
19	7.0	6.5	7.0	5.5	4.5	5.0	1.0	.5	.5	1.0	.5	1.0
20	7.0	6.0	6.5	5.0	4.0	4.5	1.0	1.0	1.0	1.5	1.0	1.0
21	6.5	5.5	6.0	4.0	3.5	3.5	1.0	.5	1.0	1.5	1.0	1.0
22	6.5	6.0	6.5	3.5	3.0	3.0	1.0	.5	.5	1.5	1.0	1.0
23	7.5	6.5	7.0	---	---	---	.5	.5	.5	1.5	1.0	1.0
24	7.5	6.5	7.0	---	---	---	.5	.5	.5	1.5	1.0	1.5
25	7.5	6.5	7.0	---	---	---	.5	.5	.5	2.0	1.5	1.5
26	7.5	7.0	7.5	---	---	---	.5	.5	.5	2.0	1.5	1.5
27	7.5	7.5	7.5	---	---	---	.5	.5	.5	2.0	1.5	1.5
28	7.5	7.0	7.5	---	---	---	.5	.5	.5	1.5	1.5	1.5
29	7.0	7.0	7.0	---	---	---	.5	.5	.5	1.5	1.0	1.5
30	7.0	6.5	7.0	---	---	---	.5	.5	.5	1.5	1.0	1.5
31	7.0	6.5	6.5	---	---	---	.5	.5	.5	1.5	1.0	1.0
MONTH	10.5	5.5	8.0	---	---	---	---	---	---	2.0	0.0	1.0

MADISON RIVER BASIN

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.0	1.0	1.0	3.5	2.5	3.0	7.0	6.5	6.5	13.5	12.5	12.5
2	1.0	1.0	1.0	4.0	3.0	3.5	6.5	5.5	6.0	13.5	13.0	13.0
3	1.0	1.0	1.0	4.5	3.5	4.0	6.0	5.0	5.5	13.5	12.5	13.0
4	1.5	1.0	1.0	4.5	4.0	4.5	7.0	6.0	6.0	13.5	13.0	13.0
5	1.5	1.5	1.5	4.5	3.5	4.0	7.0	6.5	7.0	13.0	12.5	12.5
6	1.5	1.5	1.5	4.0	2.5	3.0	7.0	6.5	7.0	12.5	11.5	12.0
7	2.0	1.5	1.5	2.5	1.5	2.5	7.5	6.5	7.0	12.0	11.5	11.5
8	2.0	1.5	1.5	2.5	2.0	2.5	7.5	6.5	7.0	12.5	11.5	12.0
9	2.0	1.5	2.0	3.0	2.5	2.5	8.0	7.5	8.0	12.5	11.0	11.5
10	2.5	2.0	2.0	3.0	2.5	3.0	9.0	8.0	8.5	11.0	10.5	10.5
11	2.5	2.0	2.5	3.0	2.5	3.0	9.5	8.5	9.0	10.5	10.0	10.0
12	3.0	2.5	2.5	3.5	2.5	3.0	10.0	9.5	9.5	10.0	9.0	9.5
13	3.0	2.5	3.0	3.5	3.0	3.5	10.0	9.0	9.5	10.5	9.5	10.0
14	3.0	3.0	3.0	4.0	3.5	3.5	9.5	8.5	8.5	10.5	10.0	10.5
15	3.0	2.5	2.5	4.0	3.5	3.5	9.5	8.0	8.5	11.5	10.0	10.5
16	3.0	2.5	2.5	4.0	3.5	3.5	10.5	9.5	10.0	11.0	10.5	11.0
17	3.0	2.5	3.0	4.0	3.5	3.5	10.0	9.0	9.5	11.5	11.0	11.0
18	3.0	2.5	3.0	4.0	3.5	3.5	9.5	9.0	9.5	12.0	11.0	11.0
19	3.5	3.0	3.0	4.0	3.0	3.5	10.5	9.0	9.5	13.0	11.5	12.0
20	3.5	3.0	3.5	3.5	3.0	3.5	10.5	10.0	10.5	13.0	12.0	12.5
21	4.0	3.5	3.5	3.5	3.0	3.5	11.0	10.5	10.5	13.5	13.0	13.0
22	4.0	3.0	3.5	4.0	3.0	3.5	12.0	11.0	11.5	14.5	13.5	14.0
23	3.5	3.0	3.0	4.0	3.5	4.0	12.0	11.5	11.5	14.5	14.0	14.5
24	4.0	3.5	3.5	4.0	3.5	3.5	12.0	11.0	11.5	15.0	14.0	14.5
25	4.0	3.5	3.5	4.5	3.5	4.0	11.5	10.5	11.0	16.0	14.5	15.0
26	3.5	3.0	3.5	5.0	4.0	4.5	11.0	10.5	10.5	16.0	15.0	15.0
27	3.5	3.0	3.0	6.0	5.0	5.5	12.0	10.5	11.0	15.0	14.5	15.0
28	3.5	2.5	3.0	6.5	6.0	6.0	12.5	11.0	12.0	15.0	14.0	14.5
29	3.5	3.0	3.0	6.0	6.0	6.0	11.5	11.0	11.5	14.5	13.0	14.0
30	---	---	---	7.0	6.0	6.5	12.5	11.0	11.5	13.5	12.5	13.0
31	---	---	---	7.0	6.0	6.5	---	---	---	13.0	12.0	12.5
MONTH	4.0	1.0	2.5	7.0	1.5	4.0	12.5	5.0	9.0	16.0	9.0	12.5

		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.0	11.5	12.0	21.0	20.0	20.5	23.0	22.0	22.5	17.5	16.0	16.5
2	14.5	12.0	13.0	20.0	19.5	19.5	23.0	22.5	23.0	16.0	15.0	15.5
3	15.5	13.0	14.5	20.0	19.5	19.5	23.0	22.5	23.0	15.0	14.5	15.0
4	15.5	13.5	14.5	19.5	19.0	19.5	23.0	22.0	22.5	15.0	14.0	14.5
5	17.5	15.0	16.5	19.0	18.5	19.0	22.0	21.0	21.5	15.0	14.0	14.5
6	17.5	16.0	16.5	19.0	18.5	19.0	22.0	21.0	21.5	15.5	14.5	15.0
7	18.0	17.0	17.5	19.0	18.5	18.5	22.0	21.5	22.0	15.0	14.5	14.5
8	17.5	16.5	17.0	19.5	18.0	18.5	22.0	21.0	21.5	15.0	14.0	14.5
9	17.0	16.5	17.0	19.5	18.5	19.0	22.0	21.5	21.5	14.0	13.0	13.5
10	16.5	16.0	16.5	19.0	18.5	18.5	22.0	21.5	21.5	13.5	12.5	13.0
11	16.0	15.0	15.5	19.0	18.5	19.0	21.5	21.0	21.0	13.0	12.5	12.5
12	16.0	15.0	15.5	19.5	19.0	19.5	21.0	20.5	21.0	13.5	12.5	13.0
13	15.5	14.5	15.0	20.0	19.0	19.5	21.0	20.5	21.0	14.5	13.5	13.5
14	15.5	15.0	15.0	21.0	20.0	20.5	21.0	20.5	20.5	15.0	14.0	14.5
15	15.0	14.5	15.0	21.0	20.0	20.5	20.5	20.0	20.5	16.0	14.5	15.0
16	15.0	14.0	14.5	21.0	20.0	20.5	20.5	20.0	20.0	16.0	15.0	16.0
17	15.5	14.0	14.5	21.0	20.0	20.5	20.0	19.5	19.5	15.5	14.5	15.5
18	16.5	15.0	15.5	21.0	20.5	20.5	20.0	19.5	19.5	16.0	15.5	16.0
19	16.5	15.5	16.0	20.5	19.5	20.0	19.5	19.0	19.0	15.5	15.0	15.5
20	15.5	15.0	15.5	20.5	19.5	20.0	19.0	18.0	18.5	15.0	14.5	14.5
21	17.0	15.5	16.0	20.5	20.0	20.5	18.0	17.5	18.0	14.5	12.5	13.5
22	17.5	17.0	17.0	21.5	20.0	20.5	18.0	17.0	17.5	12.5	7.0	10.0
23	18.0	16.5	17.5	21.5	21.0	21.0	19.0	17.0	18.0	7.0	5.5	7.0
24	18.5	17.0	17.5	21.5	21.0	21.0	19.0	18.5	19.0	6.5	4.0	5.0
25	18.5	17.5	18.0	21.5	21.0	21.5	19.5	18.5	19.0	8.5	6.0	7.0
26	18.0	17.5	18.0	22.0	21.5	21.5	19.0	18.5	19.0	9.0	7.5	8.0
27	18.5	17.5	18.0	22.0	21.5	21.5	19.0	18.5	19.0	9.5	8.0	8.5
28	19.0	18.0	18.0	22.0	21.5	21.5	18.5	18.0	18.5	10.0	9.0	9.5
29	20.0	18.0	19.0	22.0	21.5	21.5	19.0	18.0	18.5	11.0	9.5	10.0
30	20.5	19.5	20.0	22.5	22.0	22.0	19.0	17.5	18.0	11.0	10.0	10.5
31	---	---	---	22.5	22.0	22.0	17.5	17.0	17.5	---	---	---
MONTH	20.5	11.5	16.0	22.5	18.0	20.0	23.0	17.0	20.0	17.5	4.0	12.5

GALLATIN RIVER BASIN

06043500 GALLATIN RIVER NEAR GALLATIN GATEWAY, MT

LOCATION.--Lat 45°29'51", long 111°16'11" in $SE^1/_4SE^1/_4SE^1/_4$ 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).

GAGE.--Water-stage recorder. Datum of gage is 5,167.67 ft above sea level. Prior to Oct. 20, 1932, nonrecording gages at several different sites and datums within 0.8 mi of present site.

REMARKS.--Records good. Diversions for irrigation of about 1,400 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	478	412	392	358	313	334	331	1160	2480	1360	550	451
2	463	374	378	360	329	328	342	1460	2420	1400	538	530
3	454	427	364	346	341	327	315	1640	2760	1290	532	486
4	456	438	295	340	327	330	348	1940	2970	1250	544	457
5	450	441	309	343	322	343	411	1890	3090	1140	580	435
6	451	434	327	336	340	352	410	1660	3240	1080	536	426
7	455	417	343	330	339	350	370	1520	3320	1030	519	432
8	448	422	299	338	344	352	361	1370	3310	983	504	418
9	442	416	268	344	354	329	393	1300	3050	953	490	417
10	440	409	296	341	359	342	413	1280	2680	936	483	417
11	439	411	292	344	337	333	431	1210	2310	933	486	434
12	434	404	298	344	347	318	470	1130	2250	886	469	417
13	431	402	328	316	350	333	530	1050	2550	847	462	405
14	429	393	268	336	346	323	598	1010	2120	814	456	399
15	428	382	295	343	347	317	571	1040	2320	788	451	393
16	431	399	309	344	334	313	558	1180	2200	767	443	388
17	417	400	331	345	317	337	574	1400	1960	773	441	387
18	459	409	338	321	292	321	601	1400	1800	781	443	392
19	423	367	332	316	302	330	627	1500	1980	767	473	413
20	431	402	332	345	327	312	668	1630	1910	743	441	411
21	434	355	346	351	337	297	753	1890	1720	714	440	426
22	434	354	344	351	347	322	881	2320	1770	681	432	426
23	429	311	331	349	343	343	1010	2660	1800	657	424	414
24	427	334	316	346	346	326	934	2750	1750	644	427	408
25	432	379	321	350	345	317	817	2850	1720	627	479	421
26	426	407	322	355	306	347	776	3320	1580	617	446	416
27	440	405	e320	349	337	339	769	2990	1520	614	491	410
28	466	389	e320	331	353	378	994	3690	1440	595	446	405
29	481	383	e320	299	341	355	1370	3640	1410	581	431	405
30	436	393	322	288	---	347	1140	3140	1360	569	423	400
31	431	---	328	289	---	327	---	2900	---	561	427	---
TOTAL	13695	11869	9984	10448	9722	10322	18766	59920	66790	26381	14707	12639
MEAN	442	396	322	337	335	333	626	1933	2226	851	474	421
MAX	481	441	392	360	359	378	1370	3690	3320	1400	580	530
MIN	417	311	268	288	292	297	315	1010	1360	561	423	387
AC-FT	27160	23540	19800	20720	19280	20470	37220	118900	132500	52330	29170	25070

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1889 - 2000, BY WATER YEAR (WY)*

MEAN	458	385	323	310	306	313	505	1814	2969	1308	616	496
MAX	743	589	549	468	430	465	899	3135	5110	3669	1162	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

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1889 - 2000*	
ANNUAL TOTAL	308792		265243			
ANNUAL MEAN	846		725		820	
HIGHEST ANNUAL MEAN					1184	1976
LOWEST ANNUAL MEAN					408	1934
HIGHEST DAILY MEAN	4630	May 29	3690	May 28	8970	Jun 17 1974
LOWEST DAILY MEAN	268	Dec 9	268	Dec 9	174	Nov 21 1931
ANNUAL SEVEN-DAY MINIMUM	292	Dec 9	292	Dec 9	182	Jan 18 1931
INSTANTANEOUS PEAK FLOW			4070	May 29	b9270	Jun 27 1971
INSTANTANEOUS PEAK STAGE			4.44	May 29	7.38	Jun 17 1974
INSTANTANEOUS LOW FLOW			a245	Dec 9	c117	Jan 19 1935
ANNUAL RUNOFF (AC-FT)	612500		526100		593800	
10 PERCENT EXCEEDS	2250		1730		2060	
50 PERCENT EXCEEDS	439		426		430	
90 PERCENT EXCEEDS	331		322		270	

*--During periods of operation (August 1889 to 1894, June 1930 to September 1969, October 1971 to September 1981, october 1984 to current year).
a--Gage height, 1.14 ft.
b--From rating durve extended above 5,500 ft^3/s, gage height 6.49 ft.
c--Gage height, 0.68 ft, result of freezeup.
e--Estimated.

GALLATIN RIVER BASIN

06052500 GALLATIN RIVER AT LOGAN, MT

LOCATION.--Lat 45°53'07", long 111°26'15", in $SE^1/_4NW^1/_4NE^1/_4$ 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. Datum of gage is 4,086.42 ft above sea level. Prior to Aug. 10, 1928, nonrecording gages at several sites within 0.5 mi of present site at various datums. Aug. 10, 1928, to Oct. 7, 1941, nonrecording gage at present site and datum.
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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	592	736	799	674	e650	681	627	965	2590	761	239	308
2	609	725	791	690	665	670	628	957	2390	842	242	330
3	629	740	775	688	679	660	621	1090	2460	855	246	346
4	632	756	e720	670	653	655	607	1290	2670	758	254	343
5	620	765	e700	682	648	662	618	1500	2730	714	302	334
6	598	800	703	680	661	670	658	1440	2860	636	316	331
7	601	803	725	663	653	678	655	1320	2890	570	321	330
8	592	798	723	672	658	703	616	1200	2850	494	299	329
9	590	788	e700	677	671	677	606	1050	2560	453	285	321
10	598	793	659	e700	682	657	630	1050	2320	448	290	339
11	596	783	672	690	669	670	641	1200	2000	415	300	389
12	581	778	664	e700	654	655	661	1240	1750	382	293	396
13	565	772	690	e700	674	638	685	1080	1980	354	297	379
14	563	764	e660	713	672	650	778	974	1710	344	292	365
15	585	752	662	696	674	631	802	930	1650	332	288	353
16	616	749	687	687	664	624	749	932	1820	332	278	338
17	650	762	703	688	645	637	736	1080	1660	333	278	337
18	679	772	717	670	617	641	728	1300	1440	338	266	351
19	685	763	708	667	602	644	755	1290	1490	326	288	366
20	670	757	700	676	623	644	724	1370	1760	317	298	391
21	676	773	725	685	652	617	759	1520	1510	310	302	457
22	679	729	720	687	664	617	833	1850	1370	304	294	485
23	679	708	e700	685	669	637	976	2200	1460	290	293	492
24	670	686	e680	682	668	638	1060	2360	1380	282	285	518
25	667	758	e650	681	691	620	932	2410	1360	270	310	527
26	675	802	e640	692	638	618	853	2800	1300	258	318	540
27	689	806	e650	691	643	630	782	2910	1100	257	314	542
28	708	786	e650	677	681	649	768	3110	969	251	321	551
29	767	779	e660	e660	695	726	1030	3750	876	251	313	540
30	768	788	e680	e650	---	678	1160	3420	815	253	309	540
31	748	---	e700	e650	---	651	---	2960	---	256	310	---
TOTAL	19977	22971	21613	21123	19115	20228	22678	52548	55720	12986	9041	12168
MEAN	644	766	697	681	659	653	756	1695	1857	419	292	406
MAX	768	806	799	713	695	726	1160	3750	2890	855	321	551
MIN	563	686	640	650	602	617	606	930	815	251	239	308
AC-FT	39620	45560	42870	41900	37910	40120	44980	104200	110500	25760	17930	24140

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1894 - 2000, BY WATER YEAR (WY)*

MEAN	775	822	749	690	706	795	1052	2154	3006	1029	494	651
MAX	1265	1186	1049	971	1249	1290	1993	4686	5957	3899	1658	1269
(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

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1894 - 2000*	
ANNUAL TOTAL	385690		290168			
ANNUAL MEAN	1057		793		1077	
HIGHEST ANNUAL MEAN					1673	1997
LOWEST ANNUAL MEAN					454	1934
HIGHEST DAILY MEAN	5370	May 30	3750	May 29	b9840	Jun 21 1899
LOWEST DAILY MEAN	302	Jul 23	239	Aug 1	c130	Jul 19 1939
ANNUAL SEVEN-DAY MINIMUM	359	Jul 29	248	Jul 28	147	Jul 16 1934
INSTANTANEOUS PEAK FLOW			3930	May 29	b9840	Jun 21 1899
INSTANTANEOUS PEAK STAGE			7.10	May 29	d11.88	Feb 5 1963
INSTANTANEOUS LOW FLOW			a230	Aug 1	c130	Jul 19 1939
ANNUAL RUNOFF (AC-FT)	765000		575500		780200	
10 PERCENT EXCEEDS	2370		1370		2140	
50 PERCENT EXCEEDS	742		672		760	
90 PERCENT EXCEEDS	506		310		425	

*--During periods of operation (October 1893 to December 1905, August 1928 to current year).
a--Gage height, 3.58 ft.
b--Observed, gage height, 6.25 ft, site and datum then in use.
c--Observed, gage height, 2.04 ft.
d--From floodmark, backwater from ice.
e--Estimated.

GALLATIN RIVER BASIN

06052500 GALLATIN RIVER AT LOGAN, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1951, 1957, 1965, 1979-86, May to September 1999.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: August 1979 to September 1985, October 1999 to July 2000.
INSTRUMENTATION.--Temperature probe installed Sept. 14, 1999.
REMARKS--Temperature data not collected from Oct. 29, 1999 to Jan. 29, 2000. Missing data for Mar. 14, 15 due to equipment failure and missing data from July 12 to Sept. 30, 2000 due to failure to restart logger properly. Unpublished records of instantaneous specific conductance and temperature data are available in files of the District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.5°C, July 5, 1985; minimum, 0.0°C, on many days during winter periods.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of operation, maximum, 22.5°C, July 11; minimum 0.0°C many days in January and February.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
03...	1415	713	8.8	378	18.0	7.0	.004
MAR 2000							
21...	0910	623	8.4	391	-1.5	2.5	.002
MAY							
30...	1700	3360	8.3	205	27.5	13.5	.002
AUG							
08...	1545	298	8.9	342	32.0	21.0	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
03...	.435	.16	.016	.038	12	23	88
MAR 2000							
21...	.481	.22	.018	.040	17	29	89
MAY							
30...	.154	.52	.021	.160	148	1340	60
AUG							
08...	.016	.26	<.001	.020	8	6.4	82

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999											
03...	1415	190	52	14	2.7	.3	7.9	167	3.7	.2	18
MAY 2000											
30...	1700	94	26	7.0	1.2	.2	3.9	90	1.0	.1	12

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
03...	34	234	.32	451	--	--	--	--	--	--	--
MAY 2000											
30...	13	119	.16	1080	<3	<.1	3	4	2	3	10

GALLATIN RIVER BASIN

06052500 GALLATIN RIVER AT LOGAN, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.5	8.0	9.5									
2	8.5	6.5	7.5									
3	9.5	4.5	7.0									
4	10.5	6.0	8.0									
5	11.0	6.5	9.0									
6	10.0	8.0	9.0									
7	10.5	8.0	9.5									
8	13.0	9.0	10.5									
9	11.5	9.5	10.5									
10	11.5	8.0	10.0									
11	10.5	8.0	9.5									
12	10.5	9.0	9.5									
13	12.0	7.0	9.5									
14	12.0	9.5	10.5									
15	9.5	6.5	7.5									
16	8.0	4.5	6.0									
17	6.0	4.0	5.0									
18	8.5	5.5	6.5									
19	8.0	4.5	6.5									
20	8.5	4.5	6.5									
21	9.0	5.5	7.0									
22	9.0	5.5	7.5									
23	8.0	5.0	7.0									
24	7.5	5.0	6.5									
25	9.0	5.5	7.0									
26	9.5	6.5	8.0									
27	9.5	7.5	8.5									
28	8.5	7.0	8.0									
29										0	.0	.0
30										.5	.0	.0
31										.0	.0	.0
MONTH	---	---	---							---	---	---

		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	5.5	2.5	4.0	8.0	5.5	6.5	16.5	8.5	12.5
2	.5	.0	.0	6.0	1.0	3.5	7.0	4.5	5.5	15.0	11.0	13.0
3	1.0	.0	.0	6.5	2.0	4.0	9.0	2.5	6.0	16.0	10.0	13.0
4	.0	.0	.0	7.0	2.0	4.5	11.5	6.0	9.0	14.5	12.0	13.0
5	.0	.0	.0	8.0	3.0	5.5	10.5	6.5	9.0	13.0	10.0	11.0
6	3.0	.0	1.0	7.0	3.5	5.5	9.0	6.0	7.5	10.5	8.5	9.5
7	3.0	.0	1.5	5.5	3.5	4.5	10.0	3.5	7.0	11.5	8.0	9.5
8	4.0	1.0	2.5	4.5	1.5	3.0	11.5	5.0	8.5	13.5	7.5	10.5
9	5.0	2.0	3.5	4.5	1.0	2.5	11.0	7.0	9.0	12.5	8.5	10.5
10	3.5	.0	1.5	6.0	1.5	3.5	12.5	7.0	10.0	13.0	7.5	10.0
11	.0	.0	.0	4.0	2.0	3.0	13.0	8.0	10.5	11.0	7.0	8.5
12	.0	.0	.0	5.5	1.5	3.0	11.5	9.5	10.5	10.5	6.5	8.0
13	.5	.0	.0	6.5	2.5	4.0	10.0	7.5	9.0	11.5	6.5	8.5
14	.5	.0	.0	---	---	---	8.0	6.0	7.0	15.0	8.0	11.0
15	2.5	.0	1.0	---	---	---	12.0	6.0	9.0	16.5	9.5	13.0
16	3.0	.5	1.5	6.0	2.5	4.5	11.5	8.5	10.0	13.5	11.0	12.0
17	2.0	.0	.5	6.5	4.0	5.5	12.0	8.0	10.5	11.0	9.0	10.0
18	1.0	.0	.0	7.0	3.5	5.0	11.0	7.5	9.0	13.0	7.5	10.0
19	.5	.0	.0	5.5	4.0	5.0	13.0	7.5	10.0	12.0	9.5	11.0
20	1.0	.0	.0	6.0	2.5	4.5	13.5	8.5	11.0	14.5	8.5	11.0
21	4.0	.0	1.5	6.5	2.0	4.5	15.0	9.0	12.0	14.0	11.0	12.5
22	4.5	.5	2.5	9.0	3.0	6.0	13.5	9.5	12.0	15.5	11.0	13.0
23	3.5	1.0	2.5	7.5	4.5	5.5	11.5	9.0	10.5	16.0	12.0	13.5
24	4.0	2.0	2.5	8.0	3.0	5.5	11.5	7.5	9.5	14.0	11.0	12.0
25	3.5	1.0	2.0	9.0	3.5	6.5	9.0	6.5	8.0	16.5	11.0	13.5
26	4.5	.0	1.5	10.5	5.5	8.5	12.5	7.0	9.5	15.0	12.5	13.5
27	3.5	.5	2.0	11.5	5.5	8.5	14.0	7.0	10.5	15.0	10.0	13.0
28	6.0	3.0	4.0	10.0	7.0	8.5	14.5	8.5	11.5	14.5	12.0	13.5
29	6.0	2.5	4.0	7.0	4.5	5.5	12.0	8.0	9.5	14.0	9.5	11.5
30	---	---	---	8.5	4.5	6.5	13.5	5.5	9.5	13.5	8.5	10.5
31	---	---	---	9.5	4.5	7.0	---	---	---	13.0	9.0	11.5
MONTH	6.0	0.0	1.0	---	---	---	15.0	2.5	9.0	16.5	6.5	11.5

GALLATIN RIVER BASIN

06052500 GALLATIN RIVER AT LOGAN, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.5	7.5	11.0	20.0	16.5	18.5	---	---	---	---	---	---
2	17.5	10.0	13.5	19.0	14.5	17.0	---	---	---	---	---	---
3	18.0	12.5	15.0	20.0	15.5	18.0	---	---	---	---	---	---
4	18.0	12.0	15.0	20.0	15.5	17.5	---	---	---	---	---	---
5	18.5	12.5	15.0	20.5	13.5	17.0	---	---	---	---	---	---
6	18.0	12.0	14.5	20.5	15.5	18.0	---	---	---	---	---	---
7	18.0	12.0	15.0	21.0	14.5	17.5	---	---	---	---	---	---
8	17.0	12.0	14.5	23.0	16.0	19.0	---	---	---	---	---	---
9	15.0	11.5	13.0	22.0	17.0	19.5	---	---	---	---	---	---
10	15.5	11.0	13.0	21.5	15.5	18.5	---	---	---	---	---	---
11	15.0	10.5	12.5	22.5	15.0	19.0	---	---	---	---	---	---
12	13.5	11.5	12.0	---	---	---	---	---	---	---	---	---
13	15.0	10.0	12.0	---	---	---	---	---	---	---	---	---
14	13.5	10.5	12.5	---	---	---	---	---	---	---	---	---
15	12.5	11.5	12.0	---	---	---	---	---	---	---	---	---
16	14.5	10.0	12.0	---	---	---	---	---	---	---	---	---
17	16.5	10.5	13.5	---	---	---	---	---	---	---	---	---
18	17.5	12.0	15.0	---	---	---	---	---	---	---	---	---
19	16.5	13.0	14.0	---	---	---	---	---	---	---	---	---
20	16.0	11.0	13.5	---	---	---	---	---	---	---	---	---
21	18.5	12.0	15.0	---	---	---	---	---	---	---	---	---
22	17.5	14.5	15.5	---	---	---	---	---	---	---	---	---
23	18.5	13.0	15.5	---	---	---	---	---	---	---	---	---
24	19.5	14.0	16.5	---	---	---	---	---	---	---	---	---
25	19.0	14.0	16.5	---	---	---	---	---	---	---	---	---
26	19.0	13.5	16.0	---	---	---	---	---	---	---	---	---
27	20.0	14.0	17.0	---	---	---	---	---	---	---	---	---
28	20.5	14.5	17.5	---	---	---	---	---	---	---	---	---
29	21.5	15.5	18.5	---	---	---	---	---	---	---	---	---
30	22.0	15.5	19.0	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	22.0	7.5	14.5	---	---	---	---	---	---	---	---	---

MISSOURI RIVER MAIN STEM

06054500 MISSOURI RIVER AT TOSTON, MT

LOCATION.--Lat 46°08'46", long 111°25'11", in $NW^1/_4SE^1/_4NW^1/_4$ 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. Datum of gage is 3,905.68 ft above sea level. Prior to Dec. 20, 1916, nonrecording gages at site 2.5 mi downstream at different datums.
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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2940	4060	4280	3790	3050	3800	3780	4100	8800	3050	1200	1340
2	2920	4050	4240	3800	3540	3810	3740	3900	7760	3100	1160	1440
3	3020	4050	4170	3490	4130	3800	4050	3930	7340	3150	1160	1360
4	3150	3970	3950	3180	3820	3790	3460	4010	7270	3210	1260	1420
5	3170	3960	3560	3520	3700	3780	3660	4390	7330	3410	1230	1430
6	3160	4000	3490	3480	3940	3800	3820	4650	7270	3260	1220	1460
7	3160	3990	3850	3320	4040	3820	4050	4710	7210	2960	1220	1650
8	3190	4000	3840	3730	4090	3930	4400	4650	7140	2720	1250	1770
9	3260	4000	3600	3800	4200	3880	4450	4540	6960	2390	1280	1650
10	3280	4020	3770	3680	4030	3840	4320	4490	6840	2180	1400	1640
11	3290	4000	3650	3520	3900	3810	4380	4800	6430	1980	1300	1720
12	3550	3950	4000	3510	3770	3840	4610	4840	5590	1810	1290	1790
13	3390	3930	3970	3110	3700	3800	4650	4590	5630	1670	1270	1810
14	3380	3970	3320	3240	3800	3790	4900	4240	5620	1560	1280	1810
15	3370	4050	3400	4160	4010	3770	5050	4140	5830	1560	1250	1780
16	3470	4110	4070	4560	4020	3690	5020	3770	5850	1590	1220	1760
17	3580	4140	4130	4570	3870	3590	4540	3860	5660	1500	1240	1740
18	3680	4270	4080	4360	3800	3650	4900	4110	5370	1500	1250	1760
19	3700	4260	4060	4150	3670	3750	4550	4680	5040	1470	1210	1800
20	3660	4360	3960	4040	3650	3750	4350	4750	5260	1430	1250	1880
21	3670	4370	4260	4100	3760	3710	4350	4800	5020	1240	1270	2040
22	3610	4310	4250	4040	3800	3670	4260	5260	4740	1210	1350	2170
23	3610	4140	3980	4050	3820	3880	4620	6050	4750	1220	1360	2320
24	3610	3960	3640	4100	3840	4000	4760	6370	4690	1190	1240	2440
25	3620	4180	3590	4050	3920	3770	4710	6730	4600	1170	1260	2500
26	3620	4230	3530	4040	3800	3630	4510	7180	4370	1170	1250	2560
27	3740	4330	3460	4090	3760	3560	4210	7770	4090	1140	1320	2690
28	3960	4420	3400	4010	3820	3550	3950	7860	3600	1100	1350	2720
29	4000	4370	3470	3750	3900	3680	3960	8790	3330	1230	1480	2600
30	4050	4370	3450	3290	---	3770	4250	9420	3180	1260	1420	2470
31	4050	---	3600	3050	---	3800	---	9530	---	1210	1360	---
TOTAL	107860	123820	118020	117580	111150	116710	130260	166910	172570	58640	39600	57520
MEAN	3479	4127	3807	3793	3833	3765	4342	5384	5752	1892	1277	1917
MAX	4050	4420	4280	4570	4200	4000	5050	9530	8800	3410	1480	2720
MIN	2920	3930	3320	3050	3050	3550	3460	3770	3180	1100	1160	1340
AC-FT	213900	245600	234100	233200	220500	231500	258400	331100	342300	116300	78550	114100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1890 - 2000, BY WATER YEAR (WY)*

MEAN	4461	4759	3785	3391	3732	4153	5672	8969	12620	5301	2789	3463
MAX	6778	7028	5968	4893	5217	6900	10090	18400	24520	14240	5729	5813
(WY)	1977	1984	1960	1984	1915	1916	1969	1976	1997	1975	1975	1984
MIN	2562	2815	2569	2165	2268	2835	2388	3127	3175	1243	896	1448
(WY)	1891	1891	1891	1891	1989	1955	1961	1961	1987	1988	1988	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1890 - 2000*	
ANNUAL TOTAL	1887300		1320640			
ANNUAL MEAN	5171		3608		5282	
HIGHEST ANNUAL MEAN					7742	1997
LOWEST ANNUAL MEAN					2927	1961
HIGHEST DAILY MEAN	19400	May 31	9530	May 31	33400	Jun 12 1997
LOWEST DAILY MEAN	1630	Aug 4	1100	Jul 28	700	Jan 12 1963
ANNUAL SEVEN-DAY MINIMUM	1720	Jul 30	1170	Jul 22	811	Jul 31 1961
INSTANTANEOUS PEAK FLOW			9760	May 29	34000	Jun 12 1997
INSTANTANEOUS PEAK STAGE			6.83	May 29	12.22	Jun 12 1997
INSTANTANEOUS LOW FLOW			a838	Jul 31	b450	Jul 31 1989
ANNUAL RUNOFF (AC-FT)	3743000		2619000		3826000	
10 PERCENT EXCEEDS	9250		4810		9530	
50 PERCENT EXCEEDS	4180		3800		4150	
90 PERCENT EXCEEDS	2510		1350		2410	

*--During periods of operation (1911-16, 1942 to current year).
a--Gage height, 2.33 ft, result of regulation.
b--Gage height, 1.68 ft, result of regulation.

MISSOURI RIVER MAIN STEM

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.--Missing temperature data for Nov. 14-15 and Apr. 5-7 due to equipment malfunction; for July 21 to Aug. 14, the probe was in very shallow water causing non-representative the maximum and mean daily values were deleted for that period. 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 (water years 1973-81): Maximum daily, 524 microsiemens per centimeter (µS/cm) at 25°C, Mar. 4, 1978; minimum daily, 159 microsiemens per centimeter (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 (water years 1949-53): Maximum daily mean, 670 mg/L, Mar. 22, 25, 1951; minimum daily mean, 5 mg/L, Jul. 12, 1951.
SEDIMENT LOAD (water years 1949-53): Maximum daily, 16,100 tons, May 5, 1952; minimum daily, 51 tons Feb. 1, 1951.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.5°C, July 14, but was probably higher during the July 21 to Aug. 14 period; minimum, 0.0°C, many days December through February.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
04...	1350	3950	8.6	383	12.5	6.0	.002
MAR 2000							
21...	1200	3780	8.4	389	10.0	5.0	.001
MAY							
31...	1550	9730	8.3	242	9.5	12.5	<.001
AUG							
09...	1645	1150	8.8	310	31.0	23.0	<.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
04...	.121	.26	<.001	.023	7	75	96
MAR 2000							
21...	.148	.24	.013	.036	15	153	96
MAY							
31...	.044	.58	.013	.109	68	1790	90
AUG							
09...	.012	.47	.005	.052	13	40	89

MISSOURI RIVER MAIN STEM

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
NOV 1999											
04...	1350	160	42	12	3.4	.6	19	145	11	1.1	23
MAY 2000											
31...	1550	88	24	6.8	2.4	.6	13	93	6.6	.9	20

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
NOV 1999											
04...	38	237	.32	2530	26	<.1	<1	2	<1	<2	<31
MAY 2000											
31...	16	145	.20	3810	27	<.1	2	2	1	1	7

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.0	10.0	10.5	7.0	5.5	6.5	4.5	3.5	4.0	1.0	.5	.5
2	10.5	8.0	9.5	5.5	4.5	5.0	3.5	2.5	3.0	1.0	.5	.5
3	8.0	7.0	7.5	5.5	4.0	5.0	2.5	1.5	2.0	.5	.5	.5
4	9.5	7.5	8.5	6.5	5.5	6.0	1.5	.5	1.0	1.0	.5	.5
5	10.5	9.0	9.5	6.0	5.5	6.0	1.0	.5	.5	1.0	.5	.5
6	10.5	9.5	10.0	6.5	6.0	6.0	1.0	.5	.5	1.0	.5	.5
7	10.5	9.5	10.0	7.5	6.5	7.0	1.0	.5	.5	1.0	.5	.5
8	11.5	10.0	11.0	7.0	6.5	6.5	1.0	.5	.5	1.0	.5	.5
9	12.0	11.0	11.5	7.5	7.0	7.5	1.0	.5	.5	1.0	.5	.5
10	11.5	10.0	10.5	7.0	6.0	7.0	1.0	.5	.5	.5	.5	.5
11	11.0	10.0	10.5	6.5	6.0	6.5	1.0	.5	.5	1.0	.5	.5
12	10.5	9.5	10.0	7.5	6.5	7.0	1.0	.5	.5	1.0	.5	.5
13	11.0	10.0	10.5	8.0	7.5	7.5	.5	.5	.5	.5	.5	.5
14	12.5	10.5	11.5	8.0	6.5	7.5	1.0	.5	.5	1.0	.5	1.0
15	11.0	8.5	10.0	6.5	5.5	6.0	1.0	.5	.5	1.0	.5	.5
16	8.5	7.0	7.5	6.0	5.0	5.5	1.0	.5	.5	1.0	.5	.5
17	8.0	6.5	7.0	6.0	5.5	5.5	1.0	.5	.5	1.0	.5	.5
18	7.5	6.0	6.5	6.0	5.5	5.5	1.0	.5	.5	1.0	.5	.5
19	7.5	7.0	7.0	5.5	4.0	5.0	.5	.5	.5	1.0	.5	.5
20	8.0	6.5	7.0	5.0	4.0	4.5	1.0	.5	.5	1.0	.5	.5
21	8.5	7.0	8.0	4.5	3.5	4.0	.5	.5	.5	1.0	.5	.5
22	8.5	7.5	8.0	3.5	2.5	3.0	1.0	.5	.5	1.0	.5	.5
23	8.0	7.5	7.5	2.5	1.0	2.0	1.0	.5	.5	1.0	.5	.5
24	8.0	7.0	7.5	1.5	1.0	1.0	.5	.5	.5	1.0	.5	.5
25	8.0	7.0	7.5	2.5	1.5	2.0	.5	.5	.5	1.0	.5	.5
26	8.5	7.5	8.0	4.0	2.5	3.5	.5	.5	.5	1.0	.5	.5
27	9.0	8.0	8.5	4.0	2.5	3.5	.5	.5	.5	1.0	.5	.5
28	9.0	8.5	8.5	2.5	2.0	2.5	.5	.5	.5	1.0	.5	.5
29	8.5	7.5	8.0	2.5	2.0	2.0	1.0	.5	.5	.5	.5	.5
30	8.0	7.5	7.5	4.0	2.0	2.5	1.0	.5	.5	.5	.5	.5
31	8.5	7.0	8.0	---	---	---	1.0	.5	.5	.5	.5	.5
MONTH	12.5	6.0	9.0	8.0	1.0	5.0	4.5	0.5	1.0	1.0	0.5	0.5

MISSOURI RIVER MAIN STEM

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.0	.5	.5	6.0	5.0	5.5	7.5	7.0	7.5	15.5	13.0	14.5
2	1.5	.5	1.0	6.0	5.0	5.5	7.0	6.0	6.5	16.5	15.0	16.0
3	1.0	.5	.5	6.5	5.0	5.5	6.5	6.0	6.0	15.5	14.0	15.0
4	1.0	.5	.5	7.0	5.5	6.0	10.0	6.5	8.5	16.0	14.5	15.5
5	1.0	.5	.5	7.5	6.0	6.5	---	---	---	14.5	13.0	13.5
6	1.5	.5	.5	6.5	5.5	6.0	---	---	---	13.0	12.0	12.5
7	1.0	.5	.5	7.0	6.0	6.5	---	---	---	13.0	12.0	12.5
8	1.0	.5	1.0	6.0	4.0	5.0	9.5	7.0	8.5	14.0	13.0	13.5
9	1.0	.5	1.0	5.0	3.5	4.5	11.0	9.0	10.0	14.5	13.0	13.5
10	1.5	.5	.5	4.5	4.0	4.0	10.5	8.0	9.5	13.0	12.0	12.5
11	1.5	.5	1.0	5.0	4.0	4.5	11.5	10.0	11.0	12.0	9.5	11.0
12	1.0	.5	1.0	4.5	3.5	4.0	12.5	11.0	11.5	10.5	9.5	10.0
13	1.5	.5	1.0	5.5	4.0	5.0	11.0	9.0	10.5	11.5	9.5	10.5
14	1.5	1.0	1.0	5.5	4.5	5.0	9.0	7.0	7.5	14.0	11.5	13.0
15	2.0	1.0	1.5	6.0	5.0	5.0	9.5	7.0	8.0	15.0	13.5	14.0
16	3.5	1.5	2.5	6.0	4.5	5.0	11.0	9.5	10.5	15.5	14.0	14.5
17	3.5	2.0	2.5	6.0	4.5	5.5	11.5	10.5	11.0	14.5	12.5	13.5
18	2.5	1.5	2.0	5.5	4.5	5.0	12.0	11.5	11.5	13.5	12.5	13.0
19	2.5	1.5	1.5	5.5	4.5	5.0	13.0	11.5	12.0	15.5	13.5	14.5
20	2.5	1.5	2.0	5.0	4.0	4.5	13.5	12.0	13.0	14.5	14.0	14.5
21	4.0	2.0	3.0	5.0	4.0	4.5	14.5	13.0	13.5	16.0	14.5	15.5
22	5.5	4.0	4.5	6.0	4.0	5.5	15.0	13.5	14.0	16.0	14.5	15.0
23	5.5	4.5	5.0	7.0	5.5	6.0	14.0	13.0	13.5	16.0	15.0	15.5
24	5.0	4.5	4.5	5.5	4.5	5.0	13.0	12.0	12.5	16.0	14.5	15.0
25	4.5	3.0	3.5	7.0	5.5	6.0	12.0	10.5	11.5	16.5	14.5	15.5
26	3.5	3.0	3.0	8.5	6.0	7.5	11.5	10.0	11.0	17.0	15.5	16.5
27	4.0	3.0	3.5	9.5	7.5	8.5	13.5	11.5	12.5	16.0	14.5	15.5
28	5.0	3.5	4.5	10.0	9.0	9.5	18.0	13.0	14.5	15.5	15.0	15.0
29	6.0	5.0	5.5	9.0	6.5	7.5	14.5	13.0	13.5	15.5	13.5	14.5
30	---	---	---	7.5	6.0	7.0	13.0	12.0	12.5	14.0	12.5	13.0
31	---	---	---	8.0	6.5	7.5	---	---	---	14.5	12.0	13.0
MONTH	6.0	0.5	2.0	10.0	3.5	5.5	---	---	---	17.0	9.5	14.0

		JUNE			JULY			AUGUST			SEPTEMBER	
1	14.0	11.5	12.5	23.0	20.5	21.0	---	21.0	---	18.0	16.5	17.0
2	16.0	14.0	14.5	21.5	19.5	20.0	---	20.5	---	17.5	15.5	16.5
3	17.0	16.0	16.5	20.5	19.0	19.5	---	20.0	---	17.5	15.0	16.0
4	17.0	16.5	17.0	20.5	18.5	19.0	---	19.0	---	17.5	15.0	16.0
5	18.0	17.0	17.5	20.5	18.5	19.0	---	19.0	---	18.5	15.0	16.5
6	18.5	17.5	18.0	20.5	18.0	19.0	---	18.0	---	17.5	15.5	16.0
7	19.0	18.5	18.5	21.0	18.5	19.5	---	18.5	---	16.0	14.5	15.5
8	19.5	18.0	19.0	22.0	18.5	20.0	---	18.5	---	16.0	14.5	15.0
9	18.5	16.5	17.5	22.5	20.0	21.0	---	18.0	---	14.5	13.0	14.0
10	17.0	16.5	16.5	23.0	19.5	21.0	---	19.5	---	13.5	13.0	13.0
11	17.0	15.0	16.0	22.5	19.5	21.0	---	19.0	---	13.5	12.0	13.0
12	16.5	14.5	16.0	24.5	19.0	21.0	---	18.5	---	15.5	12.0	14.0
13	14.5	14.0	14.5	25.5	19.5	22.0	---	18.0	---	17.0	14.5	16.0
14	15.5	14.5	15.0	26.5	20.0	22.5	---	17.5	---	18.0	16.0	17.0
15	15.0	14.0	14.5	25.0	20.0	21.5	22.5	17.0	19.5	19.0	17.0	18.0
16	14.5	13.5	14.0	24.5	19.5	21.5	22.0	19.0	20.0	19.0	17.5	18.0
17	16.0	14.0	15.5	24.5	18.5	20.5	22.0	19.0	20.0	18.5	17.5	18.0
18	18.0	16.0	17.0	24.5	19.5	21.0	21.5	18.5	19.5	18.0	17.0	17.5
19	18.5	16.0	17.5	23.5	18.5	20.5	21.0	17.5	19.5	17.0	14.5	15.5
20	16.0	15.5	16.0	25.0	18.0	20.5	19.5	17.0	18.0	14.5	13.0	14.0
21	17.5	16.0	17.0	---	17.5	---	20.0	17.0	18.0	13.0	10.5	12.0
22	19.0	17.5	18.5	---	18.0	---	20.0	16.5	18.0	10.5	6.0	8.5
23	18.5	17.0	18.0	---	18.5	---	20.5	17.5	19.0	6.5	5.5	6.0
24	19.5	18.5	19.0	---	18.5	---	21.5	18.5	19.5	8.0	6.0	7.0
25	18.5	18.0	18.5	---	18.0	---	22.0	19.0	20.5	8.5	7.0	8.0
26	19.5	18.5	18.5	---	18.0	---	21.5	19.0	20.0	10.0	8.5	9.5
27	19.5	18.0	18.5	---	18.5	---	21.5	18.0	19.5	11.5	10.0	10.5
28	21.0	18.5	19.5	---	18.5	---	19.5	17.0	18.0	12.0	10.5	11.5
29	21.5	19.5	20.5	---	20.0	---	19.0	16.0	17.5	12.0	11.0	11.5
30	22.0	19.5	21.0	---	20.5	---	18.5	16.5	17.5	12.0	12.0	12.0
31	---	---	---	---	21.0	---	18.5	16.5	17.0	---	---	---
MONTH	22.0	11.5	17.0	---	17.5	---	---	16.0	---	19.0	5.5	13.8

MISSOURI RIVER MAIN STEM

06058500 CANYON FERRY LAKE NEAR HELENA, MT

LOCATION.--Lat 46°38'57", long 111°43'39", in $SE^1/_4SE^1/_4$ 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. Datum of gage is referenced to sea level (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by concrete dam; construction began in 1949, completed in 1953. Storage began in March 1953. Usable capacity, 1,993,000 acre-ft between elevation 3,770.00 ft, invert of outlet works, and 3,800.00 ft, controlled spillway elevation. Dead storage, 1,060 acre-ft, below elevation 3,650.00 ft. 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, recreation, and supplemental water supply for city of Helena.

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, 1,666,000 acre-ft, June 28, elevation, 3,790.12 ft; minimum, 1,393,000 acre-ft, Sept. 25, elevation, 3,781.21 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
Sept. 30	3,788.65	1,620,000	--
Oct. 31	3,787.64	1,588,000	-32,000
Nov. 30	3,787.97	1,598,000	+10,000
Dec. 31	3,787.22	1,575,000	-23,000
CAL YR 1999			-109,000
Jan. 31	3,786.04	1,538,000	-37,000
Feb. 29	3,784.69	1,496,000	-42,000
Mar. 31	3,783.05	1,447,000	-49,000
Apr. 30	3,783.13	1,449,000	+2,000
May 31	3,785.21	1,512,000	+63,000
June 30	3,790.11	1,666,000	+154,000
July 31	3,787.25	1,575,000	-91,000
Aug. 31	3,783.26	1,453,000	-122,000
Sept. 30	3,781.39	1,398,000	-55,000
WTR YR 2000			-222,000

PRICKLY PEAR CREEK BASIN

06061500 PRICKLY PEAR CREEK NEAR CLANCY, MT

LOCATION.--Lat 46°31'09", long 111°56'45", in NE$^1/_4$SE$^1/_4$SW$^1/_4$ sec. 23, T.9 N., R.3 W., Jefferson County, Hydrologic Unit 10030101, on right bank 3.5 mi downstream from Lump Gulch Creek, 4 mi northeast of Clancy, 7 mi southeast of Helena, and at river mile 24.4.

DRAINAGE AREA.--192 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1908 to September 1916, July 1921 to September 1933, October 1945 to October 1953, October 1954 to September 1969, October 1978 to current year. October 1969 to September 1980 record collected by Montana Department of Natural Resources and Conservation. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1086: 1946(m). WSP 1309: 1925, 1927, 1931(M), 1933, 1948(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,067.1 ft above sea level. Prior to July 12, 1910, nonrecording gage at site 1.2 mi upstream at different datum. July 12, 1910, to Sept. 30, 1916, and July 28, 1921, to Aug. 12, 1933, nonrecording gage at site 2.2 mi upstream at different datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 700 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 19, 1975 reached a discharge of 1,200 ft^3/s, gage height, 6.56 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	18	18	e16	e12	15	18	18	33	12	4.5	4.8
2	17	16	17	e15	e14	15	19	22	32	15	4.4	5.8
3	17	17	16	e15	14	15	16	23	25	19	4.3	6.6
4	17	18	e15	e14	e12	16	20	25	22	21	4.8	6.3
5	17	17	e15	e15	e13	17	27	25	19	18	5.2	6.1
6	17	17	e16	e15	14	16	24	27	18	15	4.9	5.9
7	17	17	15	15	14	15	20	21	16	14	4.7	5.9
8	17	17	e14	15	15	16	20	18	15	13	4.6	5.5
9	16	17	e14	15	15	15	21	18	14	12	4.5	5.6
10	16	17	14	e14	e14	14	23	18	15	12	4.7	6.4
11	16	16	14	e14	e14	15	24	21	16	11	5.7	7.3
12	16	16	14	e13	e14	14	26	22	16	10	5.6	7.6
13	16	16	15	e13	e13	14	29	20	15	9.8	5.2	7.3
14	15	16	e14	e15	e14	15	26	21	14	9.2	5.1	6.9
15	16	16	15	e17	e15	15	25	20	22	8.9	4.9	6.7
16	17	16	15	15	e15	14	24	21	45	8.5	4.8	6.4
17	17	16	16	15	e14	15	27	26	40	8.3	4.7	6.1
18	18	16	16	e14	e14	15	30	27	31	8.4	4.8	6.1
19	18	16	17	e14	e14	15	30	24	26	8.5	5.1	6.3
20	18	16	17	e14	e14	15	31	22	23	8.3	4.7	6.7
21	18	16	17	e15	e14	14	31	22	20	8.3	4.6	7.9
22	18	16	16	e15	e14	15	34	22	18	e7.5	4.5	9.1
23	17	e15	e15	e15	15	17	41	21	17	e7.0	4.4	9.1
24	17	14	e15	14	16	16	33	20	15	e6.5	4.3	9.1
25	17	16	e15	e14	15	16	27	18	14	e6.0	4.4	9.7
26	16	18	e14	e14	e13	17	26	17	14	5.4	4.3	10
27	18	18	e14	14	15	18	25	16	14	5.2	4.3	10
28	19	e15	e14	e12	15	21	26	18	13	4.9	4.3	9.4
29	21	16	e15	e11	15	19	26	20	13	4.7	4.3	9.5
30	19	19	e15	e10	---	18	18	22	12	4.6	4.3	9.9
31	18	---	e16	e11	---	17	---	29	---	4.5	4.5	---
TOTAL	533	494	473	438	410	489	767	664	607	306.5	145.4	220.0
MEAN	17.2	16.5	15.3	14.1	14.1	15.8	25.6	21.4	20.2	9.89	4.69	7.33
MAX	21	19	18	17	16	21	41	29	45	21	5.7	10
MIN	15	14	14	10	12	14	16	16	12	4.5	4.3	4.8
AC-FT	1060	980	938	869	813	970	1520	1320	1200	608	288	436
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 2000, BY WATER YEAR (WY)*												
MEAN	31.3	29.1	23.9	21.3	23.9	31.4	52.7	110	131	57.8	30.5	29.3
MAX	70.0	60.0	43.8	36.7	57.2	80.0	131	453	450	141	88.8	71.4
(WY)	1909	1910	1981	1983	1963	1910	1930	1981	1927	1915	1993	1915
MIN	13.0	14.7	12.0	9.94	8.55	15.8	22.9	21.4	20.2	9.89	4.69	7.33
(WY)	1932	1932	1932	1957	1989	2000	1931	2000	2000	2000	2000	2000

06061500 PRICKLY PEAR CREEK NEAR CLANCY, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1908 - 2000*	
ANNUAL TOTAL	12376		5546.9			
ANNUAL MEAN	33.9		15.2		47.7	
HIGHEST ANNUAL MEAN					117	1981
LOWEST ANNUAL MEAN					15.2	2000
HIGHEST DAILY MEAN	209	Jun 3	45	Jun 16	1930	May 22 1981
LOWEST DAILY MEAN	14	Sep 24	4.3	Aug 3	4.1	Aug 12 1931
ANNUAL SEVEN-DAY MINIMUM	14	Dec 8	4.3	Aug 24	4.3	Aug 24 2000
INSTANTANEOUS PEAK FLOW			a49	Jun 16	d2300	May 22 1981
INSTANTANEOUS PEAK STAGE			b2.39	Jan 21	8.82	May 22 1981
INSTANTANEOUS LOW FLOW			c3.9	Aug 2	f.50	Jan 26 1958
ANNUAL RUNOFF (AC-FT)	24550		11000		34570	
10 PERCENT EXCEEDS	69		23		101	
50 PERCENT EXCEEDS	22		15		30	
90 PERCENT EXCEEDS	16		5.5		16	

*--During periods of operation (July 1908 to September 1916, July 1921 to September 1933, October 1945 to October 1953, October 1954 to September 1969, October 1978 to current year).
a--Gage height, 1.07 ft.
b--Ice jam.
c--Gage height, 0.02 ft.
d--From culvert computation of peak flow.
e--Estimated.
f--Gage height, 0.40 ft, result of ice jam upstream.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1999 to current year.
REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
NOV 1999												
05...	0800	17	8.1	278	-2.5	2.5	100	30	6.8	2.7	.6	15
MAR 2000												
21...	1450	13	8.2	331	12.0	7.0	--	--	--	--	--	--
JUN												
01...	0930	34	8.2	233	17.0	7.0	83	24	5.6	2.4	.6	12
AUG												
07...	1550	4.8	8.6	359	31.0	25.0	--	--	--	--	--	--

DATE	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
NOV 1999												
05...	81	3.5	.5	22	51	180	.24	8.26	.001	.17	E.08	.001
MAR 2000												
21...	--	--	--	--	--	--	--	--	<.001	.25	E.10	.008
JUN												
01...	69	2.5	.4	19	37	145	.20	13.3	<.001	.09	.30	.005
AUG												
07...	--	--	--	--	--	--	--	--	.001	.06	.20	.009

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999											
05...	.013	5	.1	<1	2	E1	<2	120	3	.14	79
MAR 2000											
21...	.014	--	--	--	--	--	--	--	2	.07	71
JUN											
01...	.040	6	.3	<1	4	10	<1	115	16	1.5	61
AUG											
07...	.015	--	--	--	--	--	--	--	3	.04	74

E--Estimated.

TENMILE CREEK BASIN

462631112142201 BANNER CREEK TRIBUTARY BELOW PEERLESS JENNY MINE, NEAR RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°23'31", long 112°14'22", in SW$^1/_4$ NE$^1/_4$ SW$^1/_4$ sec. 16, T. 8 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, right bank tributary to Banner Creek, about 0.75 mi upstream from Scott Reservoir road, and 3.25 mi south of Rimini.

DRAINAGE AREA.--0.91 mi^2.

PERIOD OF RECORD.--April to June 2000 (discontinued).

WATER-QUALITY DATA, WATER YEARS OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
APR 2000										
28...	1100	0.79	7.7	57	11.0	0.0	23	7.1	1.3	.7
JUN										
08...	0910	0.63	7.4	70	16.5	7.5	26	8.1	1.5	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
APR 2000										
28...	.1	1.6	14	.3	<.1	11	10	40	.06	.09
JUN										
08...	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
APR 2000										
28...	147	230	<1	<1	E.8	<3	.2	.2	<.8	<1
JUN										
08...	--	--	--	--	E.5	<3	E.1	.1	--	--

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
APR 2000										
28...	5	5	180	224	<1	<1	9	13	<.2	<.3
JUN										
08...	3	3	--	--	<1	<1	--	--	--	--

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
APR 2000									
28...	<1	<1	<.2	<1	57	55	5	.01	82
JUN									
08...	--	--	--	--	56	56	3	.01	72

E--Estimated.

TENMILE CREEK BASIN

462657112143501 BANNER CREEK AT BRIDGE, 0.5 MILE ABOVE CITY DIVERSION, NEAR RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°23'57", long 112°15'25", in NW$^1/_4$ NW$^1/_4$ SW$^1/_4$ 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 to June 2000.

WATER-QUALITY DATA, WATER YEARS OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
APR 2000												
28...	1240	3.0	7.2	50	10.0	2.0	20	6.0	1.2	.7	.1	1.4
JUN												
08...	0945	2.0	7.2	56	15.5	8.5	22	6.5	1.3	--	--	--
20...	1300	1.9	7.4	55	13.0	9.5	20	6.2	1.2	--	--	--

DATE	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
APR 2000												
28...	15	E.2	<.1	9.2	7.5	104	303	<1	<1	1	E2	.2
JUN												
08...	--	--	--	--	--	--	--	--	--	E.9	E2	<.1
20...	--	--	--	--	--	--	--	--	--	E.8	<3	<.1

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
APR 2000											
28...	.1	<.8	<1	4	5	330	726	<1	2	92	90
JUN											
08...	<.1	--	--	2	2	--	--	<1	1	--	--
20...	.1	--	--	2	3	--	--	<1	<1	--	--

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
APR 2000											
28...	<.2	<.3	<1	<1	<.2	<1	31	34	12	.10	57
JUN											
08...	--	--	--	--	--	--	22	24	3	.02	88
20...	--	--	--	--	--	--	20	20	4	.02	78

E--Estimated.

TENMILE CREEK BASIN

462838112143901 POISON CREEK AT MOUTH, NEAR RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°28'38", long 112°14'39", in $SW^1/_4$ $NW^1/_4$ $NW^1/_4$ 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.--May1999 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAY 2000												
02...	0945	0.11	4.2	248	17.0	6.0	66	20	3.9	2.2	.2	3.2
JUN												
08...	1130	0.04	4.0	262	21.0	12.0	65	19	4.1	--	--	--
20...	1200	0.06	4.0	279	15.0	7.0	62	18	4.1	--	--	--
AUG												
02...	1230	0.02	4.1	274	29.5	13.5	65	19	4.2	2.3	.2	3.6

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
MAY 2000											
02...	1.1	.2	30	100	1650	1530	1	2	9	27	38
JUN											
08...	--	--	--	--	--	--	--	--	8	9	34
20...	--	--	--	--	--	--	--	--	13	9	34
AUG											
02...	.9	.2	42	110	1910	1700	1	1	9	12	38

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
MAY 2000											
02...	36	<.8	<1	269	261	150	225	66	75	2340	2040
JUN											
08...	38	--	--	346	313	--	--	85	90	--	--
20...	33	--	--	362	326	--	--	82	87	--	--
AUG											
02...	36	<.8	<1	384	336	190	177	104	107	2210	2150

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000											
02...	<.2	<.3	11	10	<.20	<1	4410	4160	3	<.01	90
JUN											
08...	--	--	--	--	--	--	4660	4110	1	<.01	60
20...	--	--	--	--	--	--	4410	4360	1	<.01	89
AUG											
02...	<.2	<.3	12	12	.54	<1	4530	4530	1	<.01	89

TENMILE CREEK BASIN

462853112144101 TENMILE CREEK ABOVE CITY DIVERSION, NEAR RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°28'53", long 112°14'10", in NW$^1/_4$ NW$^1/_4$ NW$^1/_4$ 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.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAY 2000												
02...	1100	11	7.2	46	14.0	6.0	15	4.5	.98	1.1	.2	2.0
JUN												
08...	1200	7.2	7.3	53	23.5	12.0	19	5.5	1.2	--	--	--
20...	1040	7.9	7.5	52	14.0	7.0	18	5.5	1.1	--	--	--
AUG												
03...	1130	5.0	7.5	46	27.0	14.5	16	4.8	1.1	.9	.1	1.4

DATE	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
MAY 2000												
02...	10	E.2	.1	13	8.8	92	184	<1	<1	3	4	.7
JUN												
08...	--	--	--	--	--	--	--	--	--	4	5	.6
20...	--	--	--	--	--	--	--	--	--	4	4	.6
AUG												
03...	13	E.2	<.1	10	7.2	37	145	<1	<.9	5	7	.6

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
MAY 2000											
02...	.7	<.8	<1	6	6	110	212	2	3	30	30
JUN											
08...	.6	--	--	4	4	--	--	<1	2	--	--
20...	.8	--	--	5	6	--	--	<1	2	--	--
AUG											
03...	.7	<.8	<1	4	4	91	305	<1	3	32	34

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000											
02...	<.2	<.3	<1	<1	<.2	<1	118	108	2	.06	94
JUN											
08...	--	--	--	--	--	--	123	116	2	.04	62
20...	--	--	--	--	--	--	130	137	2	.04	73
AUG											
03...	<.2	<.3	<1	<1	<.2	<1	136	139	4	.05	86

E--Estimated.

TENMILE CREEK BASIN

462758112123001 BEAVER CREEK TRIBUTARY NO. 2, NEAR RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°27'58", long 112°12'30, in $SW^1/_4$ $SE^1/_4$ $SE^1/_4$ 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 to August 2000.

WATER-QUALITY DATA, WATER YEARS OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
APR 2000										
28...	1730	0.39	6.6	53	5.0	2.0	17	5.3	.92	1.4
JUN										
09...	1445	0.24	7.8	57	17.0	7.0	20	6.3	1.0	--
20...	1500	0.40	7.1	56	17.0	7.0	18	5.6	.92	--
AUG										
03...	0930	0.10	7.5	61	22.0	8.0	20	6.1	1.1	1.5

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
APR 2000										
28...	.2	2.3	15	E.2	<.1	14	8.9	--	--	--
JUN										
09...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
AUG										
03...	.2	2.4	16	.3	<.1	17	11	49	.07	.01

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
APR 2000										
28...	23	26	<1	<1	7	8	2	2	<.8	<1
JUN										
09...	--	--	--	--	7	7	2	2	--	--
20...	--	--	--	--	6	7	2	2	--	--
AUG										
03...	9	21	<1	<.9	7	8	2	2	<.8	<1

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
APR 2000										
28...	11	10	20	29	<1	<1	<1	E2	<.2	<.3
JUN										
09...	7	7	--	--	<1	<1	--	--	--	--
20...	8	8	--	--	<1	<1	--	--	--	--
AUG										
03...	5	6	E9	E16	<1	<1	<1	<3	<.2	<.3

E--Estimated.

TENMILE CREEK BASIN

462758112123001 BEAVER CREEK TRIBUTARY NO. 2, NEAR RIMINI, MT--Continued

WATER-QUALITY DATA, WATER YEARS OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
APR 2000									
28...	<1	<1	<.2	<1	284	251	1	<.01	50
JUN									
09...	--	--	--	--	238	252	1	<.01	75
20...	--	--	--	--	252	228	1	<.01	67
AUG									
03...	<1	<1	<.2	<1	244	237	2	<.01	67

TENMILE CREEK BASIN

462913112144101 SUZIE LODE ADIT DISCHARGE, AT RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°29'13", long 112°14'41", in SE$^1/_4$ NW$^1/_4$ SE$^1/_4$ sec. 33 , T. 9 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, at adit discharge from pipe, at culvert crossing on Rimini Road in Rimini.
DRAINAGE AREA.--None.
PERIOD OF RECORD.--May to June 2000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAY 2000											
02...	1220	.013	4.6	1900	16.0	11.0	890	220	86	4.8	.4
JUN											
08...	1310	.003	4.9	1920	28.0	19.0	900	210	88	--	--
20...	1130	.008	4.9	1950	15.0	9.5	870	210	85	--	--

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)
MAY 2000											
02...	26	1.2	.8	42	1300	2990	2990	<1	<1	7600	7600
JUN											
08...	--	--	--	--	--	--	--	--	--	7300	10000
20...	--	--	--	--	--	--	--	--	--	6400	9000

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
MAY 2000										
02...	300	250	E.5	<1	156	124	119000	110000	7	14
JUN										
08...	210	240	--	--	116	108	--	--	5	17
20...	260	240	--	--	101	121	--	--	7	10

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
MAY 2000										
02...	13200	13000	<.2	<.3	33	28	<.2	<1	32600	33900
JUN										
08...	--	--	--	--	--	--	--	--	23400	30900
20...	--	--	--	--	--	--	--	--	21800	32300

E--Estimated.

TENMILE CREEK BASIN

462922112145401 TENMILE CREEK BELOW SPRING CREEK, AT RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°29'22", long 112°14'54, in NW$^1/_4$ SW$^1/_4$ SW$^1/_4$ 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; data previous to water year 2000 not published but is available in files of the District office.

WATER-QUALITY DATA, WATER YEARS OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAY 2000												
02...	1350	6.4	7.0	53	12.0	9.0	18	5.1	1.2	1.1	.2	2.1
JUN												
08...	1335	0.33	6.8	118	28.5	19.0	40	11	3.2	--	--	--
20...	0915	1.6	7.5	75	12.0	8.0	26	7.3	1.8	--	--	--

DATE	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
MAY 2000												
02...	10	E.3	.1	14	11	96	191	<1	<1	10	27	1
JUN												
08...	--	--	--	--	--	--	--	--	--	13	66	7
20...	--	--	--	--	--	--	--	--	--	22	29	3

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
MAY 2000											
02...	1	<.8	<1	9	8	180	339	3	6	51	48
JUN											
08...	7	--	--	5	10	--	--	<1	9	--	--
20...	3	--	--	8	10	--	--	3	5	--	--

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000											
02...	<.2	<.3	<1	<1	<.2	<1	203	188	3	.05	96
JUN											
08...	--	--	--	--	--	--	871	841	--	--	--
20...	--	--	--	--	--	--	422	451	1	<.01	80

E--Estimated.

TENMILE CREEK BASIN

462932112145801 MOORES SPRING CREEK AT MOUTH, NEAR RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°29'32", long 112°14'58", in NW$^1/_4$ NW$^1/_4$ SW$^1/_4$ 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 to June 2000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
MAY 2000										
02...	1510	0.05	7.5	219	14.5	10.0	86	23	7.1	2.2
JUN										
08...	1445	0.04	--	225	27.5	15.6	89	24	7.3	--
20...	1015	0.04	7.8	228	13.0	7.5	89	24	7.5	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
MAY 2000										
02...	.3	5.4	34	.8	.1	21	63	143	.19	.02
JUN										
08...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
MAY 2000										
02...	110	131	1	1	40	49	5	5	<.8	<1
JUN										
08...	--	--	--	--	57	58	4	4	--	--
20...	--	--	--	--	46	58	5	5	--	--

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
MAY 2000										
02...	9	9	200	272	2	4	40	37	<.2	<.3
JUN										
08...	8	7	--	--	2	3	--	--	--	--
20...	7	7	--	--	2	7	--	--	--	--

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000									
02...	2	2	<.2	<1	709	660	1	<.01	71
JUN									
08...	--	--	--	--	584	535	2	<.01	57
20...	--	--	--	--	742	686	1	<.01	67

TENMILE CREEK BASIN

462917112165601 MINNEHAHA CREEK BELOW ARMSTRONG MINE, NEAR RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°29'17", long 112°16'56", in $SW^1/_4$ $SW^1/_4$ $NW^1/_4$ 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; data previous to WY 2000 not published but is available in files of the District office.

WATER-QUALITY DATA, WATER YEARS OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAY 2000												
03...	1200	0.84	7.6	67	22.0	7.0	20	5.5	1.5	1.0	.3	3.3
JUN												
09...	0850	0.43	7.4	75	12.5	8.5	23	6.5	1.7	--	--	--
21...	1000	0.62	7.2	71	10.0	7.0	20	5.7	1.5	--	--	--

DATE	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
MAY 2000												
03...	9.0	E.3	.1	21	17	223	201	<1	<1	8	8	6
JUN												
09...	--	--	--	--	--	--	--	--	--	10	10	6
21...	--	--	--	--	--	--	--	--	--	8	9	5

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
MAY 2000											
03...	5	<.8	<1	27	24	76	73	2	2	52	44
JUN											
09...	6	--	--	20	20	--	--	<1	<1	--	--
21...	5	--	--	18	18	--	--	<1	1	--	--

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000											
03...	<.2	<.3	2	2	<.2	<1	854	750	3	.01	35
JUN											
09...	--	--	--	--	--	--	926	950	1	<.01	60
21...	--	--	--	--	--	--	819	744	1	<.01	46

E--Estimated.

TENMILE CREEK BASIN

462918112170801 BEATTRICE MINE TRIBUTARY AT MOUTH, NEAR RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°29'18", long 112°17'08", in SW$^1/_4$ SW$^1/_4$ SW$^1/_4$ 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 Minneheha Creek, and 1.5 mi southwest of Rimini.

DRAINAGE AREA.--0.24 mi^2.

PERIOD OF RECORD.--May to June 2000.

WATER-QUALITY DATA, WATER YEARS OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAY 2000												
03...	1040	0.14	7.6	95	22.0	5.5	27	8.1	1.5	1.6	.5	5.3
JUN												
09...	0950	0.05	7.3	104	12.5	7.5	33	10	1.8	--	--	--
21...	0900	0.06	7.3	106	10.0	7.0	31	9.6	1.8	--	--	--

DATE	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
MAY 2000												
03...	8.1	E.2	.2	34	29	31	30	<1	4	E.7	<3	E.09
JUN												
09...	--	--	--	--	--	--	--	--	--	E.5	<3	<.1
21...	--	--	--	--	--	--	--	--	--	E.6	<3	<.1

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
MAY 2000											
03...	<.1	<.8	<1	11	10	23	28	<1	<1	<1	<3
JUN											
09...	<.1	--	--	8	8	--	--	<1	<1	--	--
21...	E.05	--	--	8	8	--	--	<1	<1	--	--

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000											
03...	<.2	<.3	<1	<1	<.2	<1	10	8	2	<.01	78
JUN											
09...	--	--	--	--	--	--	10	11	1	<.01	67
21...	--	--	--	--	--	--	13	9	1	<.01	71

E--Estimated.

TENMILE CREEK BASIN

463023112153701 MINNEHAHA CREEK ABOVE CITY DIVERSION, NEAR RIMINI, MT

WATER-QUALITY RECORDS

LOCATION.--Lat 46°30'23", long 112°15'37", in NW$^1/_4$ NW$^1/_4$ SE$^1/_4$ 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.

WATER-QUALITY DATA, WATER YEARS OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
MAY 2000										
03...	1340	2.5	7.7	62	19.0	8.0	18	5.3	1.3	1.2
JUN										
09...	1145	1.2	7.5	67	14.5	10.0	22	6.5	1.5	--
21...	1115	1.6	7.6	65	22.5	9.5	20	5.6	1.3	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
MAY 2000										
03...	.3	3.2	13	.3	.1	22	12	53	.07	.36
JUN										
09...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
MAY 2000										
03...	35	113	<1	<1	3	3	1	2	<.8	<1
JUN										
09...	--	--	--	--	3	3	1	1	--	--
21...	--	--	--	--	3	3	1	2	--	--

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
MAY 2000										
03...	8	8	24	93	<1	<1	<1	E3	<.2	<.3
JUN										
09...	6	5	--	--	<1	<1	--	--	--	--
21...	6	6	--	--	<1	1	--	--	--	--

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000									
03...	<1	<1	<.2	<1	248	230	1	.01	67
JUN									
09...	--	--	--	--	228	238	2	.01	91
21...	--	--	--	--	246	231	1	<.01	78

E--Estimated.

TENMILE CREEK BASIN

06062500 TENMILE CREEK NEAR RIMINI, MT

LOCATION.--Lat 46°31'27", long 112°15'22", in $NE^1/_4SW^1/_4NE^1/_4$ 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. Datum of gage is 4,850 ft above sea level, from topographic map. Prior to Dec. 17, 1934, water-stage recorder at site 40 ft downstream at different datum and different control.

REMARKS.--Records good except those below 1.0 ft^3/s and those for estimated daily discharges, which are fair. Flow regulated by Chessman and Scott Reservoirs on tributaries upstream from station, combined capacity, 2,340 ac-ft. Small diversions upstream from station for water supply for city of Helena. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.28	.42	e.50	e.34	.33	.29	.79	6.3	6.6	.93	.14	.21
2	.30	.37	e.40	e.32	.41	.27	.89	9.8	6.4	3.9	.14	.25
3	.38	.61	e.35	e.30	.44	.32	.83	11	5.4	7.9	.15	.28
4	.36	.53	e.36	e.32	.39	.40	1.5	15	3.5	13	.22	.33
5	.30	.42	e.38	e.34	.33	.43	3.7	15	2.3	4.2	.31	.36
6	.29	.78	e.42	.36	.34	.38	2.5	14	1.6	1.7	.20	.35
7	.28	.91	e.46	.37	.34	.73	1.6	11	1.2	.88	.17	.31
8	.27	.82	.47	.37	.34	.62	1.3	7.2	.98	.75	.18	.26
9	.56	.47	.45	.37	.36	.44	1.9	8.3	.79	.62	.18	.52
10	.88	.41	.43	.36	.30	.43	2.6	8.2	.76	.53	.18	.42
11	.85	.43	.38	.36	.27	.41	3.2	8.3	2.0	.47	.19	.65
12	.58	.54	.44	.35	.30	.41	5.1	5.6	.96	.43	.15	.45
13	.36	.54	.41	.33	.28	.42	8.4	3.7	2.1	.41	.06	.37
14	.34	.54	.41	.34	.29	.45	6.7	2.7	.88	.37	.03	.37
15	.45	.53	.40	.36	.30	.40	5.4	2.7	12	.34	.01	.35
16	.68	.46	.40	.36	.33	.41	4.7	2.4	12	.36	.01	.35
17	.88	.46	.37	.35	.37	.42	7.7	8.4	8.7	.34	.00	.36
18	1.0	.50	.33	.33	.39	.40	9.6	5.0	6.2	.31	.00	.34
19	.69	.48	.32	.33	.40	.47	11	3.8	4.4	.28	.00	.36
20	.45	.74	.34	.33	.36	.47	12	2.9	3.1	.26	.03	.37
21	.41	.62	.34	.34	.29	.47	14	2.9	2.4	.23	.11	.58
22	.39	.53	.33	.34	.31	.58	17	2.7	1.1	.20	.13	.64
23	.37	.41	.32	.34	.38	.64	19	2.2	.96	.20	.14	.59
24	.36	e.40	.37	.33	.42	.60	13	1.7	.77	.16	.14	.60
25	.34	e.44	.36	.34	.43	.68	11	1.0	.73	.15	.16	.67
26	.34	e.50	e.34	.33	.36	.98	12	.86	.64	.16	.15	.67
27	.54	e.44	e.32	.33	.33	.99	11	.77	.55	.17	.15	.48
28	.89	e.40	e.30	.31	.33	1.5	11	5.0	.48	.15	.15	.47
29	1.3	e.40	e.32	e.30	.30	1.3	9.7	3.4	.44	.15	.16	.47
30	.86	e.70	e.36	e.30	---	.88	7.7	4.6	.40	.19	.17	.52
31	.52	---	e.36	e.30	---	.75	---	14	---	.16	.20	---
TOTAL	16.50	15.80	11.74	10.45	10.02	17.94	216.81	190.43	90.34	39.90	4.01	12.95
MEAN	.53	.53	.38	.34	.35	.58	7.23	6.14	3.01	1.29	.13	.43
MAX	1.3	.91	.50	.37	.44	1.5	19	15	12	13	.31	.67
MIN	.27	.37	.30	.30	.27	.27	.79	.77	.40	.15	.00	.21
AC-FT	33	31	23	21	20	36	430	378	179	79	8.0	26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2000, BY WATER YEAR (WY)*

MEAN	3.14	2.38	1.81	1.49	1.36	2.56	18.0	84.2	73.7	12.5	2.59	2.39
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	.19	.22	.17	.14	.10	.17	1.50	6.14	3.01	.34	.13	.23
(WY)	1974	1941	1941	1941	1936	1937	1975	2000	2000	1985	2000	1935

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1915 - 2000*	
ANNUAL TOTAL	4192.20		636.89			
ANNUAL MEAN	11.5		1.74		17.1	
HIGHEST ANNUAL MEAN					53.1	1917
LOWEST ANNUAL MEAN					1.74	2000
HIGHEST DAILY MEAN	189	Jun 3	19	Apr 23	1880	May 22 1981
LOWEST DAILY MEAN	.25	Sep 24	.00	Aug 17	.00	Aug 31 1931
ANNUAL SEVEN-DAY MINIMUM	.28	Sep 22	.01	Aug 14	.00	Aug 31 1931
INSTANTANEOUS PEAK FLOW			29	Jul 3	3290	May 22 1981
INSTANTANEOUS PEAK STAGE			2.11	Jul 3	6.20	May 22 1981
ANNUAL RUNOFF (AC-FT)	8320		1260		12380	
10 PERCENT EXCEEDS	29		6.2		52	
50 PERCENT EXCEEDS	.89		.42		2.0	
90 PERCENT EXCEEDS	.36		.20		.40	

*--During period of operation (1915-1994, May 1997 to current year).
e--Estimated.

TENMILE CREEK BASIN

06062750 TENMILE CREEK AT TENMILE WATER TREATMENT PLANT, NEAR RIMINI, MT

LOCATION (REVISED).--Lat 46°34'22", long 112°12'52", in NE$^1/_4$SW$^1/_4$SE$^1/_4$ 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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,425 ft, revised, above sea level, from topographic map.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Small diversions upstream from station for water supply for city of Helena.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	1.1	e.80	e1.5	e1.1	e.70	1.2	3.3	4.8	.09	.00	.00
2	.33	.84	e.70	e1.4	e1.4	e.65	1.8	5.2	3.5	3.3	.00	.00
3	.39	1.2	e.50	e1.4	e1.3	e.80	1.2	6.6	3.0	3.8	.00	.00
4	.48	1.1	e.42	e1.3	e1.2	e.90	2.2	9.8	1.8	16	.00	.00
5	.24	1.1	e.50	e1.2	e1.0	e.70	7.2	10	1.5	5.0	.00	.00
6	.17	1.1	e.60	e1.2	e1.1	e1.0	5.4	10	1.3	1.6	.00	.00
7	.14	1.5	e.70	e1.3	e1.1	e1.2	3.2	7.5	.95	.75	.00	.00
8	.18	1.5	.91	e1.4	e1.2	e.80	2.7	4.2	.57	.43	.00	.00
9	.54	1.3	1.0	e1.3	e1.1	e.80	3.3	4.4	.52	.20	.00	.00
10	.90	1.0	e.90	e1.2	e.90	e.65	5.6	5.5	.46	.09	.00	.00
11	1.1	.96	e1.1	e1.3	e1.0	e.65	6.1	5.5	1.1	.00	.00	.00
12	.81	.93	e1.1	e1.2	e1.0	e.70	8.5	4.1	.93	.00	.00	.00
13	.55	.85	e1.0	e1.2	e1.0	e.65	14	2.5	1.4	.00	.00	.01
14	.50	.84	e1.1	e1.2	e1.1	1.3	11	1.7	1.0	.00	.00	.00
15	.70	.82	e1.1	e1.3	e1.1	.70	8.2	2.1	9.8	.00	.00	.00
16	1.2	.82	e1.1	e1.3	e1.2	1.1	7.0	3.3	14	.00	.00	.00
17	1.3	.79	e1.0	e1.1	e1.2	.68	10	7.9	8.8	.00	.00	.00
18	1.6	.91	e1.1	e1.2	e1.3	.89	9.9	6.1	7.0	.00	.00	.00
19	1.6	.79	e.90	e1.1	e1.2	1.1	8.4	4.7	5.0	.00	.00	.00
20	1.1	1.0	e1.0	e1.2	e1.1	.47	9.9	3.5	3.5	.00	.00	.00
21	.78	.93	e1.1	e1.2	e1.1	.82	11	3.1	2.8	.00	.00	.00
22	.71	.62	e1.3	e1.2	e1.2	1.1	14	3.2	1.2	.00	.00	.00
23	.78	.44	e1.4	e1.2	e1.3	.66	19	2.4	.95	.00	.00	.00
24	.78	e.60	e1.5	e1.2	e1.3	.69	11	2.1	.66	.00	.00	.09
25	.75	e.80	e1.3	e1.1	e1.1	.71	6.9	1.5	.60	.00	.00	.41
26	.67	e.90	e1.3	e1.1	e.90	.78	6.8	1.1	.51	.00	.00	.75
27	.98	e.80	e1.3	e1.1	e.80	1.9	8.1	.66	.35	.00	.00	.61
28	1.7	e.70	e1.2	e1.1	e.90	3.5	8.3	3.7	.18	.00	.00	.27
29	2.7	e.70	e1.3	e1.0	e.80	2.7	6.7	2.9	.08	.00	.00	.12
30	1.8	e1.4	e1.4	e.95	---	1.5	5.1	4.2	.05	.00	.00	.02
31	1.2	---	e1.5	e.95	---	1.1	---	11	---	.00	.00	---
TOTAL	26.95	28.34	32.13	37.40	32.00	31.90	223.7	143.76	78.31	31.26	0.00	2.28
MEAN	.87	.94	1.04	1.21	1.10	1.03	7.46	4.64	2.61	1.01	.000	.076
MAX	2.7	1.5	1.5	1.5	1.4	3.5	19	11	14	16	.00	.75
MIN	.14	.44	.42	.95	.80	.47	1.2	.66	.05	.00	.00	.00
AC-FT	53	56	64	74	63	63	444	285	155	62	.00	4.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2000, BY WATER YEAR (WY)

MEAN	2.78	2.71	2.09	1.75	1.41	4.33	14.5	75.4	65.2	18.3	2.89	.83
MAX	5.84	4.29	3.61	2.20	1.64	6.85	21.0	156	102	50.3	4.97	1.86
(WY)	1998	1998	1998	1998	1998	1999	1998	1997	1997	1998	1997	1997
MIN	.87	.94	1.04	1.21	1.10	1.03	7.46	4.64	2.61	1.01	.000	.076
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 2000 WATER YEAR		WATER YEARS 1997 - 2000	
ANNUAL TOTAL	668.03			
ANNUAL MEAN	1.83		12.7	
HIGHEST ANNUAL MEAN			20.6	1998
LOWEST ANNUAL MEAN			1.83	2000
HIGHEST DAILY MEAN	19	Apr 23	260	May 25 1997
LOWEST DAILY MEAN	.00	Jul 11	.00	Sep 22 1999
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 11	.00	Jul 11 2000
INSTANTANEOUS PEAK FLOW	a30	Jul 4	382	Jun 11 1997
INSTANTANEOUS PEAK STAGE	b2.74	Feb 23	3.34	Jun 11 1997
INSTANTANEOUS LOW FLOW			.00	Sep 22 1999
ANNUAL RUNOFF (AC-FT)	1330		9220	
10 PERCENT EXCEEDS	5.4		59	
50 PERCENT EXCEEDS	1.0		2.2	
90 PERCENT EXCEEDS	.00		.30	

a--Gage height, 1.59 ft.
b--Backwater from ice.
e--Estimated.

06062750 TENMILE CREEK AT TENMILE WATER TREATMENT PLANT, NEAR RIMINI, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1999 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
MAY 2000										
02...	1615	4.4	7.7	90	19.0	13.0	32	9.4	2.1	1.4
JUN										
08...	1545	0.53	7.9	145	29.5	19.5	54	16	3.4	--
20...	0820	3.9	7.9	127	11.5	9.5	46	13	3.0	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
MAY 2000										
02...	.3	3.3	21	1.1	.1	17	16	64	.09	.75
JUN										
08...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
MAY 2000										
02...	25	70	<1	<1	17	19	.7	.7	<.8	<1
JUN										
08...	--	--	--	--	22	23	.4	.7	--	--
20...	--	--	--	--	18	21	.6	.8	--	--

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
MAY 2000										
02...	6	6	58	135	<1	2	3	6	<.2	<.3
JUN										
08...	3	3	--	--	<1	<1	--	--	--	--
20...	3	4	--	--	<1	<1	--	--	--	--

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000									
02...	<1	<1	<.2	<1	141	129	2	.02	80
JUN									
08...	--	--	--	--	96	96	3	.00	50
20...	--	--	--	--	143	139	3	.03	79

MISSOURI RIVER MAIN STEM

06065500 MISSOURI RIVER BELOW HAUSER DAM, NEAR HELENA, MT

LOCATION.--Lat 46°46'02", long 111°53'27", in $SE^1/_4NW^1/_4SW^1/_4$ 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 above sea level, from topographic map.

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4320	4070	4380	4700	4870	4830	4480	4280	3510	3080	3140	3240
2	4220	4070	4350	4660	4870	4830	4500	4310	3180	3110	3140	3170
3	4320	4060	4300	4660	4880	4840	4600	4330	3110	3210	3150	3180
4	4370	4070	4290	4650	4860	4930	4410	4440	3110	3210	3170	3180
5	4250	4160	4290	4660	4860	4870	4250	4400	3140	3210	3170	3190
6	4050	4230	4230	4650	4870	4800	4360	4370	3160	3240	3170	3190
7	3990	4240	4220	4650	4860	4870	4390	4320	3150	3270	3170	3180
8	4020	4250	4140	4650	4860	4900	4470	4280	3150	3280	3220	3180
9	4180	4430	4160	4650	4890	4910	4470	4290	3110	3250	3280	3190
10	4200	4520	4310	4650	4860	4990	4500	4290	3080	3230	3200	3190
11	4150	4450	4390	4650	4710	5120	4480	4300	3080	3220	3160	3190
12	4090	4400	4400	4650	4740	5120	4480	4300	3070	3220	3160	3180
13	4080	4300	4410	4640	4780	5120	4520	4290	3080	3200	3160	3190
14	4130	4230	4510	4670	4910	5100	4510	4290	3070	3210	3170	3190
15	4130	4190	4550	4650	4890	4970	4480	4290	3080	3240	3170	3190
16	4120	4110	4560	4650	4880	4900	4470	4330	3080	3240	3180	3200
17	4170	4130	4460	4650	4840	4910	4520	4390	3080	3270	3170	3190
18	4200	4140	4430	4640	4830	4900	4550	4400	3220	3310	3210	3210
19	4180	4200	4540	4660	4830	4910	4470	4410	3320	3300	3230	3120
20	4380	4270	4570	4640	4830	4910	4460	4410	3320	3300	3230	2970
21	4490	4260	4590	4640	4830	4900	4450	4400	3310	3300	3200	2960
22	4470	4240	4560	4660	4830	4830	4420	4400	3310	3270	3160	3000
23	4430	4180	4540	4650	4830	4790	4370	4400	3290	3260	3160	3110
24	4430	4140	4540	4650	4860	4790	4340	4380	3230	3260	3160	3240
25	4350	4170	4540	4650	4840	4790	4280	4320	3220	3180	3200	3310
26	4250	4250	4650	4650	4830	4860	4280	4250	3220	3140	3230	3260
27	4260	4250	4720	4650	4830	4880	4270	4120	3210	3140	3230	3250
28	4200	4230	4710	4650	4830	4890	4280	3980	3160	3140	3230	3410
29	4100	4300	4720	4640	4830	4900	4270	3910	3090	3130	3260	3770
30	4040	4360	4720	4630	---	4800	4260	3910	3070	3130	3310	3580
31	4040	---	4720	4740	---	4520	---	3820	---	3140	3290	---
TOTAL	130610	126900	138500	144290	140430	151680	132590	132610	95210	99690	99080	96410
MEAN	4213	4230	4468	4655	4842	4893	4420	4278	3174	3216	3196	3214
MAX	4490	4520	4720	4740	4910	5120	4600	4440	3510	3310	3310	3770
MIN	3990	4060	4140	4630	4710	4520	4250	3820	3070	3080	3140	2960
AC-FT	259100	251700	274700	286200	278500	300900	263000	263000	188800	197700	196500	191200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2000, BY WATER YEAR (WY)*

MEAN	3608	3692	3631	3593	3825	4532	5483	7327	8817	4450	3062	3286
MAX	6489	6021	5622	6665	8101	8271	9227	16340	23540	12020	5797	5684
(WY)	1998	1998	1996	1997	1997	1997	1942	1928	1927	1998	1998	1995
MIN	1944	1998	1935	1896	1666	2398	2585	2381	2546	1208	971	1495
(WY)	1935	1935	1935	1937	1938	1938	1938	1934	1934	1934	1934	1934

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1923 - 2000*	
ANNUAL TOTAL	2078500		1488000			
ANNUAL MEAN	5695		4066		4607	
HIGHEST ANNUAL MEAN					7862	1997
LOWEST ANNUAL MEAN					2381	1934
HIGHEST DAILY MEAN	11700	Jun 6	5120	Mar 11	33300	Jun 15 1927
LOWEST DAILY MEAN	3990	Oct 7	2960	Sep 21	280	Mar 3 1938
ANNUAL SEVEN-DAY MINIMUM	4060	Oct 29	3080	Jun 10	716	Aug 3 1934
INSTANTANEOUS PEAK FLOW			5150	Mar 13	33300	Jun 15 1927
INSTANTANEOUS PEAK STAGE			4.46	Mar 13	a78.80	Jun 15 1927
INSTANTANEOUS LOW FLOW					280	Mar 3 1938
ANNUAL RUNOFF (AC-FT)	4123000		2951000		3338000	
10 PERCENT EXCEEDS	7940		4840		7920	
50 PERCENT EXCEEDS	5380		4280		3900	
90 PERCENT EXCEEDS	4180		3160		2000	

*--During periods of operation (December 1922 to September 1942, October 1994 to present).
a--Site and datum then in use.

MISSOURI RIVER MAIN STEM

06066500 MISSOURI RIVER BELOW HOLTER DAM, NEAR WOLF CREEK, MT

LOCATION.--Lat 46°59'41", long 112°00'37", in $NE^1/_4SW^1/_4SE^1/_4$ 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.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,464.11 ft above sea level.

REMARKS.--Records good. 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. Several observations of water temperature and specific conductance were obtained during the year. Bureau of Reclamation satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4370	4230	4330	4760	5110	5070	4590	4310	3780	3180	3080	3310
2	4370	4230	4340	4730	5130	5060	4610	4260	3480	3210	3130	3270
3	4380	4220	4350	4740	5150	4970	4680	4290	3220	3290	3170	3250
4	4430	4240	4400	4760	5080	4960	4560	4420	3060	3290	3230	3170
5	4490	4270	4330	4780	5070	4960	4290	4410	3100	3280	3290	3130
6	4500	4270	4330	4790	5070	4940	4330	4400	3090	3240	3340	3110
7	4480	4280	4370	4780	5100	4950	4360	4310	3090	3220	3270	3140
8	4370	4280	4360	4780	5120	5020	4450	4260	3090	3210	3270	3140
9	4260	4320	4380	4720	5100	5010	4480	4280	3180	3210	3330	3170
10	4280	4470	4340	4780	5150	5090	4540	4300	3240	3240	3320	3170
11	4280	4530	4350	4780	5020	5180	4520	4300	3220	3260	3280	3170
12	4270	4510	4330	4780	4990	5160	4490	4300	3210	3260	3280	3160
13	4270	4500	4350	4790	5010	5210	4510	4300	3190	3250	3180	3130
14	4270	4500	4320	4840	5100	5250	4560	4300	3130	3220	2970	3110
15	4260	4490	4250	4790	5070	5140	4630	4320	3110	3190	2920	3140
16	4210	4420	4250	4770	5090	5050	4620	4320	3200	3200	3000	3150
17	4230	4200	4280	4760	5100	5050	4570	4340	3240	3230	3050	3170
18	4260	4110	4370	4780	5040	5050	4600	4410	3290	3240	3180	3180
19	4290	4130	4520	4880	5020	5000	4540	4400	3320	3280	3280	3080
20	4320	4190	4660	4840	4990	4980	4550	4400	3360	3300	3260	2970
21	4410	4240	4640	4840	4930	4970	4550	4380	3420	3290	3220	3010
22	4470	4220	4600	4870	4950	4940	4530	4390	3430	3300	3210	3040
23	4410	4100	4640	4850	4990	4840	4480	4370	3440	3300	3270	3050
24	4450	4240	4660	4860	5020	4830	4440	4310	3360	3300	3140	3060
25	4460	4250	4600	4860	5020	4870	4320	4290	3300	3330	3080	3100
26	4440	4260	4660	4850	5060	4890	4330	4210	3250	3320	3130	3140
27	4490	4300	4760	4870	5050	4970	4370	4020	3250	3230	3160	3140
28	4410	4290	4780	4870	5070	4960	4340	3910	3240	3140	3190	3190
29	4230	4330	4770	4870	5080	4980	4340	3910	3220	3090	3190	3510
30	4210	4360	4770	4870	---	4910	4350	3990	3210	3050	3250	3570
31	4220	---	4760	4980	---	4670	---	3970	---	3070	3290	---
TOTAL	134790	128980	138850	149220	146680	154930	134530	132380	97720	100220	98960	94930
MEAN	4348	4299	4479	4814	5058	4998	4484	4270	3257	3233	3192	3164
MAX	4500	4530	4780	4980	5150	5250	4680	4420	3780	3330	3340	3570
MIN	4210	4100	4250	4720	4930	4670	4290	3910	3060	3050	2920	2970
AC-FT	267400	255800	275400	296000	290900	307300	266800	262600	193800	198800	196300	188300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2000, BY WATER YEAR (WY)

MEAN	4568	4881	5089	5133	5086	5215	5687	6965	9285	6056	4332	4278
MAX	10140	8500	9645	6637	7954	9186	11130	15710	23370	16580	7590	10010
(WY)	1966	1966	1960	1997	1997	1968	1976	1948	1948	1975	1984	1984
MIN	2710	2968	3192	3522	3561	2757	2489	2063	1533	2454	1969	2077
(WY)	1954	1989	1989	1995	1960	1959	1959	1955	1955	1954	1954	1959

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1946 - 2000	
ANNUAL TOTAL	2103400		1512190			
ANNUAL MEAN	5763		4132		5546	
HIGHEST ANNUAL MEAN					8497	1984
LOWEST ANNUAL MEAN					3125	1954
HIGHEST DAILY MEAN	11500	Jun 6	5250	Mar 13	34000	Jun 8 1948
LOWEST DAILY MEAN	4080	Sep 20	2920	Aug 15	747	May 27 1962
ANNUAL SEVEN-DAY MINIMUM	4110	Sep 18	3060	Sep 19	1040	May 16 1957
INSTANTANEOUS PEAK FLOW			a5270	Mar 13	34800	Jun 8 1948
INSTANTANEOUS PEAK STAGE			3.55	Oct 1	11.70	Jun 8 1948
INSTANTANEOUS LOW FLOW					c250	Jul 26 1968
ANNUAL RUNOFF (AC-FT)	4172000		2999000		4018000	
10 PERCENT EXCEEDS	7960		5010		8240	
50 PERCENT EXCEEDS	5500		4320		4850	
90 PERCENT EXCEEDS	4260		3150		3090	

06066500 MISSOURI RIVER BELOW HOLTER DAM, NEAR WOLF CREEK, MT--Continued

SUMMARY STATISTICS	WATER YEARS 1946 - 1952*		WATER YEARS 1953 - 2000**	
ANNUAL TOTAL				
ANNUAL MEAN	5882		5497	
HIGHEST ANNUAL MEAN	7787	1948	8497	1984
LOWEST ANNUAL MEAN	4651	1946	3125	1954
HIGHEST DAILY MEAN	34000	Jun 8 1948	25600	Jun 20 1964
LOWEST DAILY MEAN	1560	Aug 31 1946	747	May 27 1962
ANNUAL SEVEN DAY MINIMUM	2310	Aug 2 1949	1040	May 16 1957
INSTANTANEOUS PEAK FLOW	34800	Jun 8 1948	27100	Jun 19 1964
INSTANTANEOUS PEAK STAGE	11.70	Jun 8 1948	10.04	Jun 19 1964
INSTANTANEOUS LOW FLOW	b742	Nov 25 1949	c250	Jul 26 1968
ANNUAL RUNOFF (AC-FT)	4261000		3982000	
10 PERCENT EXCEEDS	10800		8040	
50 PERCENT EXCEEDS	4520		4940	
90 PERCENT EXCEEDS	3350		3070	

*--Before Canyon Ferry completion.
**--After Canyon Ferry completion.
a--Gage height, 3.13 ft.
b--Gage height, 0.18 ft.
c--Probably less than; during power plant operation.

LITTLE PRICKLY PEAR CREEK BASIN

06071300 LITTLE PRICKLY PEAR CREEK AT WOLF CREEK, MT

LOCATION.--Lat 47°00'19", long 112°04'10", in $NE^1/_4NW^1/_4NE^1/_4$ 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. Datum of gage is 3,547.38 ft above sea level. May 10, 1962 to July 6, 1965, water-stage recorder on left bank at present datum. July 7, 1965 to Apr. 11, 1966, non-recording gage on bridge 0.25 mi upstream at datum 3.27 ft higher. Apr. 12, 1966 to Sept. 30, 1967, water-stage recorder on right bank 23 ft upstream at present datum.

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. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 7, 1975, reached a stage of 7.45 ft, present datum, from floodmarks, discharge, 4,500 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	40	44	55	e25	53	49	49	41	23	11	15
2	34	40	43	50	e28	53	54	48	36	25	10	16
3	35	40	42	43	e30	54	53	50	33	28	10	17
4	36	41	38	48	e27	56	54	47	33	33	11	18
5	35	41	36	53	e25	56	55	49	32	25	14	19
6	35	42	40	45	e27	52	58	52	31	27	13	17
7	33	40	47	49	e30	50	57	48	31	28	14	16
8	33	40	50	49	e32	51	54	45	27	26	15	15
9	33	39	46	48	e35	47	55	46	26	25	15	14
10	33	39	47	36	e30	48	58	46	25	23	15	15
11	33	40	48	e30	e28	48	59	45	22	19	17	16
12	35	39	50	e27	e26	47	60	39	22	16	17	17
13	34	37	54	e26	e25	48	69	35	25	15	16	17
14	35	36	50	e25	e25	47	79	37	22	15	15	17
15	36	37	57	e27	e26	47	78	35	26	14	15	17
16	39	37	59	e29	e28	47	70	34	37	14	15	16
17	41	36	59	e30	e30	47	63	35	46	14	14	17
18	40	37	59	e27	e32	45	61	33	39	13	14	17
19	38	36	56	e25	e35	46	65	32	34	12	15	18
20	38	37	54	e25	41	46	68	31	33	13	15	20
21	37	37	57	e27	47	44	74	30	31	13	15	22
22	37	37	55	e25	49	44	77	30	31	14	15	23
23	38	36	52	e23	52	45	83	27	27	14	15	23
24	39	36	44	e22	53	45	85	25	26	14	14	22
25	40	39	40	e22	51	45	79	23	27	14	14	22
26	39	51	34	e23	45	47	76	23	26	12	14	22
27	44	52	35	e21	47	47	69	25	24	12	14	21
28	45	47	40	e19	50	52	65	25	21	12	14	22
29	44	43	48	e17	52	53	64	22	21	12	14	23
30	42	43	54	e16	---	51	53	26	22	12	14	22
31	41	---	54	e20	---	49	---	46	---	12	15	---
TOTAL	1155	1195	1492	982	1031	1510	1944	1138	877	549	439	556
MEAN	37.3	39.8	48.1	31.7	35.6	48.7	64.8	36.7	29.2	17.7	14.2	18.5
MAX	45	52	59	55	53	56	85	52	46	33	17	23
MIN	33	36	34	16	25	44	49	22	21	12	10	14
AC-FT	2290	2370	2960	1950	2040	3000	3860	2260	1740	1090	871	1100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)*

MEAN	55.1	56.4	52.8	46.1	65.6	68.8	140	253	218	87.4	48.2	52.7
MAX	131	98.5	74.9	69.1	190	102	372	580	684	175	95.4	127
(WY)	1966	1966	1966	1965	1996	1996	1965	1965	1967	1965	1993	1965
MIN	29.5	31.5	31.2	30.8	29.9	43.9	64.8	35.5	25.5	17.7	14.2	18.5
(WY)	1993	1993	1993	1993	1993	1964	2000	1992	1992	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000*	
ANNUAL TOTAL	26564		12868			
ANNUAL MEAN	72.8		35.2		94.6	
HIGHEST ANNUAL MEAN					179	1965
LOWEST ANNUAL MEAN					35.2	2000
HIGHEST DAILY MEAN	384	Jun 4	85	Apr 24	2440	Jun 9 1964
LOWEST DAILY MEAN	28	Sep 25	10	Aug 2	10	Aug 13 1992
ANNUAL SEVEN-DAY MINIMUM	30	Sep 21	11	Jul 29	11	Jul 29 2000
INSTANTANEOUS PEAK FLOW			90	Apr 24	3110	Jun 9 1964
INSTANTANEOUS PEAK STAGE			3.20	Apr 24	7.65	Jun 9 1964
INSTANTANEOUS LOW FLOW			a9.6	Aug 2	a9.6	Aug 2 2000
ANNUAL RUNOFF (AC-FT)	52690		25520		68500	
10 PERCENT EXCEEDS	137		54		191	
50 PERCENT EXCEEDS	50		35		58	
90 PERCENT EXCEEDS	34		15		30	

*--During periods of operation (May 1962 to September 1967, October 1991 to current year).
a--Gage height, 2.54 ft.
e--Estimated.

DEARBORN RIVER BASIN

06073500 DEARBORN RIVER NEAR CRAIG, MT

LOCATION.--Lat 47°11'57", long 112°05'44", in NW$^1/_4$ NW$^1/_4$ SE$^1/_4$ 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 above sea level, from topographic map. 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, all at same previous datum.

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	60	61	e45	e40	49	51	192	155	56	13	13
2	31	61	61	e30	e38	48	58	228	154	49	12	14
3	31	60	60	e20	e35	47	57	258	161	46	13	14
4	29	60	e50	e30	e30	47	55	225	181	45	13	17
5	29	61	e55	e40	e32	48	57	211	197	40	14	19
6	29	60	e55	e43	e35	49	62	194	167	39	14	18
7	28	58	e50	e45	e38	47	64	174	156	37	13	17
8	28	58	e45	e45	e40	48	64	158	150	38	13	15
9	33	58	e40	e45	e35	45	64	150	147	39	13	14
10	38	57	e45	e42	e27	46	66	146	134	34	13	14
11	40	57	e45	e40	e23	46	72	129	120	31	17	15
12	41	56	e43	e38	e25	44	76	120	105	29	17	15
13	42	55	e40	e36	e27	45	87	113	94	29	15	15
14	41	55	e42	e35	e30	44	103	105	87	27	14	17
15	44	56	e45	e37	e28	44	101	87	92	27	14	19
16	47	57	e50	e40	e25	44	103	81	107	23	13	21
17	45	58	e50	e45	e22	43	105	82	119	22	14	22
18	44	59	e45	e43	e20	42	113	89	110	21	14	23
19	44	58	e40	e40	e30	45	134	103	107	20	13	26
20	43	57	e40	e40	e45	44	160	108	103	20	13	31
21	42	57	e42	e42	e50	42	187	107	91	20	13	36
22	42	56	e45	e40	e50	43	219	114	85	18	13	41
23	42	55	e50	e38	e45	44	251	123	81	17	12	38
24	42	63	e50	e40	e40	44	224	119	76	16	12	37
25	42	60	e48	e40	e42	44	193	110	76	16	12	36
26	42	64	e45	e42	44	43	173	108	72	15	11	36
27	55	65	e47	e40	48	44	159	103	70	14	11	36
28	50	63	e50	e38	50	49	160	98	67	14	11	36
29	50	61	e48	e37	51	51	197	101	74	14	12	36
30	54	61	e45	e37	---	53	195	103	59	13	12	36
31	58	---	e45	e38	---	51	---	144	---	13	13	---
TOTAL	1256	1766	1477	1211	1045	1423	3610	4183	3397	842	407	727
MEAN	40.5	58.9	47.6	39.1	36.0	45.9	120	135	113	27.2	13.1	24.2
MAX	58	65	61	45	51	53	251	258	197	56	17	41
MIN	28	55	40	20	20	42	51	81	59	13	11	13
AC-FT	2490	3500	2930	2400	2070	2820	7160	8300	6740	1670	807	1440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2000, BY WATER YEAR (WY)*

MEAN	76.0	77.3	69.1	58.3	63.3	87.2	241	710	795	218	69.4	58.8
MAX	187	165	155	104	184	187	519	1337	2104	583	163	230
(WY)	1966	1947	1947	1947	1996	1947	1969	1995	1964	1951	1951	1993
MIN	17.0	36.4	36.4	30.0	35.9	39.9	51.0	135	113	27.2	13.1	18.8
(WY)	1957	1957	1963	1950	1964	1964	1961	2000	2000	2000	2000	1956

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1946 - 2000*	
ANNUAL TOTAL	54463		21344			
ANNUAL MEAN	149		58.3		210	
HIGHEST ANNUAL MEAN					363	1948
LOWEST ANNUAL MEAN					58.3	2000
HIGHEST DAILY MEAN	1110	Jun 4	258	May 3	12500	Jun 9 1964
LOWEST DAILY MEAN	26	Sep 24	11	Aug 26	8.5	Aug 17 1961
ANNUAL SEVEN-DAY MINIMUM	28	Sep 20	12	Aug 23	11	Aug 14 1961
INSTANTANEOUS PEAK FLOW			276	Apr 23	b15400	Jun 9 1964
INSTANTANEOUS PEAK STAGE			3.47	Apr 23	c13.50	Jun 9 1964
INSTANTANEOUS LOW FLOW			a10	Aug 26	8.0	Aug 17 1961
ANNUAL RUNOFF (AC-FT)	108000		42340		152100	
10 PERCENT EXCEEDS	447		120		565	
50 PERCENT EXCEEDS	57		45		77	
90 PERCENT EXCEEDS	33		14		36	

*--During periods of operation (October 1945 to September 1969, October 1993 to current year).
a--Gage height, 1.93 ft.
b--From rating curve extended above 7,000 ft^3/s on basis of slope-area measurement of peak flow.
c--From floodmarks.
e--Estimated.

06073500 DEARBORN RIVER NEAR CRAIG, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--August to September 1991, November 1993 to current year.
INSTRUMENTATION.--Temperature recorder installed Nov. 3, 1993.
REMARKS.--Temperature record complete for water year. Unpublished records of instantaneous water temperature and specific conductance for many days are available in files of the District office.
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, 28.5°C, Aug. 1, 2; minimum, 0.0°C on many days November to April.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
09...	0945	57	8.4	338	10.0	5.0	.011
APR 2000							
04...	0845	56	8.3	334	5.0	5.5	<.001
JUN							
02...	1045	163	8.4	292	19.0	11.0	<.001
AUG							
10...	1130	13	8.3	319	26.0	18.5	<.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
09...	--	.30	<.001	.008	18	2.8	85
APR 2000							
04...	<.005	<.10	<.001	<.008	2	.30	81
JUN							
02...	<.005	.18	<.001	E.004	3	1.3	71
AUG							
10...	<.005	.10	<.001	<.008	14	.49	90

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999											
09...	0945	180	50	14	.8	.1	2.9	175	.5	.2	6.3
JUN 2000											
02...	1045	150	42	12	.7	.1	1.9	162	1.6	.1	5.1

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
09...	14	206	.28	31.8	<3	<.1	<1	3	<1	<2	<31
JUN 2000											
02...	11	171	.23	75.3	<3	<.1	<1	<1	<1	<1	3

E--Estimated.

DEARBORN RIVER BASIN

06073500 DEARBORN RIVER NEAR CRAIG, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.5	6.0	7.5	6.5	2.5	4.0	4.0	2.0	3.0	1.0	.0	.5
2	8.0	4.0	5.5	6.0	1.5	3.5	2.5	1.0	2.0	.5	.0	.0
3	12.5	2.5	6.5	8.5	4.0	6.0	2.0	.0	1.0	.5	.0	.0
4	15.0	6.5	10.0	6.5	3.0	5.5	1.0	.0	.5	.5	.0	.0
5	13.5	5.5	9.5	6.0	1.0	3.5	1.0	.0	.5	.5	.0	.0
6	12.5	7.5	10.0	8.5	5.0	6.5	2.0	.0	1.0	.5	.0	.0
7	11.0	8.0	9.0	8.0	5.5	6.5	1.0	.0	.5	.5	.0	.0
8	13.5	8.0	10.5	9.0	4.0	6.0	1.0	.0	.0	.5	.0	.0
9	12.5	8.0	10.0	8.5	5.0	6.5	.5	.0	.0	.5	.0	.0
10	12.0	4.5	8.0	8.0	4.5	6.0	.5	.0	.0	.5	.0	.0
11	11.5	6.0	8.5	8.5	5.0	6.5	.5	.0	.0	.0	.0	.0
12	13.0	6.0	9.0	11.0	6.5	8.5	2.0	.0	1.0	.0	.0	.0
13	15.0	8.0	11.0	11.0	7.5	9.0	2.0	.0	1.0	.0	.0	.0
14	12.5	7.0	9.5	10.0	6.5	8.5	.5	.0	.5	.0	.0	.0
15	7.0	4.0	5.5	8.0	4.0	6.0	.5	.0	.0	.5	.0	.0
16	8.0	1.0	4.5	8.0	5.0	6.0	4.5	.5	2.0	.5	.0	.0
17	6.0	4.0	5.0	7.0	3.0	5.0	2.5	.0	1.5	.5	.0	.0
18	9.0	5.5	6.5	6.5	3.5	5.0	3.0	.0	1.0	.5	.0	.0
19	10.5	3.0	6.5	4.0	2.0	3.0	.5	.0	.0	.5	.0	.0
20	11.5	4.5	7.5	6.5	2.5	4.0	.5	.0	.0	.5	.0	.0
21	12.5	6.0	9.0	3.5	.5	2.0	.5	.0	.5	.5	.0	.5
22	11.5	5.0	8.0	3.5	.5	1.5	1.5	.0	.5	.5	.0	.0
23	11.0	5.0	7.5	2.0	.0	.5	.5	.0	.5	.5	.0	.0
24	10.5	6.5	8.0	2.0	.0	1.0	.5	.0	.5	.5	.0	.0
25	9.5	5.5	7.5	4.5	1.5	3.0	.5	.0	.0	.5	.0	.0
26	11.0	6.5	8.5	3.5	1.0	3.0	.5	.0	.0	.5	.0	.0
27	9.5	5.5	7.0	2.0	.0	1.0	1.0	.0	.5	.5	.0	.0
28	9.5	6.0	7.5	4.0	.5	2.0	1.0	.0	.5	.5	.0	.0
29	9.0	5.0	6.5	4.5	1.5	3.0	2.0	.0	.5	.5	.0	.0
30	10.0	4.5	7.0	6.0	3.0	4.0	1.5	.0	.5	.5	.0	.0
31	9.0	4.0	6.5	---	---	---	2.0	.0	1.0	.5	.0	.0
MONTH	15.0	1.0	8.0	11.0	0.0	4.5	4.5	0.0	0.5	1.0	0.0	0.0
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.0	8.5	2.5	5.0	10.0	3.0	6.0	16.5	8.5	12.5
2	.5	.0	.0	8.5	1.0	4.5	9.5	3.0	5.5	13.0	9.5	11.0
3	.5	.0	.0	9.0	2.5	5.5	11.0	1.0	6.0	14.0	8.0	11.0
4	.5	.0	.0	10.0	3.0	6.0	13.5	5.0	9.0	14.0	8.0	11.0
5	.5	.0	.0	6.0	1.5	3.5	11.5	3.0	7.0	13.0	8.0	10.5
6	1.0	.0	.5	7.5	.5	3.5	10.0	4.0	6.5	14.0	7.0	10.5
7	.5	.0	.5	6.5	2.0	3.5	11.5	2.0	6.5	14.0	6.0	10.0
8	4.0	.5	2.0	4.0	.0	2.0	14.0	4.0	8.5	12.5	6.0	9.5
9	5.5	.0	2.5	7.0	.0	3.0	14.5	5.0	9.5	14.5	8.0	10.5
10	.0	.0	.0	8.0	.5	3.5	12.0	6.0	8.5	13.5	7.0	10.0
11	.5	.0	.0	6.5	2.0	3.5	13.5	5.5	9.0	13.5	7.0	9.5
12	.5	.0	.0	7.5	.5	3.5	11.0	5.5	8.5	14.0	7.0	10.0
13	.5	.0	.0	8.5	2.0	4.5	9.5	2.0	6.0	15.5	6.5	11.0
14	.0	.0	.0	8.0	2.5	4.5	7.5	.0	3.5	13.5	7.5	10.5
15	.5	.0	.0	6.5	.5	3.0	10.0	1.5	6.0	15.5	7.0	11.5
16	.5	.0	.0	3.5	.0	2.0	12.5	5.0	8.5	12.5	8.5	11.0
17	.5	.0	.0	4.5	.5	2.5	15.0	5.5	10.0	18.0	9.0	13.0
18	.5	.0	.0	5.0	.0	2.5	15.0	7.0	11.0	19.5	10.5	14.5
19	.5	.0	.5	9.0	2.0	4.5	14.0	6.5	10.5	15.0	10.5	12.5
20	.5	.0	.5	7.5	1.5	4.0	15.0	7.5	11.0	17.5	8.0	13.0
21	.5	.0	.5	8.5	.5	4.0	15.5	8.0	11.5	14.0	10.5	12.0
22	1.0	.0	.5	11.0	1.5	6.0	15.0	8.5	11.5	17.0	9.5	13.0
23	2.5	.0	1.0	6.5	3.0	4.5	12.0	7.0	9.5	18.0	10.0	13.0
24	2.0	.5	1.5	9.5	1.0	4.5	11.5	5.5	8.5	18.5	10.0	14.0
25	5.5	.0	2.0	10.0	2.0	5.5	9.5	4.5	7.0	18.0	11.0	14.5
26	5.5	.0	2.0	11.5	2.5	7.0	14.0	5.5	9.0	17.5	11.5	14.5
27	6.0	.5	3.0	13.5	4.5	8.0	15.5	6.5	11.0	18.0	10.5	14.0
28	6.5	1.5	4.0	10.0	5.0	7.5	13.5	8.5	10.5	18.5	10.5	14.5
29	7.5	1.0	4.0	7.0	2.5	4.5	11.5	6.0	8.5	14.5	11.0	12.5
30	---	---	---	10.0	3.0	6.0	14.5	5.5	9.5	14.5	10.0	11.5
31	---	---	---	10.5	1.5	6.0	---	---	---	11.0	6.0	8.0
MONTH	7.5	0.0	1.0	13.5	0.0	4.5	15.5	0.0	8.5	19.5	6.0	12.0

DEARBORN RIVER BASIN

06073500 DEARBORN RIVER NEAR CRAIG, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.5	5.5	10.0	22.5	15.5	18.5	28.5	17.5	22.5	19.5	14.0	16.0
2	18.0	8.5	13.0	24.5	14.5	19.0	28.5	17.0	22.0	17.5	12.5	15.0
3	18.0	11.0	14.0	19.0	14.0	16.0	26.0	15.5	20.5	18.0	9.0	13.5
4	18.5	10.0	14.0	21.5	11.5	16.0	21.5	16.5	18.5	19.5	11.5	14.5
5	18.0	11.5	15.0	20.0	12.0	16.0	25.0	14.5	19.5	22.0	13.0	16.5
6	19.0	12.0	15.5	21.0	13.5	16.5	24.5	14.5	19.5	17.5	11.0	13.5
7	20.5	12.5	16.5	18.0	12.5	15.5	25.5	14.5	20.0	19.5	10.0	14.0
8	20.5	13.5	16.5	25.0	12.0	17.0	26.5	14.5	20.5	19.0	11.5	14.5
9	16.0	12.0	14.0	25.5	14.0	19.5	25.0	15.0	19.5	15.5	9.0	12.5
10	17.0	10.0	13.5	25.0	15.5	19.5	20.5	15.5	18.5	13.0	9.5	11.0
11	17.0	9.5	13.5	24.5	13.0	19.0	23.5	16.0	19.0	18.5	9.5	13.5
12	14.0	11.5	12.5	25.5	13.5	19.0	24.5	13.0	18.5	21.0	10.5	15.0
13	16.5	10.0	13.0	25.0	15.0	20.0	24.5	14.0	19.0	21.5	12.5	16.5
14	15.5	11.5	13.5	26.5	15.5	20.5	25.0	14.0	19.0	21.5	11.5	16.5
15	14.5	11.0	13.0	25.0	15.5	20.0	23.5	13.0	18.0	22.5	12.5	17.0
16	17.0	10.5	13.0	26.5	13.5	19.5	24.5	12.5	18.0	20.5	13.5	16.5
17	19.0	10.5	14.5	24.5	15.0	19.0	23.0	12.5	17.5	22.5	13.0	17.0
18	19.0	12.0	15.5	25.0	15.0	19.5	23.0	13.5	17.5	16.5	13.5	15.0
19	17.0	13.0	14.5	26.5	16.0	20.5	22.5	13.0	17.5	15.5	11.5	13.0
20	20.0	11.0	15.0	24.5	14.5	19.5	22.0	13.0	17.0	11.5	8.5	10.0
21	20.5	12.0	16.0	27.5	15.0	20.5	23.0	12.0	17.0	10.5	4.5	7.5
22	21.5	13.0	17.0	26.5	14.5	20.0	22.5	11.5	17.0	8.0	3.5	5.5
23	21.0	12.5	17.0	25.0	15.0	19.5	24.0	12.5	18.0	11.5	2.5	6.5
24	18.5	12.5	15.5	26.5	13.5	19.5	20.5	16.0	18.0	13.5	4.5	8.5
25	22.5	11.5	16.5	26.0	14.0	20.0	24.0	14.5	18.5	15.5	6.5	10.5
26	20.0	12.5	16.0	26.5	15.0	20.5	22.5	13.0	17.5	16.0	7.0	11.0
27	22.5	11.0	16.5	26.5	15.5	21.0	21.5	12.0	16.0	16.0	7.0	11.0
28	24.0	12.0	17.5	27.0	15.0	21.0	22.5	11.0	16.5	16.0	7.0	11.5
29	23.0	14.0	18.5	28.0	15.5	21.5	21.0	10.0	15.5	14.5	10.0	12.0
30	24.0	14.0	18.5	27.5	15.5	21.5	20.0	12.0	15.5	15.5	11.0	12.5
31	---	---	---	26.5	17.0	21.5	21.5	11.0	16.0	---	---	---
MONTH	24.0	5.5	15.0	28.0	11.5	19.0	28.5	10.0	18.5	22.5	2.5	13.0

06077200 SMITH RIVER BELOW EAGLE CREEK, NEAR FORT LOGAN, MT

LOCATION.--Lat 46°49'41", long 111°11'29", in SW$^1/_4$NW$^1/_4$SE$^1/_4$ 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.

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,350 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow slightly regulated by Smith River Reservoir (station number 06075000). Diversion for irrigation of about 19,300 acres upstream of 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	118	127	e120	e100	e130	107	370	254	131	53	34
2	106	103	118	e110	e120	e130	114	443	226	155	53	33
3	112	120	e95	e100	e115	e135	104	499	200	159	47	33
4	118	135	e85	e110	e110	e135	118	532	182	156	46	36
5	117	115	e95	e110	e110	e125	136	518	172	144	52	37
6	113	136	e105	e110	e115	e130	141	486	160	131	51	39
7	114	126	e100	e110	e130	e130	123	415	143	127	47	39
8	115	121	e95	e115	e140	123	117	364	141	122	46	38
9	113	121	e100	e115	e120	115	134	327	144	117	46	36
10	113	120	e105	e110	e120	110	146	314	151	126	47	41
11	117	121	e110	e100	e110	114	147	328	163	118	52	55
12	121	122	e115	e90	e100	108	159	322	157	108	49	59
13	119	120	e110	e85	e100	111	174	301	174	102	51	54
14	117	120	e110	e95	e100	110	175	263	161	92	53	52
15	116	117	e120	e110	e95	108	170	259	179	84	49	53
16	119	120	e130	e120	e90	104	167	247	241	80	47	50
17	117	121	e120	e120	e90	110	192	256	274	76	45	54
18	124	127	e115	e115	e95	100	225	270	235	77	45	54
19	120	113	e105	e115	e95	112	240	287	229	77	45	56
20	120	126	e110	e110	e100	104	244	286	257	74	43	62
21	122	e100	e115	e110	e110	98	274	294	236	74	41	71
22	119	e95	e120	e110	e120	103	330	314	211	70	41	74
23	118	e90	e110	e110	e130	110	506	324	200	66	40	73
24	118	e95	e100	e110	e120	105	468	308	186	61	39	73
25	120	141	e95	e105	e110	103	386	292	176	58	31	74
26	121	159	e90	e105	e110	110	344	278	168	64	32	74
27	129	138	e90	e105	e120	110	306	260	158	63	33	74
28	133	117	e90	e100	e130	121	321	245	148	59	32	71
29	138	124	e95	e95	e130	119	410	240	139	61	32	71
30	132	e125	e100	e90	---	117	377	263	134	58	32	72
31	127	---	e110	e90	---	108	---	275	---	55	35	---
TOTAL	3691	3606	3285	3300	3235	3548	6855	10180	5599	2945	1355	1642
MEAN	119	120	106	106	112	114	228	328	187	95.0	43.7	54.7
MAX	138	159	130	120	140	135	506	532	274	159	53	74
MIN	103	90	85	85	90	98	104	240	134	55	31	33
AC-FT	7320	7150	6520	6550	6420	7040	13600	20190	11110	5840	2690	3260

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2000, BY WATER YEAR (WY)

MEAN	158	156	138	158	135	178	249	536	757	365	155	130
MAX	213	185	167	249	145	254	328	1119	1893	607	276	219
(WY)	1998	1999	1998	1997	1997	1997	1997	1997	1997	1998	1997	1997
MIN	119	120	106	106	112	114	179	307	187	95.0	43.7	54.7
(WY)	2000	2000	2000	2000	2000	2000	1999	1999	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1997 - 2000	
ANNUAL TOTAL	60758		49241			
ANNUAL MEAN	166		135		260	
HIGHEST ANNUAL MEAN					458	1997
LOWEST ANNUAL MEAN					135	2000
HIGHEST DAILY MEAN	526	Jun 7	532	May 4	3510	Jun 12 1997
LOWEST DAILY MEAN	78	Aug 24	31	Aug 25	31	Aug 25 2000
ANNUAL SEVEN-DAY MINIMUM	82	Aug 22	32	Aug 25	32	Aug 25 2000
INSTANTANEOUS PEAK FLOW			a556	May 4	d3900	Jun 12 1997
INSTANTANEOUS PEAK STAGE			b4.84	Feb 23	f9.30	Jan 1 1997
INSTANTANEOUS LOW FLOW			c28	Aug 26	28	Aug 26 2000
ANNUAL RUNOFF (AC-FT)	120500		97670		188300	
10 PERCENT EXCEEDS	298		261		468	
50 PERCENT EXCEEDS	130		115		160	
90 PERCENT EXCEEDS	98		51		99	

a--Gage height, 4.18 ft.
b--Backwater from ice.
c--Gage height, 2.65 ft.
d--Gage height, 7.00 ft.
e--Estimated.
f--Ice jam.

MISSOURI RIVER MAIN STEM

06078200 MISSOURI RIVER NEAR ULM, MT

LOCATION.--Lat 47°26'06", long 111°23'07", in NE$^1/_4$NW$^1/_4$NW$^1/_4$ 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. Datum of gage is 3,313.27 ft above sea level.

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4160	4160	4480	4890	e5100	5130	4780	4860	4580	3290	2850	3100
2	4210	4220	4500	4840	e5100	5130	4650	4780	4380	3270	2830	3130
3	4250	4230	4470	4790	e5100	5120	4720	4770	4040	3260	2860	3100
4	4230	4200	4500	e4900	e5100	5040	4760	4920	3760	3370	2910	3090
5	4240	4190	4500	e4900	e5100	4990	4630	5050	3500	3370	2980	3100
6	4290	4280	4470	e4900	e5200	5000	4400	5090	3480	3370	3010	3040
7	4310	4290	4450	e4900	5200	5000	4420	5020	3410	3320	3060	3000
8	4290	4260	4450	e4900	5130	5020	4460	4900	3350	3280	3040	3000
9	4200	4270	4480	4890	5100	5070	4500	4790	3330	3300	3010	3020
10	4090	4280	4520	4790	5070	5080	4500	4750	3350	3260	3060	3030
11	4100	4400	4500	e4900	4920	5100	4590	4690	3460	3260	3120	3080
12	4120	4510	4500	e4900	e5000	5190	4610	4730	3430	3280	3070	3090
13	4180	4450	4510	e4900	e5100	5180	4560	4710	3410	3260	3070	3040
14	4090	4450	4510	e4900	e5100	5220	4650	4650	3390	3240	3030	3030
15	4080	4440	4540	e4900	e5100	5200	4740	4600	3370	3190	2860	3020
16	4150	4470	4470	e4900	e5100	5190	4810	4570	3340	3150	2750	3020
17	4140	4420	4420	e4900	e5200	5140	4800	4570	3520	3150	2770	3060
18	4120	4290	4490	e4900	e5100	5100	4700	4600	3630	3170	2840	3090
19	4180	4200	4490	e4900	e5100	5080	4740	4660	3690	3190	2960	3120
20	4210	4220	4620	e4900	e5200	5020	4740	4690	3740	3210	3090	3140
21	4190	4210	4760	e4900	e5300	5050	4760	4710	3740	3240	3120	3020
22	4240	4310	4780	e4900	e5200	4980	4810	4690	3750	3230	3150	3100
23	4320	4300	4740	e4900	e5200	4960	4890	4710	3710	3220	3140	3130
24	4300	4220	4750	e4900	e5200	4880	4990	4680	3670	3170	3140	3130
25	4310	4280	4730	e4900	5140	4880	5020	4650	3620	3160	3110	3090
26	4350	4370	4700	e4900	5120	4870	4930	4600	3540	3160	2950	3100
27	4410	4400	4730	e4900	5100	4880	4830	4540	3440	3160	2940	3140
28	4430	4440	4810	e4900	5150	4940	4800	4350	3400	3090	2950	3140
29	4400	4450	4830	e4900	5100	4960	4750	4170	3360	2970	3010	3160
30	4280	4460	4850	e4900	---	5010	4830	4140	3320	2900	2980	3370
31	4220	---	4860	e5000	---	4980	---	4420	---	2840	3030	---
TOTAL	131090	129670	142410	151700	148630	156390	141370	145060	107710	99330	92690	92680
MEAN	4229	4322	4594	4894	5125	5045	4712	4679	3590	3204	2990	3089
MAX	4430	4510	4860	5000	5300	5220	5020	5090	4580	3370	3150	3370
MIN	4080	4160	4420	4790	4920	4870	4400	4140	3320	2840	2750	3000
AC-FT	260000	257200	282500	300900	294800	310200	280400	287700	213600	197000	183900	183800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2000, BY WATER YEAR (WY)

MEAN	5053	5439	5674	5789	5913	6033	6703	9228	11240	7633	4968	4717
MAX	11230	9497	10690	7213	9501	9652	12070	19800	24260	19480	8741	9990
(WY)	1966	1966	1960	1984	1996	1968	1976	1976	1981	1975	1993	1984
MIN	3132	3316	3535	3984	4028	3393	3070	3501	2965	2868	2990	2283
(WY)	1989	1989	1989	1989	1960	1991	1961	1961	1961	1985	2000	1959

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1957 - 2000	
ANNUAL TOTAL	2189690		1538730			
ANNUAL MEAN	5999		4204		6532	
HIGHEST ANNUAL MEAN					9653	1976
LOWEST ANNUAL MEAN					3822	1988
HIGHEST DAILY MEAN	13500	Jun 7	5300	Feb 21	28200	May 24 1981
LOWEST DAILY MEAN	3950	Sep 24	2750	Aug 16	1700	Jun 17 1961
ANNUAL SEVEN-DAY MINIMUM	4000	Sep 20	2880	Jul 29	2150	Sep 4 1959
INSTANTANEOUS PEAK FLOW			a		c28500	May 24 1981
INSTANTANEOUS PEAK STAGE			b7.93	Feb 17	15.20	Jun 17 1997
ANNUAL RUNOFF (AC-FT)	4343000		3052000		4732000	
10 PERCENT EXCEEDS	8460		5100		10300	
50 PERCENT EXCEEDS	5600		4440		5760	
90 PERCENT EXCEEDS	4170		3070		3520	

a--Not determined; occurred during period of ice effect.
b--Backwater from ice.
c--Gage height, 14.99 ft.
e--Estimated.

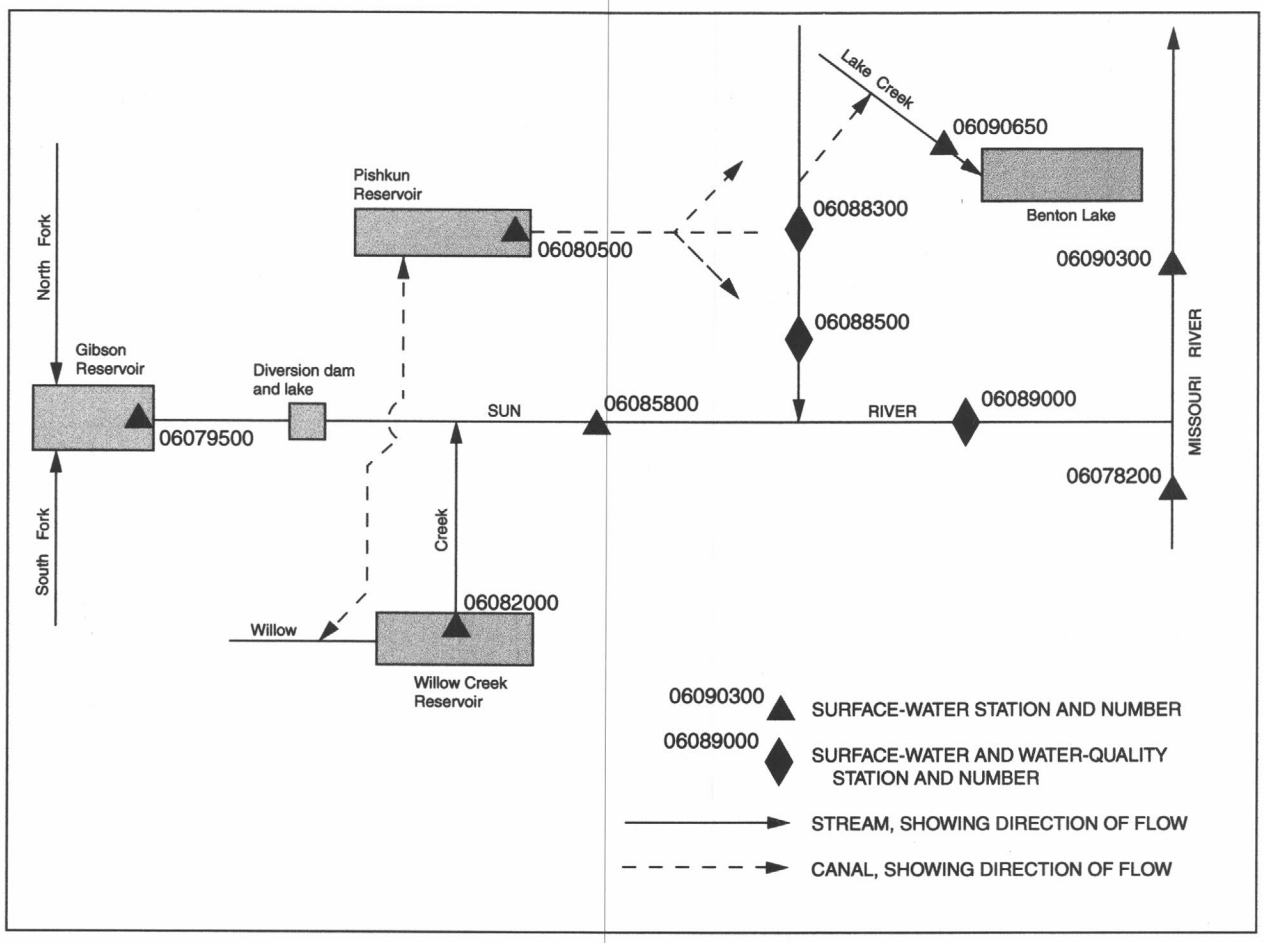


Figure 10. Schematic diagram showing diversions and storage in Sun River Basin.

SUN RIVER BASIN

06085800 SUN RIVER AT SIMMS, MT

LOCATION.--Lat 47°30'06", long 111°55'56", in NW$^1/_4$NW$^1/_4$SE$^1/_4$ sec. 12, T. 20 N., R.3 W., Cascade County, Hydrologic Unit 10030104, on left bank 5 ft downstream from bridge on Montana Secondary Highway 565, 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 above sea level, from topographic map. Nonrecording gage; May 1941 to October 1965, water-stage recorder at site about 500 ft downstream; April 1966 to September 1979, at different datum.

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. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	233	272	285	e290	e290	e210	149	239	878	103	45	112
2	260	270	337	e280	e280	e190	154	279	864	91	39	101
3	266	273	331	e250	e270	182	155	1220	609	124	41	64
4	265	264	294	e270	e250	176	153	1390	632	150	52	66
5	284	253	337	e290	e260	170	150	1020	1230	125	52	68
6	269	252	364	e300	e280	167	153	759	1750	114	45	72
7	278	240	348	e300	e300	166	153	307	2160	100	45	64
8	258	236	316	e300	e340	163	151	173	2170	85	55	44
9	224	311	297	e290	e280	178	149	128	2250	98	64	e45
10	224	324	321	e270	e250	237	149	71	2220	84	45	e60
11	222	327	337	e250	e230	238	147	79	1240	56	44	e75
12	223	327	357	e250	e240	234	140	88	513	44	41	80
13	223	319	327	e240	e240	233	154	80	294	72	37	71
14	226	322	272	e230	e250	232	169	66	290	68	35	68
15	262	319	e320	e230	e240	175	151	67	366	37	31	62
16	266	320	360	e240	e230	162	160	63	1310	30	28	62
17	265	319	325	e260	e220	162	152	75	1610	44	48	60
18	261	253	323	e250	e210	157	154	81	999	48	54	59
19	263	243	e290	e240	e240	167	162	76	979	47	50	62
20	261	242	e290	e240	e270	160	251	80	1160	50	40	72
21	251	239	320	e250	e300	160	280	73	897	49	40	95
22	249	234	327	e250	e290	159	297	83	542	53	45	136
23	266	214	e320	e250	e290	159	308	101	1140	57	50	147
24	274	259	e320	e250	e260	160	276	91	785	58	44	146
25	264	258	e320	e250	e250	159	314	68	658	58	43	147
26	267	258	298	e260	e230	152	259	54	410	67	35	145
27	318	247	e300	e270	e220	149	172	126	260	71	39	143
28	298	237	e320	e270	e220	150	148	535	219	66	48	141
29	286	255	310	e270	e220	152	153	809	198	47	76	140
30	279	261	299	e270	---	152	226	908	147	44	96	138
31	272	---	302	e270	---	150	---	886	---	43	105	---
TOTAL	8057	8148	9867	8130	7450	5461	5589	10075	28780	2183	1512	2745
MEAN	260	272	318	262	257	176	186	325	959	70.4	48.8	91.5
MAX	318	327	364	300	340	238	314	1390	2250	150	105	147
MIN	222	214	272	230	210	149	140	54	147	30	28	44
AC-FT	15980	16160	19570	16130	14780	10830	11090	19980	57090	4330	3000	5440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2000, BY WATER YEAR (WY)*

MEAN	217	233	209	207	205	234	348	1292	2418	453	176	156
MAX	519	596	456	314	291	473	1125	4123	8558	2165	383	422
(WY)	1972	1976	1976	1976	1976	1969	1969	1976	1975	1975	1972	1972
MIN	89.0	120	101	137	96.3	104	80.9	101	109	58.5	48.8	49.3
(WY)	1978	1978	1974	1974	1977	1977	1977	1973	1977	1973	2000	1977

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1966 - 2000*	
ANNUAL TOTAL	144798		97997			
ANNUAL MEAN	397		268		508	
HIGHEST ANNUAL MEAN					1177	1975
LOWEST ANNUAL MEAN					126	1977
HIGHEST DAILY MEAN	4110	Jun 6	2250	Jun 9	35000	Jun 20 1975
LOWEST DAILY MEAN	61	Jul 14	28	Aug 16	19	Sep 29 1977
ANNUAL SEVEN-DAY MINIMUM	81	Jul 10	37	Aug 10	26	Sep 19 1977
INSTANTANEOUS PEAK FLOW			2570	Jun 10	50000	Jun 9 1964
INSTANTANEOUS PEAK STAGE			4.80	Jun 10	b13.70	Jun 9 1964
INSTANTANEOUS LOW FLOW			a24	Jul 16		
ANNUAL RUNOFF (AC-FT)	287200		194400		368300	
10 PERCENT EXCEEDS	797		342		1150	
50 PERCENT EXCEEDS	243		233		202	
90 PERCENT EXCEEDS	125		51		90	

*--During periods of operation (April 1966 to September 1979, April 1997 to current year).
a--Gage height, 0.66 ft.
b--About, from floodmark.
e--Estimated.

SUN RIVER BASIN

06088300 MUDDY CREEK NEAR VAUGHN, MT

LOCATION.--Lat 47°37'30", long 111°38'05", in NE$^1/_4$NE$^1/_4$NW$^1/_4$ 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 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. Datum of gage is 3,441.79 ft above sea level (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 SW$^1/_4$ sec. 2, T. 22 N., R.1 W, to supplement water supply for Benton Lake Wildlife Refuge. Bureau of Reclamation satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	190	71	58	e42	e26	e34	25	16	570	260	245	188
2	152	75	55	e40	e35	e34	25	15	424	238	265	123
3	100	73	55	e36	e34	e36	24	15	337	312	270	86
4	93	70	48	e50	e32	e36	23	94	248	301	249	78
5	80	70	69	e46	e30	e34	21	118	208	309	225	83
6	76	69	63	e46	e32	e32	23	73	190	299	188	77
7	71	66	61	e44	e36	e32	23	69	182	315	198	70
8	68	65	e60	e44	e45	e28	22	140	191	254	148	69
9	65	66	e60	e42	e40	e28	22	56	159	219	171	59
10	62	67	e65	e34	e30	e28	22	52	171	312	168	56
11	63	65	63	e30	e25	e30	22	101	157	265	215	60
12	61	64	70	e30	e25	30	22	142	186	252	221	65
13	59	61	59	e32	e26	29	22	105	134	277	167	64
14	56	61	53	e28	e26	30	21	91	193	282	152	61
15	56	60	69	e30	e26	27	27	117	256	297	144	69
16	55	60	61	e32	e25	28	25	113	269	268	148	73
17	54	60	54	e34	e23	28	24	120	215	300	132	69
18	54	63	48	e32	e22	26	22	94	211	219	149	67
19	53	60	e46	e30	e26	29	22	97	225	264	157	73
20	51	59	e65	e29	e30	26	21	94	232	269	137	75
21	50	58	e60	e32	e35	26	21	70	245	257	151	83
22	49	58	e55	e34	e50	28	21	138	195	245	154	77
23	49	55	56	e30	e50	28	20	93	219	225	153	75
24	49	68	55	e29	e46	26	18	115	228	230	145	73
25	49	62	49	e28	e36	26	12	95	205	213	140	68
26	49	63	e55	e28	e32	26	12	130	327	246	123	66
27	74	59	e55	e28	e36	25	19	135	209	232	139	63
28	63	54	45	e27	e40	27	19	92	234	186	150	59
29	55	72	43	e25	e38	29	19	131	210	162	135	54
30	52	62	43	e21	---	28	19	114	237	194	163	52
31	51	---	43	e17	---	26	---	337	---	279	201	---
TOTAL	2109	1916	1741	1030	957	900	638	3172	7067	7981	5403	2235
MEAN	68.0	63.9	56.2	33.2	33.0	29.0	21.3	102	236	257	174	74.5
MAX	190	75	70	50	50	36	27	337	570	315	270	188
MIN	49	54	43	17	22	25	12	15	134	162	123	52
AC-FT	4180	3800	3450	2040	1900	1790	1270	6290	14020	15830	10720	4430

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2000, BY WATER YEAR (WY)*

MEAN	79.7	55.7	42.6	33.7	37.2	61.8	42.0	119	200	259	249	139
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	54.2	42.0	21.7	19.3	17.5	27.6	21.3	64.8	101	137	138	68.5
(WY)	1978	1978	1973	1973	1985	1999	2000	1986	1985	1980	1977	1987

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1968 - 2000*	
ANNUAL TOTAL	36232		35149			
ANNUAL MEAN	99.3		96.0		111	
HIGHEST ANNUAL MEAN					160	1969
LOWEST ANNUAL MEAN					77.2	1985
HIGHEST DAILY MEAN	357	Jul 1	570	Jun 1	2250	May 7 1975
LOWEST DAILY MEAN	13	Apr 24	12	Apr 25	8.0	Dec 8 1972
ANNUAL SEVEN-DAY MINIMUM	15	Apr 21	17	Apr 25	13	Dec 8 1972
INSTANTANEOUS PEAK FLOW			608	Jun 1	3560	May 22 1981
INSTANTANEOUS PEAK STAGE			5.83	Jun 1	b14.72	May 22 1981
INSTANTANEOUS LOW FLOW			a11	Mar 18		
ANNUAL RUNOFF (AC-FT)	71870		69720		80490	
10 PERCENT EXCEEDS	250		235		261	
50 PERCENT EXCEEDS	62		61		63	
90 PERCENT EXCEEDS	26		25		28	

*--During periods of operation (July 1968 to September 1987, March 1996 to current year).
a--Gage height, 1.80 ft.
b--From floodmark.
e--Estimated.

06088300 MUDDY CREEK NEAR VAUGHN, MT--Continued

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.
REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.
EXTREMES FOR PEROD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,400 microsiemens per centimeter (µS/cm) Apr. 29, 1976; minimum daily, 365 µS/cm 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 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
NOV 1999								
10...	1030	67	8.5	885	15.0	5.0	.01	3.0
JAN 2000								
20...	1320	28	8.3	1020	-3.0	0.0	.02	4.0
FEB								
24...	0930	46	8.3	1100	2.0	0.0	.02	4.4
APR								
05...	0900	22	8.4	1130	6.0	5.0	.02	2.8
MAY								
08...	1640	117	8.3	455	20.0	14.5	<.01	.46
JUN								
20...	1345	241	8.4	568	20.0	14.5	.02	1.3
JUL								
18...	0900	214	8.3	577	19.5	16.0	<.01	1.4
AUG								
11...	0945	205	8.4	619	18.0	17.0	.01	1.3
23...	1100	183	8.5	573	27.0	15.5	<.01	1.1

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
10...	<.02	<.01	<.05	E2	46	8.3	65
JAN 2000							
20...	.05	<.01	<.05	3	24	1.8	89
FEB							
24...	.08	.02	E.05	5	24	2.9	95
APR							
05...	<.02	<.01	E.03	4	40	2.4	90
MAY							
08...	.04	<.01	.40	<3	339	107	92
JUN							
20...	<.02	.05	.20	<3	148	96	72
JUL							
18...	<.02	.05	.17	E2	120	69	76
AUG							
11...	<.02	.02	.10	<3	61	34	82
23...	<.02	<.01	<.05	<3	38	19	81

E--Estimated.

SUN RIVER BASIN

06088500 MUDDY CREEK AT VAUGHN, MT

LOCATION.--Lat 47°33'40", long 111°32'15", in $SW^1/_4SE^1/_4NE^1/_4$ 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 above sea level (from topographic map). May 21, 1925 to Feb. 8, 1926, nonrecording gage at site 500 ft downstream at different datum. Apr. 19, 1925 to Sept. 30, 1955, at previous site at datum. 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 datum. July 1, 1971 to May 9, 1996, 700 ft upstream at previous datum.

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. Bureau of Reclamation satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1908 reached a stage of about 24 ft, previous datum (discharge not determined); flood in June 1932 reached a stage of about 19 ft, previous datum (discharge not determined); from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	245	66	63	46	e26	e34	25	19	582	326	311	263
2	235	74	59	e42	e35	e34	25	16	525	296	306	202
3	171	77	59	e36	e34	e36	23	17	411	355	322	156
4	155	75	48	e38	e32	e36	25	98	317	371	300	133
5	150	72	66	e50	e30	e34	23	184	269	366	302	145
6	141	73	72	e46	e32	e32	24	165	250	346	264	139
7	135	70	69	e44	e36	e32	25	123	235	374	280	130
8	130	69	54	e44	48	e28	24	195	236	328	217	125
9	127	69	64	e42	46	e28	24	130	215	264	238	111
10	121	69	66	e34	e28	e28	25	97	209	367	237	106
11	86	68	65	e30	e25	e30	25	132	195	332	270	109
12	83	67	67	e30	e25	e29	24	198	250	303	303	114
13	79	65	64	e32	e26	28	25	169	173	336	232	122
14	75	63	54	e26	e26	31	24	128	213	339	204	99
15	74	62	61	e30	e26	27	30	154	305	372	185	92
16	75	63	67	e32	e25	29	29	154	354	311	203	100
17	74	62	62	e34	e23	30	28	169	284	350	190	90
18	72	66	55	e32	e22	24	25	131	271	265	221	83
19	73	64	54	e30	e26	32	23	146	290	310	249	88
20	71	62	66	e29	e30	27	23	166	292	331	226	94
21	69	60	64	e32	e35	26	22	108	334	348	227	103
22	67	60	58	e34	e50	33	22	181	275	314	223	112
23	67	53	56	e30	e50	33	22	150	280	295	231	110
24	68	73	59	e29	e46	31	21	166	310	299	204	110
25	67	70	57	e28	e36	31	15	159	263	271	212	103
26	68	68	52	e28	e32	30	12	173	396	308	187	101
27	88	65	56	e28	e36	30	16	207	288	308	206	98
28	89	55	56	e27	e40	30	20	156	289	267	227	95
29	75	70	50	e25	e38	31	21	198	262	218	214	86
30	56	71	49	21	---	31	21	175	273	249	224	84
31	53	---	50	17	---	27	---	345	---	340	261	---
TOTAL	3139	2001	1842	1026	964	942	691	4609	8846	9859	7476	3503
MEAN	101	66.7	59.4	33.1	33.2	30.4	23.0	149	295	318	241	117
MAX	245	77	72	50	50	36	30	345	582	374	322	263
MIN	53	53	48	17	22	24	12	16	173	218	185	83
AC-FT	6230	3970	3650	2040	1910	1870	1370	9140	17550	19560	14830	6950
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2000, BY WATER YEAR (WY)*												
MEAN	101	60.5	44.5	34.5	37.8	55.4	42.1	139	236	274	285	177
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 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1925 - 2000*	
ANNUAL TOTAL	45499		44898			
ANNUAL MEAN	125		123		125	
HIGHEST ANNUAL MEAN					185	1975
LOWEST ANNUAL MEAN					61.2	1936
HIGHEST DAILY MEAN	401	Jul 1	582	Jun 1	3500	Jun 4 1953
LOWEST DAILY MEAN	12	Apr 27	12	Apr 26	4.8	Mar 29 1977
ANNUAL SEVEN-DAY MINIMUM	16	Apr 21	18	Apr 25	7.0	Jan 24 1936
INSTANTANEOUS PEAK FLOW			650	Jun 2	b7600	Jun 4 1953
INSTANTANEOUS PEAK STAGE			5.98	Jun 2	c17.70	Jun 4 1953
INSTANTANEOUS LOW FLOW			a11	Apr 27	d2.0	Mar 16 1972
ANNUAL RUNOFF (AC-FT)	90250		89060		90760	
10 PERCENT EXCEEDS	293		302		295	
50 PERCENT EXCEEDS	69		70		71	
90 PERCENT EXCEEDS	30		25		26	

*--During periods of operation (June 1925 to January 1926, April 1934 to September 1968, July 1971 to current year).
a--Gage height, 2.01 ft.
b--From rating curve extended 3,000 ft^3/s on basis of a slope-area measurement of peak flow.
c--Previous datum, from floodmark.
d--Gage height, 1.20 ft, result of upstream ice jam.
e--Estimated.

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.

REMARKS.--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 (water years 1968 1972-82): Maximum daily, 5,400 microsiemens per centimeter (µS/cm) at 25.0°C, Apr. 30, 1976; minimum daily, 470 microsiemens per centimeter (µS/cm) at 25.0°C, June 8, 1974.
WATER TEMPERATURE (water years 1968, 1971-79): Maximum daily, 25.5°C, June 18, 1974, June 28, 1979; minimum daily, 0.0°C, on many days during winters.
SEDIMENT CONCENTRATION (water years 1971-82): Maximum daily mean, 21,100 mg/L, May 22, 1981; minimum daily mean, 10 mg/L, Feb. 10, 1973.
SEDIMENT LOAD (water years 1971-82): Maximum daily, 127,000 tons, May 22, 1981; minimum daily, 0.68 ton, Feb. 10, 1973.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
NOV 1999								
10...	1130	70	8.6	910	17.0	5.5	<.01	<0.14
JAN 2000								
20...	1445	29	8.3	1070	-2.0	0.0	.02	3.9
FEB								
24...	1200	49	8.3	1010	2.5	0.0	.02	3.1
APR								
05...	1030	22	8.5	1180	6.0	7.0	.03	2.7
MAY								
09...	0720	137	8.4	476	11.0	11.5	<.01	.32
JUN								
20...	1500	283	8.4	560	22.0	16.0	<.01	1.1
JUL								
17...	1430	380	8.3	531	30.0	18.5	<.01	1.1
AUG								
11...	1100	270	8.4	640	20.0	18.5	<.01	1.2
23...	1400	253	8.5	571	31.0	18.5	<.01	.83

SUN RIVER BASIN

06088500 MUDDY CREEK AT VAUGHN, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
10...	.04	<.01	<.05	E2	44	8.3	55
JAN 2000							
20...	<.02	<.01	E.04	3	26	2.0	64
FEB							
24...	.03	<.01	<.05	E3	58	7.7	34
APR							
05...	.02	<.01	<.05	3	47	2.8	95
MAY							
09...	.03	<.01	.34	<3	329	122	91
JUN							
20...	<.02	.03	.31	<3	258	197	72
JUL							
17...	<.02	.04	.43	E1	399	409	62
AUG							
11...	<.02	.02	.14	<3	156	114	68
23...	<.02	<.01	.06	<3	75	51	71

E--Estimated.

SUN RIVER BASIN

06089000 SUN RIVER NEAR VAUGHN, MT

LOCATION.--Lat 47°31'37", long 111°29'05", in NW$^1/_4$SE$^1/_4$SW$^1/_4$ sec.33, T.21 N., R.2 E., Cascade County, Hydrologic Unit 10030104, on right bank 3.7 mi downstream from Muddy Creek, 3.6 mi southeast of Vaughn, and at river mile 13.6.

DRAINAGE AREA.--1,854 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.

GAGE.--Water-stage recorder. Datum of gage is 3,317.12 ft above sea level. July 11 to Oct. 30, 1897, nonrecording gage at site 0.8 mi upstream at different datum. Apr. 19 to Aug. 3, 1934, non-recording gage at present site and datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated by Gibson, Pishkun, Willow Creek, and Nilan Reservoir. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	595	417	388	e360	e340	e300	204	306	1990	542	467	509
2	647	431	432	e320	e320	e290	204	286	1580	483	443	448
3	577	429	446	e300	e300	290	206	636	1170	551	470	349
4	560	429	e440	e350	e280	263	201	1190	929	634	444	298
5	538	412	e460	e330	e300	254	196	1120	1160	619	450	329
6	515	410	e480	e330	e320	239	200	894	1840	585	407	318
7	492	403	e460	e330	e360	237	200	623	2280	583	428	309
8	472	388	e480	e330	e400	235	201	436	2400	538	361	287
9	444	408	e480	e320	e350	225	200	325	2420	472	381	248
10	425	461	e500	e300	e280	263	195	239	2520	572	381	243
11	428	466	e500	e280	e250	305	201	228	1950	552	400	253
12	417	463	e500	e280	e270	296	194	293	1040	497	464	254
13	406	462	e460	e270	e280	293	191	294	670	484	390	263
14	396	456	e460	e260	e300	291	211	235	576	501	353	249
15	417	454	e460	e260	e280	275	220	252	677	491	332	240
16	426	454	e480	e270	e280	228	209	258	1020	423	358	232
17	421	455	e480	e290	e280	220	211	258	2110	455	336	231
18	418	e350	e440	e280	e250	208	201	229	1660	392	346	223
19	418	e380	e400	e270	e300	217	201	238	1180	403	378	238
20	413	379	e420	e270	e320	219	219	242	1450	428	373	258
21	406	377	e450	e300	e360	213	300	187	1400	418	390	300
22	392	371	e460	e280	e380	213	322	248	1020	409	390	357
23	389	364	e480	e280	e380	216	338	277	1050	396	396	364
24	407	442	e480	e280	e350	213	336	270	1320	396	353	361
25	405	405	e480	e280	e360	211	335	239	957	401	344	348
26	400	398	e460	e300	e380	210	359	233	952	444	325	340
27	471	405	e480	e300	e380	203	285	259	710	457	329	331
28	489	344	e500	e300	e360	206	248	382	631	430	362	319
29	439	e360	e460	e300	e320	212	224	713	592	380	365	297
30	422	400	e420	e300	---	214	236	940	548	396	410	287
31	412	---	e380	e300	---	209	---	1240	---	495	479	---
TOTAL	14057	12373	14216	9220	9330	7468	7048	13570	39802	14827	12105	9083
MEAN	453	412	459	297	322	241	235	438	1327	478	390	303
MAX	647	466	500	360	400	305	359	1240	2520	634	479	509
MIN	389	344	380	260	250	203	191	187	548	380	325	223
AC-FT	27880	24540	28200	18290	18510	14810	13980	26920	78950	29410	24010	18020

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2000, BY WATER YEAR (WY)

MEAN	384	342	305	258	269	331	510	1620	2583	796	568	446
MAX	779	908	896	656	601	868	3000	4333	8014	2508	1025	1040
(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 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1934 - 2000	
ANNUAL TOTAL	219116		163099			
ANNUAL MEAN	600		446		695	
HIGHEST ANNUAL MEAN					1307	1943
LOWEST ANNUAL MEAN					210	1941
HIGHEST DAILY MEAN	4380	Jun 6	2520	Jun 10	37000	Jun 10 1964
LOWEST DAILY MEAN	190	Jan 24	187	May 21	23	May 26 1941
ANNUAL SEVEN-DAY MINIMUM	206	Mar 23	197	Apr 7	38	May 21 1941
INSTANTANEOUS PEAK FLOW			2650	Jun 10	b53500	Jun 9 1964
INSTANTANEOUS PEAK STAGE			4.33	Jun 10	c23.40	Jun 9 1964
INSTANTANEOUS LOW FLOW			a165	May 21	d20	Apr 24 1944
ANNUAL RUNOFF (AC-FT)	434600		323500		503700	
10 PERCENT EXCEEDS	890		625		1480	
50 PERCENT EXCEEDS	442		375		369	
90 PERCENT EXCEEDS	220		222		180	

a--Gage height, 0.86 ft.
b--42,200 ft^3/s in main channel, plus 11,300 ft3/s in bypass channel.
c--From floodmark.
d--Gage height, 0.52 ft, result of irrigation.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURE: October 1968 to September 1979.

INSTRUMENTATION.--Temperature recorder installed Aug. 24, 1999.

REMARKS.--Daily specific conductance samples collected at county bridge 1.8 mi downstream from gaging station. Missing daily specific conductance due to no sample collection or ice conditions. Missing temperature data for Nov. 14, 15 and Dec. 12 due to equipment failure. Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,610 microsiemens per centimeter (µS/cm) at 25.0°C, Apr. 8, 1977; minimum daily, 214 microsiemens per centimeter (µS/cm) at 25.0°C, June 8, 1970.
WATER TEMPERATURE: Maximum daily, 28.0°C, Aug. 11, 27, 1969, Aug. 16, 1977; minimum daily, 0.0°C on many days during winter.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily for period of collection, 800 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 10, 11; minimum daily, 376 microsiemens per centimeter (µS/cm) at 25.0°C, Apr. 26.
WATER TEMPERATURE: Maximum daily, 26.0°C, July 19, 29; minimum daily, 0.0°C on many days November to March.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
NOV 1999								
10...	0850	459	8.5	638	7.0	5.5	.28	<.020
JAN 2000								
20...	1130	270	8.2	647	-5.0	0.0	--	.028
FEB								
24...	1330	365	8.2	675	0 .5	0.0	--	.038
APR								
05...	1245	191	8.5	708	10.0	14.0	--	.027
MAY								
09...	0900	328	8.4	470	11.0	11.5	.65	<.020
JUN								
09...	0915	2410	8.3	300	17.0	15.0	.59	<.020
JUL								
17...	1220	467	8.6	574	29.5	21.0	--	<.020
AUG								
11...	0745	367	8.4	675	16.0	9.0	.54	<.020
23...	1730	430	8.7	561	32.0	22.5	--	<.020

SUN RIVER BASIN

06089000 SUN RIVER NEAR VAUGHN, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
10...	.787	.004	<.001	.011	<3	47	58	77
JAN 2000								
20...	.894	<.010	<.010	E.038	<3	21	15	83
FEB								
24...	.718	<.010	<.010	<.050	<3	11	11	99
APR								
05...	.547	<.010	.012	<.050	<3	33	17	93
MAY								
09...	.210	.005	.002	.071	<3	112	99	89
JUN								
09...	.102	.001	<.001	.233	<3	285	1850	67
JUL								
17...	.662	<.010	.022	.074	E1	41	52	97
AUG								
11...	.746	.007	.008	.073	<3	69	68	96
23...	.428	<.010	<.010	<.050	<3	54	63	99

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999											
10...	0850	300	62	34	1.5	.6	25	227	3.1	.4	5.2
JUN 2000											
09...	0915	150	36	14	.8	.3	7.7	127	1.1	.2	4.8

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
10...	120	.53	481	388	<3	<.1	<1	E1	<1	<2	<31
JUN 2000											
09...	32	.23	1120	172	E2	<.1	2	5	4	5	19

E--Estimated.

SUN RIVER BASIN

06089000 SUN RIVER NEAR VAUGHN, MT--Continued

SPECIFIC CONDUCTANCE, µS/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	647	663	705	---	606	741	710	379	---	527	---	610
2	618	657	711	---	606	741	709	379	---	547	---	629
3	649	660	614	682	---	742	711	592	506	575	---	654
4	628	---	593	688	---	722	703	595	542	562	---	689
5	630	---	601	693	---	736	709	576	508	571	---	724
6	657	661	594	379	---	732	713	583	397	553	---	766
7	654	663	616	650	605	732	737	583	351	553	678	789
8	633	667	593	---	617	737	705	596	339	---	641	790
9	635	---	701	---	---	734	707	470	326	609	---	789
10	653	---	614	---	---	743	714	545	323	628	674	800
11	668	---	593	---	---	724	708	---	350	698	669	800
12	670	---	580	---	---	739	702	---	419	603	652	792
13	658	645	581	---	---	714	700	---	486	587	679	777
14	660	641	612	---	---	716	702	---	529	599	693	763
15	661	645	609	---	---	614	734	---	499	574	674	753
16	669	642	---	---	---	628	604	623	---	585	678	766
17	664	637	---	640	---	719	732	592	355	577	638	733
18	663	---	---	648	---	722	731	567	381	610	654	762
19	662	---	---	653	---	725	686	---	425	626	645	764
20	663	709	726	654	---	718	690	604	403	607	653	745
21	669	712	582	696	---	718	606	621	417	625	675	742
22	655	721	592	688	---	722	548	---	424	628	656	743
23	656	715	600	671	---	720	540	---	475	629	621	736
24	656	680	589	---	675	722	691	---	377	---	626	711
25	730	---	554	---	---	719	534	---	425	---	607	715
26	653	---	588	---	---	720	376	551	423	---	630	715
27	652	---	590	---	---	717	541	547	484	---	634	702
28	648	---	607	---	---	727	506	564	508	---	---	698
29	652	682	581	---	---	725	506	566	520	---	636	700
30	702	647	---	---	---	721	382	562	524	---	641	691
31	---	---	587	---	---	726	---	564	---	---	618	---
TOTAL	---	---	---	---	---	22316	19337	---	---	---	---	22048
MEAN	---	---	---	---	---	720	645	---	---	---	---	735
MAX	---	---	---	---	---	743	737	---	---	---	---	800
MIN	---	---	---	---	---	614	376	---	---	---	---	610

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.5	7.0	8.0	6.5	3.5	5.5	4.0	2.0	3.0	.5	.0	.0
2	7.0	5.0	6.0	5.5	3.5	4.0	2.0	1.0	1.5	.0	.0	.0
3	7.5	4.0	5.5	6.0	3.5	4.5	1.5	.5	1.0	.0	.0	.0
4	10.0	6.0	8.0	6.5	4.5	5.5	1.0	.0	.0	.0	.0	.0
5	10.5	8.0	9.5	5.0	3.5	4.5	.5	.0	.0	.0	.0	.0
6	11.0	9.0	10.0	6.5	4.0	5.0	.5	.0	.0	.0	.0	.0
7	11.5	9.0	10.0	7.5	5.5	6.0	.5	.0	.0	.0	.0	.0
8	11.5	9.0	10.0	7.5	6.0	6.5	.5	.0	.0	.0	.0	.0
9	11.5	10.0	10.5	7.5	5.5	6.0	.0	.0	.0	.0	.0	.0
10	11.0	9.0	9.5	7.0	5.5	6.0	.5	.0	.0	.0	.0	.0
11	10.0	8.0	9.0	7.5	5.5	6.5	.0	.0	.0	.0	.0	.0
12	9.5	8.0	8.5	9.5	6.5	8.0	.0	.0	.0	.0	.0	.0
13	12.0	8.0	9.5	8.5	7.5	8.0	.0	.0	.0	.0	.0	.0
14	11.5	8.5	10.0	---	---	---	.0	.0	.0	.0	.0	.0
15	9.0	6.5	8.0	---	---	---	.0	.0	.0	.0	.0	.0
16	7.0	5.0	6.0	7.0	5.5	6.0	.0	.0	.0	.0	.0	.0
17	6.5	5.0	5.5	6.0	5.0	5.5	.0	.0	.0	.0	.0	.0
18	7.0	5.5	6.0	6.0	4.5	5.0	.5	.0	.0	.0	.0	.0
19	8.0	5.0	6.5	4.5	3.5	4.0	.0	.0	.0	.0	.0	.0
20	9.0	6.0	7.0	5.0	2.5	3.5	.0	.0	.0	.0	.0	.0
21	10.0	7.0	8.0	3.0	1.5	2.5	.0	.0	.0	.0	.0	.0
22	10.5	7.5	8.5	2.0	.5	1.5	.0	.0	.0	.0	.0	.0
23	10.0	7.5	8.5	1.5	.0	.5	.0	.0	.0	.0	.0	.0
24	9.5	7.5	8.5	1.0	.0	.0	.5	.0	.0	.0	.0	.0
25	8.0	7.0	7.5	1.5	.5	1.0	.0	.0	.0	.0	.0	.0
26	8.0	6.5	7.5	2.0	1.0	1.5	.0	.0	.0	.0	.0	.0
27	8.5	6.5	7.0	2.5	1.5	1.5	.0	.0	.0	.0	.0	.0
28	8.5	7.0	7.5	2.0	.0	1.0	.0	.0	.0	.0	.0	.0
29	8.0	6.0	7.0	1.0	.0	.5	.0	.0	.0	.0	.0	.0
30	9.0	6.0	7.0	3.5	1.0	2.0	.0	.0	.0	.0	.0	.0
31	9.0	6.0	7.5	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	12.0	4.0	8.0	---	---	---	4.0	0.0	0.2	0.5	0.0	0.0

SUN RIVER BASIN

06089000 SUN RIVER NEAR VAUGHN, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	1.0	.0	.5	12.5	6.5	9.0	18.5	12.0	15.0
2	.0	.0	.0	1.0	.0	.5	10.0	6.5	8.5	17.5	14.5	15.5
3	.0	.0	.0	2.5	.5	1.5	13.5	5.5	9.0	15.5	13.0	14.5
4	.0	.0	.0	6.0	1.5	3.5	14.0	8.5	11.0	14.0	12.0	13.0
5	.0	.0	.0	5.0	3.5	4.0	15.0	8.0	10.5	13.0	11.0	12.0
6	.0	.0	.0	5.0	2.5	3.5	10.5	7.5	9.0	13.0	11.5	12.0
7	.5	.0	.0	4.5	2.0	3.0	12.5	6.5	9.0	14.0	11.5	12.5
8	.0	.0	.0	3.5	1.5	2.0	15.0	7.5	10.5	15.0	11.5	13.5
9	.0	.0	.0	4.5	1.0	2.0	16.5	8.5	12.0	15.0	12.5	13.0
10	.0	.0	.0	4.5	.0	2.0	12.0	9.0	10.0	16.0	11.0	13.0
11	.0	.0	.0	3.5	1.5	2.0	14.0	8.0	10.5	13.0	10.5	12.0
12	.0	.0	.0	4.5	1.5	2.5	13.5	9.5	11.0	14.0	9.0	11.0
13	.0	.0	.0	5.5	1.5	3.0	10.5	5.5	8.0	16.0	9.5	12.5
14	.5	.0	.0	6.0	2.5	4.0	9.0	4.5	6.5	16.5	11.5	14.0
15	.0	.0	.0	5.0	2.5	3.5	11.5	4.5	7.5	18.5	12.0	15.0
16	.0	.0	.0	4.0	1.5	3.0	13.0	7.0	10.0	17.0	13.0	15.0
17	.0	.0	.0	4.5	1.0	2.5	14.5	8.5	11.5	19.0	13.5	16.0
18	.0	.0	.0	6.0	.5	2.5	17.0	10.5	13.0	19.0	14.0	16.5
19	.0	.0	.0	5.5	1.5	3.0	18.5	11.0	14.5	16.5	14.0	15.5
20	.0	.0	.0	6.0	2.0	3.5	18.5	12.5	15.0	18.0	12.5	15.0
21	.0	.0	.0	7.0	1.0	3.5	19.0	13.5	16.0	16.5	13.5	14.5
22	.0	.0	.0	9.0	1.5	4.5	19.0	14.5	16.0	18.5	12.5	15.0
23	.0	.0	.0	5.5	2.5	4.5	17.0	13.5	15.0	18.0	13.5	15.5
24	.0	.0	.0	7.0	2.5	4.0	15.0	11.5	13.0	20.5	13.5	16.5
25	.0	.0	.0	8.0	2.5	4.5	13.0	10.5	11.5	20.5	15.0	17.5
26	.5	.0	.0	9.5	2.5	5.5	14.5	9.5	11.5	20.0	15.5	17.5
27	.0	.0	.0	10.5	4.0	7.0	16.5	11.0	13.5	18.5	15.0	16.5
28	.0	.0	.0	9.0	5.5	7.0	16.5	12.5	14.0	18.0	14.0	16.0
29	1.0	.0	.0	5.5	3.5	4.5	15.5	11.5	13.0	17.0	15.0	16.0
30	---	---	---	7.5	2.5	4.5	17.0	9.5	13.0	15.0	13.0	14.0
31	---	---	---	8.0	2.5	5.0	---	---	---	13.0	8.0	10.5
MONTH	1.0	0.0	0.0	10.5	0.0	3.5	19.0	4.5	11.5	20.5	8.0	14.5

		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.0	7.0	9.0	22.5	20.0	21.0	25.0	21.5	23.0	18.0	16.5	17.5
2	15.5	11.0	13.5	22.5	19.0	20.5	25.0	21.5	23.0	18.0	16.5	17.0
3	17.5	15.5	16.5	20.5	18.0	20.0	24.0	21.5	23.0	17.0	15.0	16.0
4	18.0	16.0	17.0	19.0	17.0	18.0	22.5	21.0	22.0	17.5	15.0	16.0
5	19.0	17.0	18.0	19.0	17.0	18.0	23.0	20.0	21.5	17.5	15.5	16.5
6	18.0	17.0	17.5	19.5	17.5	18.0	23.5	20.5	22.0	16.5	15.5	16.0
7	17.0	16.0	16.5	18.0	17.0	17.5	23.5	20.5	22.0	16.5	14.5	15.5
8	16.5	15.5	16.0	20.0	16.5	18.0	24.5	20.0	22.0	15.5	14.5	15.0
9	16.0	14.5	15.5	23.0	18.0	20.0	25.0	21.0	23.0	14.5	13.0	14.0
10	14.5	13.0	13.5	23.0	20.0	21.5	23.0	21.0	22.5	13.0	12.0	12.5
11	13.5	12.0	12.5	22.0	19.5	21.0	22.0	19.5	21.0	15.0	11.5	13.0
12	14.0	13.0	13.5	23.5	19.5	21.0	21.5	18.5	20.0	16.0	13.0	14.5
13	15.0	13.0	14.0	25.0	20.0	22.0	22.0	18.5	20.0	18.0	14.5	16.0
14	16.5	14.0	14.5	24.5	20.5	22.0	22.0	18.5	20.0	18.5	15.5	17.0
15	14.5	13.5	14.0	23.5	21.0	22.0	22.0	18.0	20.0	19.5	16.0	17.5
16	15.0	13.5	14.0	23.5	19.5	21.5	22.0	18.5	20.0	19.0	17.0	18.0
17	15.0	12.0	13.5	23.0	20.0	21.5	21.5	18.0	19.5	19.5	16.5	18.0
18	15.5	14.0	15.0	24.5	19.5	21.5	22.0	18.5	20.0	18.0	16.0	17.0
19	16.0	15.5	16.0	26.0	20.5	23.0	20.5	18.0	19.0	16.0	14.5	15.5
20	15.5	14.0	14.5	25.0	21.0	23.0	21.0	18.0	19.0	14.5	12.5	13.0
21	17.5	15.0	16.0	25.0	21.0	22.5	20.5	17.5	19.0	12.5	9.0	10.5
22	17.5	17.0	17.0	24.5	21.0	23.0	21.0	17.0	19.0	9.0	7.5	8.0
23	18.0	17.0	17.5	24.5	21.0	22.5	22.5	18.0	20.0	8.5	6.5	7.5
24	17.5	15.0	16.5	24.5	20.0	22.0	22.0	19.5	20.5	9.5	7.0	8.0
25	16.5	14.0	15.0	25.0	20.0	22.5	22.0	18.5	20.5	10.5	8.5	9.5
26	17.0	16.0	16.5	25.0	21.0	23.0	21.0	18.5	20.0	12.0	9.5	10.5
27	18.5	16.0	17.0	24.5	21.5	23.0	20.5	17.5	19.0	12.5	10.5	11.5
28	20.5	17.5	19.0	25.0	21.0	23.0	20.0	17.0	18.5	13.0	10.5	12.0
29	21.5	18.5	20.0	26.0	21.5	23.5	20.0	16.5	18.0	12.5	11.5	12.0
30	23.0	19.5	21.0	25.5	22.0	23.5	19.0	17.0	18.0	12.0	11.5	12.0
31	---	---	---	24.5	22.5	23.5	18.0	16.5	17.5	---	---	---
MONTH	23.0	7.0	15.5	26.0	16.5	21.5	25.0	16.5	20.5	19.5	6.5	14.0

MISSOURI RIVER MAIN STEM

06090300 MISSOURI RIVER NEAR GREAT FALLS, MT

LOCATION.--Lat 47°35'04", long 111°03'35", in $SW^1/_4SE^1/_4SW^1/_4$ 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. Datum of gage is 2,807.21 ft above sea level. Prior to July 27, 1977, nonrecording gage at same site at 2.00 ft higher datum. July 27, 1977 to May 26, 1987, at site 600 ft upstream at datum 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 datum 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5900	5250	5550	5900	5480	6070	5860	5820	6960	4700	4610	4140
2	5760	5560	5700	5870	6150	6000	5460	5810	7020	4720	4100	4230
3	5890	5540	5660	5540	6610	5990	5630	5740	6490	4410	4330	4310
4	5780	5350	5660	4870	6500	5990	5630	6460	6050	4720	4020	3970
5	5720	5460	5550	5740	6150	5930	5110	7120	5460	5010	4400	4090
6	5790	5460	5570	5840	5940	5950	5390	6870	6070	4740	4230	4260
7	5840	5520	5610	6190	6120	5770	5090	6420	5680	4750	4080	4020
8	5770	5550	5720	5690	6270	5630	5300	6450	6330	4830	4300	3870
9	5620	5630	5290	5850	5820	5670	5210	5930	6410	4720	4040	4030
10	5450	5750	5670	5240	6080	5950	5400	5590	6460	4540	4040	3920
11	5520	5670	5530	4930	5540	5940	5360	5580	6490	4840	4340	3750
12	5510	5780	5560	4760	4270	5990	5470	5700	5760	4510	4290	3920
13	5510	5810	5870	4670	4660	6050	5480	5800	4940	4600	4150	4040
14	5450	5870	5480	5300	5080	6210	5320	5640	4830	4710	4260	4060
15	5370	5790	5470	4680	4430	6140	5510	5490	4510	4550	3850	3670
16	5440	5710	5680	4650	5010	5980	5570	5540	5270	4530	3630	3680
17	5460	5730	5630	5660	5800	5940	5700	5600	6090	4500	3950	4030
18	5390	5800	5640	6180	6030	5960	5540	5620	6220	4480	3750	4040
19	5460	5540	5420	6460	6030	5970	5470	5680	5920	4490	4060	3820
20	5520	5340	5600	5930	6140	5760	5600	5680	5940	4430	4100	4080
21	5580	5450	5700	5370	6470	5740	5640	5690	6230	4540	4200	4010
22	5480	5410	5930	6070	6500	5780	5720	5540	5840	4430	4100	3840
23	5530	5410	5910	6030	6690	5780	5990	5730	5370	4500	4350	4040
24	5590	5170	5770	5790	7400	5840	5840	5760	5880	4520	4180	4110
25	5620	5260	5830	5790	6210	5510	5860	5740	5770	4420	3970	4110
26	5650	5610	5780	5750	5980	5780	5980	5710	5430	4300	4090	4150
27	5840	5570	5680	5780	5970	5610	5750	5450	5110	4660	3840	3970
28	5910	5700	5860	5960	6220	5700	5660	5490	4490	4240	3940	4020
29	5760	5550	5960	5660	6110	5700	5640	5560	5000	4230	4010	4120
30	5740	5750	5790	5330	---	5860	5560	6180	4500	4060	3940	4200
31	5420	---	6020	5290	---	5790	---	6460	---	4200	4080	---
TOTAL	174270	166990	176090	172770	171660	181980	166740	181850	172520	140880	127230	120500
MEAN	5622	5566	5680	5573	5919	5870	5558	5866	5751	4545	4104	4017
MAX	5910	5870	6020	6460	7400	6210	5990	7120	7020	5010	4610	4310
MIN	5370	5170	5290	4650	4270	5510	5090	5450	4490	4060	3630	3670
AC-FT	345700	331200	349300	342700	340500	361000	330700	360700	342200	279400	252400	239000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2000, BY WATER YEAR (WY)

MEAN	5917	6283	6275	6435	6646	6951	7643	11280	14140	8870	6033	5655
MAX	11940	10430	11520	8232	9252	10820	13200	24780	30160	23560	9946	9992
(WY)	1966	1966	1960	1971	1997	1968	1976	1976	1964	1975	1993	1984
MIN	3829	3950	3996	4502	4343	4021	3526	4454	3758	3817	3719	3109
(WY)	1989	1993	1993	1995	1960	1961	1961	1961	1977	1977	1988	1959

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1957 - 2000	
ANNUAL TOTAL	2721120		1953480			
ANNUAL MEAN	7455		5337		7677	
HIGHEST ANNUAL MEAN					11490	1975
LOWEST ANNUAL MEAN					4671	1988
HIGHEST DAILY MEAN	18200	Jun 7	7400	Feb 24	63400	Jun 10 1964
LOWEST DAILY MEAN	4170	Jan 25	3630	Aug 16	1760	Apr 16 1961
ANNUAL SEVEN-DAY MINIMUM	5370	Nov 19	3860	Sep 10	2740	Sep 5 1959
INSTANTANEOUS PEAK FLOW			8050	Feb 24	b72000	Jun 10 1964
INSTANTANEOUS PEAK STAGE			3.98	Feb 24	c9.02	May 24 1981
INSTANTANEOUS LOW FLOW			a3440	Aug 16	d1.0	Apr 16 1962
ANNUAL RUNOFF (AC-FT)	5397000		3875000		5561000	
10 PERCENT EXCEEDS	11000		6080		12300	
50 PERCENT EXCEEDS	6810		5570		6590	
90 PERCENT EXCEEDS	5530		4090		4370	

a--Gage height, 2.73 ft.
b--From hydrographic comparison with nearby stations.
c--Site and datum then in use.
d--About, power plant shutdown.

MISSOURI RIVER BASIN

06090650 LAKE CREEK NEAR POWER, MT

LOCATION.--Lat 47°41'55", long 111°23'23", in $SE^1/_4SE^1/_4SE^1/_4$ 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 above sea level, from topographic map.

REMARKS.--Seasonal records good except those for estimated daily discharges, which are fair. Seasonal flows from Muddy Creek diverted into Lake Creek, most years. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e.05	.18	.11	35	.02	.00	37	24	24	
2			e.07	.27	.06	22	.05	.00	37	23	23	
3			e.10	.42	.05	19	.11	.00	37	23	23	
4			e.10	.45	.00	18	.16	.00	37	23	23	
5			e.08	.26	.00	18	.05	.00	37	23	23	
6			e.07	.20	.00	22	.00	.00	37	23	22	
7			e.05	.14	.00	22	.00	.00	37	23	e10	
8			e.05	.17	.00	22	.00	.00	37	23	e1.0	
9			e.05	.17	3.8	22	.00	.00	36	23	e.50	
10			e.05	.15	12	21	.00	.00	35	23	e.20	
11			e.04	.17	14	20	.00	.00	35	23	e.10	
12			e.03	.22	15	19	.00	.00	24	24	e.10	
13			.02	.35	15	22	.00	.00	23	23	e.10	
14			.00	.57	15	22	.00	.00	28	23	e.10	
15			.00	.18	15	23	.00	.00	27	23	e.10	
16			.00	.28	15	21	.00	.00	28	22	e.10	
17			.00	.42	15	20	.00	.00	28	22	e.10	
18			.00	.33	15	19	.00	.00	28	22	e.10	
19			.00	.12	15	20	.00	.00	23	22	e.10	
20			.00	.06	15	22	.00	.00	23	22	e.10	
21			.00	.06	15	7.5	.00	.00	23	22	e.10	
22			.00	.06	15	1.0	.00	.00	23	22	e.10	
23			.00	.06	21	.53	.00	.00	23	20	e.10	
24			.00	.03	22	.38	.00	8.0	23	22	e.10	
25			.00	1.7	21	.29	.00	21	23	20	e.10	
26			.00	8.7	21	.23	.00	21	23	22	e.10	
27			.00	5.4	20	.21	.00	21	23	23	e.10	
28			.10	.72	20	.17	.00	22	23	23	e.00	
29			.33	.32	20	.16	.00	27	23	22	e.00	
30			.29	.19	21	.10	.00	28	23	22	e.00	
31			.22	---	24	---	.00	36	---	23	e.00	
TOTAL			1.70	22.35	385.02	439.57	0.39	184.00	864	698	151.40	
MEAN			.055	.75	12.4	14.7	.013	5.94	28.8	22.5	5.05	
MAX			.33	8.7	24	35	.16	36	37	24	24	
MIN			.00	.03	.00	.10	.00	.00	23	20	.00	
AC-FT			3.4	44	764	872	.8	365	1710	1380	300	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2000, BY WATER YEAR (WY)

MEAN	4.09	4.20	14.1	12.1	1.73	12.3	27.6	16.9	4.32	
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	.055	.75	.49	1.05	.000	1.26	13.4	.19	.35	
(WY)	2000	2000	1993	1999	1992	1995	1993	1994	1992	

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1990 - 2000	
HIGHEST DAILY MEAN	37	Sep 1	300	Mar 6 1993
LOWEST DAILY MEAN	.00	many days	.00	Jul 1 1990
INSTANTANEOUS PEAK FLOW	46	Jun 1	a300	Mar 6 1993
INSTANTANEOUS PEAK STAGE	1.36	Jun 1	b7.30	Mar 6 1993

a--Daily mean discharge.
b--From floodmarks, site and datum then in use.
e--Estimated.

06090800 MISSOURI RIVER AT FORT BENTON, MT

LOCATION.--Lat 47°49'03", long 110°39'59", in NW$^1/_4$SE$^1/_4$SE$^1/_4$ 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. Datum of gage is 2,614.05 ft above sea level. Prior to Oct. 11, 1920, nonrecording gages, and Oct. 11, 1920, to Apr. 25, 1924, water-stage recorder, all at present site at datum 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. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5820	5460	5690	5870	5360	5960	5790	5940	6730	4720	4400	4280
2	5660	5550	5700	5890	5770	6030	5590	6050	7310	4770	4150	4290
3	5890	5780	5640	6070	6460	5890	5380	5960	6650	4630	4280	4390
4	5860	5480	5690	5390	6590	5930	5890	6470	6310	4600	4180	4220
5	5680	5550	5640	5410	6180	5840	5070	7270	5640	5040	4280	4250
6	5780	5600	5590	5770	5880	5850	5380	7370	5960	4810	4540	4200
7	5800	5610	5630	6010	6020	5820	5100	6890	5530	4860	4320	4210
8	5880	5690	5730	5710	6150	5590	5220	6660	6280	4800	4370	3790
9	5710	5650	5530	5720	5890	5530	5260	6250	6190	4990	4370	4050
10	5510	5910	5560	5480	5920	5800	5360	5950	6340	4640	4300	3920
11	5500	5760	5610	e5200	5770	5870	5320	5660	6410	4690	4510	3870
12	5600	5830	5610	e5100	4670	5840	5500	5860	6020	4590	4480	3820
13	5520	5930	5780	e5000	4620	5950	5460	6020	5000	4530	4370	3980
14	5550	5900	5680	e5400	5150	6040	5440	5760	5010	4630	4450	4040
15	5470	5890	5500	e5300	4850	6210	5360	5720	4420	4460	4140	3820
16	5440	5790	5630	e5300	4810	5890	5580	5630	5050	4510	3820	3700
17	5540	5740	5740	6230	6090	5800	5680	5710	5880	4430	3940	3870
18	5500	5850	5580	6010	e6100	5910	5670	5730	6550	4470	4010	4010
19	5500	5650	5540	6650	e6150	5910	5530	5730	6210	4460	3950	3920
20	5550	5420	5480	7220	6200	5780	5560	5880	6250	4410	4280	3940
21	5640	5470	5640	6490	6380	5640	5740	5910	6460	4650	4190	4060
22	5620	5450	5890	5830	6300	5720	5720	5720	6180	4390	4280	3860
23	5590	5550	5960	6120	6600	5700	5960	5760	5750	4450	4380	3930
24	5680	5360	5760	5930	7160	5800	6040	5980	5830	4470	4270	4030
25	5700	5150	5860	6200	6440	5540	6140	5880	6090	4430	4170	4040
26	5740	5620	5740	5950	5950	5610	6170	5910	5570	4330	4110	4040
27	5890	5600	5720	5710	5950	5660	5970	5580	5410	4550	4190	3960
28	6100	5720	5800	5870	5950	5570	5940	5680	4730	4390	3960	3900
29	5890	5630	5880	5990	6130	5660	5790	5550	4930	4270	4110	3950
30	5920	5660	5830	5660	---	5840	5780	6020	4720	4240	4140	4030
31	5640	---	5990	e5400	---	5740	---	6620	---	3970	4110	---
TOTAL	176170	169250	176620	179880	171490	179920	168390	187120	175410	141180	131050	120370
MEAN	5683	5642	5697	5803	5913	5804	5613	6036	5847	4554	4227	4012
MAX	6100	5930	5990	7220	7160	6210	6170	7370	7310	5040	4540	4390
MIN	5440	5150	5480	5000	4620	5530	5070	5550	4420	3970	3820	3700
AC-FT	349400	335700	350300	356800	340200	356900	334000	371200	347900	280000	259900	238800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1891 - 2000, BY WATER YEAR (WY)

MEAN	5341	5517	5219	5084	5383	6300	8195	13780	18670	9240	5093	4877
MAX	12610	10850	11640	8380	9327	11800	15540	28600	53620	26580	10550	10240
(WY)	1966	1966	1960	1997	1997	1910	1910	1894	1908	1907	1993	1984
MIN	2441	2789	2446	2377	2492	2986	3574	4144	4055	2433	1576	1890
(WY)	1920	1920	1932	1932	1937	1938	1961	1941	1977	1919	1934	1934

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1891 - 2000	
ANNUAL TOTAL	2699900		1976850			
ANNUAL MEAN	7397		5401		7725	
HIGHEST ANNUAL MEAN					11850	1894
LOWEST ANNUAL MEAN					3619	1937
HIGHEST DAILY MEAN	18200	Jun 7	7370	May 6	107000	Jun 7 1908
LOWEST DAILY MEAN	4200	Jan 26	3700	Sep 16	627	Jul 5 1936
ANNUAL SEVEN-DAY MINIMUM	5310	Jan 22	3870	Sep 11	1190	Jan 10 1932
INSTANTANEOUS PEAK FLOW			7890	Feb 24	a140000	Jun 6 1908
INSTANTANEOUS PEAK STAGE			3.13	Feb 24	b18.50	Jun 6 1908
INSTANTANEOUS LOW FLOW					c320	Jul 5 1936
ANNUAL RUNOFF (AC-FT)	5355000		3921000		5597000	
10 PERCENT EXCEEDS	9930		6160		14600	
50 PERCENT EXCEEDS	7000		5640		5700	
90 PERCENT EXCEEDS	5540		4180		3500	

a--About, observed; from rating table extended above 63,000 ft^3/s.
b--Present datum.
c--Gage height, -0.05 ft.
e--Estimated.

MARIAS RIVER BASIN

06091700 TWO MEDICINE RIVER BELOW SOUTH FORK, NEAR BROWNING, MT

LOCATION.--Lat 48°25'36", long 112°59'20", in $SE^1/_4SE^1/_4SE^1/_4$ 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 above sea level, from topographic map. May 1977 to September 1997 at datum 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	211	203	e90	e90	e85	138	812	901	423	236	65
2	82	205	190	e80	e100	e85	180	1090	838	413	231	67
3	77	195	172	e80	e90	e90	150	1120	785	393	228	69
4	77	274	136	e85	e85	e85	231	1250	775	381	216	66
5	77	240	132	e90	e85	e80	360	1060	811	340	212	64
6	76	250	149	e90	e85	e75	276	972	892	300	206	64
7	74	234	153	e95	e90	e70	220	820	962	292	203	63
8	79	226	142	e100	e100	e65	206	733	1020	280	201	61
9	194	225	e135	e100	e95	e70	255	715	1070	281	189	61
10	145	220	e130	e95	e90	e75	353	728	971	266	164	64
11	123	213	144	e95	e80	e80	318	662	857	267	164	66
12	139	224	155	e90	e70	85	443	581	770	257	145	62
13	172	746	144	e90	e65	78	618	541	809	250	139	35
14	199	1190	133	e85	e65	76	484	531	851	242	137	31
15	160	1050	136	e80	e60	69	461	525	1180	249	132	30
16	124	793	149	e75	e60	74	485	558	1300	251	113	30
17	122	611	156	e85	e55	67	578	635	1240	243	98	28
18	113	507	e130	e95	e50	68	719	747	1070	237	84	28
19	105	430	e110	e85	e55	67	814	913	994	232	67	29
20	98	394	e120	e80	e65	68	954	967	895	230	64	31
21	95	342	e120	e85	e80	61	1140	1040	791	258	64	38
22	93	292	e110	e80	e100	81	1230	1240	745	255	63	40
23	89	253	e100	e75	e95	104	1190	1380	713	249	62	34
24	86	245	e95	e80	e90	101	1000	1270	677	240	61	36
25	85	242	e90	e80	e80	103	833	1120	671	237	62	36
26	86	219	e90	e85	e75	106	721	1020	597	234	60	37
27	94	210	e95	e90	e75	117	670	939	546	229	59	36
28	98	202	e100	e85	e80	149	774	1090	506	232	60	35
29	151	185	e95	e80	e80	149	789	971	462	243	59	33
30	174	201	e95	e80	---	124	736	935	437	240	63	33
31	187	---	e90	e80	---	122	---	1050	---	240	67	---
TOTAL	3556	10829	3999	2665	2290	2729	17326	28015	25136	8484	3909	1372
MEAN	115	361	129	86.0	79.0	88.0	578	904	838	274	126	45.7
MAX	199	1190	203	100	100	149	1230	1380	1300	423	236	69
MIN	74	185	90	75	50	61	138	525	437	229	59	28
AC-FT	7050	21480	7930	5290	4540	5410	34370	55570	49860	16830	7750	2720
†	89	0	0	0	0	0	0	4670	9200	10610	6470	2150

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2000, BY WATER YEAR (WY)

MEAN	102	139	83.3	64.0	96.7	150	506	1190	1004	360	158	107
MAX	533	558	394	180	394	474	923	2040	1843	568	241	240
(WY)	1986	1996	1996	1981	1996	1986	1990	1991	1995	1991	1997	1985
MIN	25.0	18.8	19.7	17.9	26.4	40.5	217	439	282	173	41.2	24.4
(WY)	1980	1980	1999	1982	1980	1980	1995	1977	1977	1994	1994	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1977 - 2000	
ANNUAL TOTAL	137180		110310			
ANNUAL MEAN	376		301		336	
HIGHEST ANNUAL MEAN					542	1991
LOWEST ANNUAL MEAN					202	1988
HIGHEST DAILY MEAN	2230	May 26	1380	May 23	8600	Jun 7 1995
LOWEST DAILY MEAN	20	Jan 1	28	Sep 17	10	Jan 29 1980
ANNUAL SEVEN-DAY MINIMUM	22	Jan 1	30	Sep 14	13	Feb 3 1982
INSTANTANEOUS PEAK FLOW			1400	May 23	b11700	May 19 1991
INSTANTANEOUS PEAK STAGE			4.05	May 23	c8.25	Jun 7 1995
INSTANTANEOUS LOW FLOW			a25	Mar 21		
ANNUAL RUNOFF (AC-FT)	272100		218800		243700	
10 PERCENT EXCEEDS	1140		893		970	
50 PERCENT EXCEEDS	160		143		132	
90 PERCENT EXCEEDS	40		63		35	

†--Flows, in acre-feet, in Two Medicine Canal.
a--Gage height, 1.28 ft.
b--Gage height, 7.78 ft, previous datum; from rating curve extended above 5,550 ft^3/s.
c--Previous datum.
e--Estimated.

MARIAS RIVER BASIN

06093200 BADGER CREEK BELOW FOUR HORNS CANAL, NEAR BROWNING, MT

LOCATION.--Lat 48°22'12", long 112°48'07", in NW$^1/_4$SW$^1/_4$SE$^1/_4$ 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 above sea level, from topographic map. May 1951 to September 1973, water-stage recorder at site 3.4 mi upstream (station number 06092500) at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Four Horns Canal diverts water from right bank in NE$^1/_4$ 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	43	116	93	e90	88	91	250	266	122	43	39
2	41	40	112	93	e95	88	98	348	252	117	43	39
3	40	39	110	81	e90	88	93	350	254	115	43	38
4	40	48	101	e85	e90	90	98	392	265	111	43	38
5	40	46	102	e90	e95	92	107	338	296	102	43	38
6	39	44	105	e90	99	91	112	305	330	113	42	38
7	39	48	107	91	99	89	111	267	346	97	41	38
8	39	71	103	94	102	88	108	248	351	85	41	37
9	52	112	e100	94	101	88	111	239	413	82	41	36
10	42	110	106	91	99	87	120	231	327	76	41	36
11	40	108	105	e85	86	87	129	216	281	70	41	36
12	44	107	105	e80	e85	86	141	200	242	63	46	36
13	49	194	102	e80	e85	86	170	183	236	60	63	34
14	43	238	103	e75	e80	87	169	183	225	58	65	34
15	40	193	104	e75	e80	85	159	186	344	59	80	34
16	39	171	102	e80	e75	85	157	220	355	55	61	34
17	38	160	100	e85	e75	85	158	268	327	53	36	34
18	38	151	102	e80	e75	86	178	304	289	52	37	33
19	37	140	99	e80	e80	84	208	371	277	52	36	30
20	37	136	96	e80	e90	83	249	342	255	51	36	29
21	37	131	105	e85	102	81	303	376	229	50	36	29
22	37	125	99	e80	101	85	370	462	217	48	37	28
23	37	125	94	e80	97	89	369	518	205	47	38	28
24	36	121	95	e80	94	87	323	475	191	46	38	27
25	37	119	94	e80	90	86	273	433	189	48	38	27
26	37	124	93	e85	88	87	230	402	167	49	38	27
27	38	118	94	e85	89	87	218	366	153	51	38	27
28	38	115	93	e80	89	91	250	432	144	49	38	27
29	40	112	92	e80	89	93	264	364	135	46	38	26
30	39	116	92	e80	---	91	250	324	127	45	39	25
31	40	---	92	e80	---	90	---	318	---	44	39	---
TOTAL	1234	3405	3123	2597	2610	2710	5617	9911	7688	2116	1339	982
MEAN	39.8	114	101	83.8	90.0	87.4	187	320	256	68.3	43.2	32.7
MAX	52	238	116	94	102	93	370	518	413	122	80	39
MIN	36	39	92	75	75	81	91	183	127	44	36	25
AC-FT	2450	6750	6190	5150	5180	5380	11140	19660	15250	4200	2660	1950
†	4490	1150	0	0	0	0	405	6110	6220	5670	3650	3590

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2000, BY WATER YEAR (WY)

MEAN	87.5	117	99.6	91.3	92.7	96.4	177	516	569	166	76.5	69.9
MAX	316	295	184	160	198	205	321	899	2240	568	184	199
(WY)	1986	1990	1976	1976	1996	1986	1990	1976	1975	1975	1975	1993
MIN	9.13	63.3	42.9	63.0	59.5	44.6	62.3	140	58.9	17.5	16.4	15.6
(WY)	1978	1984	1984	1980	1989	1977	1977	1977	1977	1977	1984	1988

06093200 BADGER CREEK BELOW FOUR HORNS CANAL, NEAR BROWNING, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1974 - 2000	
ANNUAL TOTAL	59504		43332			
ANNUAL MEAN	163		118*		180**	
HIGHEST ANNUAL MEAN					350	1975
LOWEST ANNUAL MEAN					68.1	1977
HIGHEST DAILY MEAN	1160	May 26	518	May 23	14000	Jun 19 1975
LOWEST DAILY MEAN	36	Oct 24	25	Sep 30	6.5	Sep 17 1984
ANNUAL SEVEN-DAY MINIMUM	37	Oct 19	27	Sep 24	7.7	Oct 25 1977
INSTANTANEOUS PEAK FLOW			559	May 23	a20700	Jun 19 1975
INSTANTANEOUS PEAK STAGE			5.89	May 23	13.58	Jun 19 1975
INSTANTANEOUS LOW FLOW						
ANNUAL RUNOFF (AC-FT)	118000		85950		130300	
10 PERCENT EXCEEDS	427		270		407	
50 PERCENT EXCEEDS	92		89		99	
90 PERCENT EXCEEDS	42		37		44	

†--Diversion in acre-feet, by Four Horns Canal.
*--162 ft^3/s adjusted for flow from Four Horns Canal.
**--218 ft^3/s adjusted for flow from Four Horns Canal.
a--From rating curve extended above 7,700 ft^3/s, based on comparison with previous site 3.4 miles upstream (station number 06092500).
e--Estimated.

MARIAS RIVER BASIN

06098500 CUT BANK CREEK NEAR BROWNING, MT

LOCATION--Lat 48°37'00", long 113°02'06", in $NE^1/_4NW^1/_4SW^1/_4$ 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 above sea level, from topographic map. April 1918 to October 1925, water-stage recorder at site about 120 ft upstream at different datum. April 1991 to September 1995 at datum 1.00 ft higher.

REMARKS.--Records good except those for August to September, which are fair, and 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	99	89	43	e40	50	63	224	287	187	46	26
2	43	90	82	e40	e50	51	78	290	237	183	43	28
3	40	85	73	e35	e45	55	74	348	236	176	43	33
4	37	98	49	e40	e42	57	82	365	290	166	47	33
5	37	97	64	e45	e40	60	118	334	356	146	48	35
6	37	88	60	46	e42	56	106	275	387	126	42	36
7	38	86	60	44	e45	50	91	232	452	116	40	36
8	39	91	53	44	e50	51	83	202	449	105	39	33
9	98	93	53	43	e45	52	85	187	447	104	37	34
10	172	91	55	40	e42	47	97	183	417	99	37	36
11	143	89	52	e40	e40	46	99	170	353	96	40	39
12	135	85	55	e38	e38	45	99	160	305	95	38	40
13	137	216	56	e35	e37	43	124	150	359	93	34	40
14	245	662	57	e32	e36	45	116	143	457	93	32	42
15	237	528	54	e30	e34	44	121	141	636	95	31	45
16	180	340	55	e35	e32	43	133	147	746	95	29	47
17	144	244	53	e40	e30	43	155	168	576	89	27	48
18	122	193	54	e38	e30	44	174	225	452	81	27	48
19	108	156	56	e35	e35	44	170	300	403	77	25	49
20	98	136	e50	e35	e40	41	185	314	381	78	24	51
21	92	119	55	e38	52	40	221	330	330	72	24	52
22	84	107	53	e37	83	46	282	493	323	67	24	51
23	78	91	48	e35	74	59	316	588	342	64	20	51
24	75	94	47	e35	63	58	285	538	312	60	18	50
25	73	90	47	e35	55	56	249	439	294	56	19	50
26	73	91	45	e38	46	58	214	390	258	54	18	46
27	76	e75	46	e42	47	62	191	359	232	53	18	45
28	78	e65	46	e40	48	70	194	387	207	50	19	39
29	89	e75	47	e37	49	70	226	362	194	47	19	39
30	91	89	45	e35	---	63	228	316	193	45	22	39
31	92	---	43	e35	---	60	---	326	---	46	25	---
TOTAL	3035	4463	1702	1185	1310	1609	4659	9086	10911	2914	955	1241
MEAN	97.9	149	54.9	38.2	45.2	51.9	155	293	364	94.0	30.8	41.4
MAX	245	662	89	46	83	70	316	588	746	187	48	52
MIN	37	65	43	30	30	40	63	141	193	45	18	26
AC-FT	6020	8850	3380	2350	2600	3190	9240	18020	21640	5780	1890	2460

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 2000, BY WATER YEAR (WY)*

MEAN	59.1	69.3	47.7	34.5	45.9	59.6	138	427	503	189	70.3	44.3
MAX	136	216	157	73.8	139	110	217	740	793	312	140	81.8
(WY)	1996	1996	1996	1996	1996	1997	1996	1991	1995	1991	1923	1993
MIN	22.8	27.8	21.8	20.8	18.4	25.0	60.5	248	184	78.5	30.8	15.0
(WY)	1999	1999	1993	1993	1993	1923	1995	1992	1992	1919	2000	1919

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1918 - 2000*	
ANNUAL TOTAL	52957		43070			
ANNUAL MEAN	145		118		135	
HIGHEST ANNUAL MEAN					201	1996
LOWEST ANNUAL MEAN					84.3	1992
HIGHEST DAILY MEAN	891	May 26	746	Jun 16	3400	Jun 7 1995
LOWEST DAILY MEAN	21	Sep 24	18	Aug 24	14	Sep 26 1994
ANNUAL SEVEN-DAY MINIMUM	25	Jan 4	19	Aug 23	15	Sep 23 1994
INSTANTANEOUS PEAK FLOW			840	Jun 16	b5480	Jun 7 1995
INSTANTANEOUS PEAK STAGE			3.46	Jun 16	c5.59	Jun 7 1995
INSTANTANEOUS LOW FLOW			a17	Aug 23	d4.9	Nov 22 1994
ANNUAL RUNOFF (AC-FT)	105000		85430		97770	
10 PERCENT EXCEEDS	389		315		439	
50 PERCENT EXCEEDS	71		60		73	
90 PERCENT EXCEEDS	27		35		26	

*--During periods of operation (April 1918 to October 1925, seasonal records only; April 1991 to current year).
a--Gage height, 1.60 ft.
b--From rating curve extended above 2,500 ft^3/s.
c--Previous datum.
d--Gage height, 0.60 ft, result of freezeup.
e--Estimated.

MARIAS RIVER BASIN

06099000 CUT BANK CREEK AT CUT BANK, MT

LOCATION.--Lat 48°38'00", long 112°20'46", in $SW^1/_4SE^1/_4NE^1/_4$ 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. Datum of gage is 3,561.42 ft above sea level. Prior to May 12, 1922, nonrecording gage at several sites 0.5 mi upstream at various datums. May 12, 1922 to Nov. 1, 1924, nonrecording gage at present site and different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Few minor diversions for irrigation and municipal water supply for city of Cut Bank 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e55	108	e100	e55	e35	e55	86	203	341	192	29	17
2	e60	116	e100	e50	e40	e60	86	198	279	183	32	24
3	e55	109	e90	e40	e55	e60	92	251	244	170	32	26
4	e50	107	e80	e35	e50	e65	95	287	240	165	38	23
5	46	113	e70	e35	e45	e70	97	322	278	157	43	22
6	44	121	e80	e45	e40	e75	125	298	327	151	50	24
7	43	111	e75	e55	e42	e70	128	255	347	132	53	24
8	42	108	e70	e55	e48	e60	112	223	382	121	49	24
9	43	113	e70	e50	e55	e60	100	201	393	110	47	25
10	48	114	e70	e50	e50	e65	96	183	366	99	40	29
11	155	111	e70	e48	e45	e60	103	180	331	92	40	31
12	156	108	e70	e45	e42	e55	107	175	298	86	36	31
13	153	107	e75	e40	e40	e55	104	162	265	82	38	33
14	150	225	e75	e35	e38	e50	128	151	310	73	31	30
15	236	e700	e75	e32	e35	e55	122	136	378	67	28	21
16	245	e600	e70	e30	e32	e55	127	125	470	68	27	15
17	202	e500	e65	e35	e30	e55	145	127	495	64	29	13
18	173	e350	e65	e40	e30	e55	163	150	500	56	27	13
19	149	e250	e70	e38	e30	e55	168	232	498	47	23	15
20	132	e200	e70	e35	e35	e55	167	302	493	51	15	16
21	120	e150	e70	e35	e40	e50	176	292	445	48	13	19
22	112	e130	e70	e38	e60	e45	197	313	368	46	13	25
23	105	e120	e65	e35	e100	e60	240	387	338	40	13	32
24	97	e110	e60	e35	e80	e75	267	418	338	36	12	39
25	92	e110	e60	e35	e65	e70	249	419	332	36	13	38
26	90	e110	e60	e35	e55	e70	225	369	302	34	11	31
27	90	e100	e60	e38	e50	e80	197	331	255	33	11	27
28	95	e90	e60	e45	e50	88	181	304	234	34	12	24
29	95	e80	e60	e42	e55	97	181	338	209	30	12	25
30	102	e90	e60	e38	---	101	202	329	193	29	11	22
31	108	---	e55	e35	---	93	---	325	---	27	13	---
TOTAL	3343	5361	2190	1259	1372	2019	4466	7986	10249	2559	841	738
MEAN	108	179	70.6	40.6	47.3	65.1	149	258	342	82.5	27.1	24.6
MAX	245	700	100	55	100	101	267	419	500	192	53	39
MIN	42	80	55	30	30	45	86	125	193	27	11	13
AC-FT	6630	10630	4340	2500	2720	4000	8860	15840	20330	5080	1670	1460
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2000, BY WATER YEAR (WY)*												
MEAN	86.3	78.4	48.2	35.2	58.8	154	245	489	622	245	91.4	76.6
MAX	268	271	185	115	414	1053	664	894	1630	605	233	298
(WY)	1952	1990	1996	1990	1986	1972	1952	1954	1908	1951	1972	1911
MIN	15.2	28.1	15.0	1.61	11.1	6.90	79.4	198	174	17.0	5.56	5.92
(WY)	1920	1964	1984	1982	1985	1907	1984	1984	1992	1988	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1905 - 2000*	
ANNUAL TOTAL	57231		42383			
ANNUAL MEAN	157		116		184	
HIGHEST ANNUAL MEAN					317	1972
LOWEST ANNUAL MEAN					73.9	1988
HIGHEST DAILY MEAN	764	May 27	700	Nov 15	11200	Jun 9 1964
LOWEST DAILY MEAN	27	Jan 9	11	Aug 26	1.0	Jan 22 1982
ANNUAL SEVEN-DAY MINIMUM	30	Jan 5	12	Aug 24	1.1	Jan 20 1982
INSTANTANEOUS PEAK FLOW			a		c16600	Jun 9 1964
INSTANTANEOUS PEAK STAGE					13.93	Jun 9 1964
INSTANTANEOUS LOW FLOW			b9.0	Aug 24	d.92	Sep 10 1988
ANNUAL RUNOFF (AC-FT)	113500		84070		133600	
10 PERCENT EXCEEDS	432		299		500	
50 PERCENT EXCEEDS	90		70		85	
90 PERCENT EXCEEDS	36		27		25	

*--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--Not determined.
b--Gage height, 1.50 ft.
c--From rating curve extended above 12,000 ft^3/s on the basis of slope-area measurement of peak flow.
d--Gage height, 0.59 ft.
e--Estimated.

MARIAS RIVER BASIN

06099500 MARIAS RIVER NEAR SHELBY, MT

LOCATION.--Lat 48°25'38", long 111°53'20", in $SE^1/_4NW^1/_4SE^1/_4$ 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. Datum of gage is 3,087.72 ft above sea level. 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 datum. Dec. 23, 1947, to Apr. 6, 1976, water-stage recorder at site 150 ft downstream at same datum.

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. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	256	368	692	e370	e300	e330	359	1260	1730	627	103	69
2	262	391	636	e350	e350	e340	348	1310	1500	594	99	99
3	279	417	613	e320	e370	e350	381	1620	1310	557	103	135
4	267	409	575	e280	e350	e330	399	1760	1230	540	104	129
5	245	414	524	e300	e330	e300	405	1920	1240	514	108	115
6	232	476	457	e320	e340	e260	541	1740	1350	497	115	103
7	232	467	467	e340	e350	e240	605	1600	1430	455	118	102
8	229	456	464	e350	e370	e230	545	1420	1510	405	123	104
9	226	447	e460	e360	e400	e220	491	1270	1600	384	119	98
10	238	494	e460	e350	e350	e230	485	1180	1650	351	121	95
11	331	505	e470	e320	e300	e240	567	1150	1470	315	124	97
12	407	507	e480	e300	e270	e250	607	1110	1320	281	125	102
13	412	501	e480	e280	e260	e250	660	1030	1180	258	120	104
14	420	858	e450	e280	e250	e230	882	957	1160	235	118	107
15	453	1640	e420	e270	e240	e220	895	915	1270	210	122	106
16	539	1620	e430	e250	e230	e230	885	882	1710	196	119	102
17	494	1350	e450	e280	e220	e240	894	923	2080	191	121	95
18	435	1170	e430	e340	e210	e250	966	996	1950	185	117	84
19	395	1040	e400	e310	e200	e250	1100	1120	1670	167	105	83
20	358	942	e350	e280	e230	e260	1220	1400	1560	162	98	85
21	327	856	e370	e280	e300	e270	1370	1490	1430	150	92	96
22	356	780	e400	e310	e360	302	1590	1600	1310	137	89	111
23	307	727	e420	e300	e400	341	1770	1910	1250	143	84	128
24	291	716	e420	e290	e380	342	1790	2150	1150	156	78	141
25	276	678	e400	e300	e320	345	1600	2030	1140	119	73	142
26	270	686	e380	e290	e300	339	1410	1790	1090	114	68	128
27	279	613	e400	e320	e300	344	1260	1610	965	111	64	118
28	283	425	e420	e310	e310	345	1170	1480	864	104	62	108
29	288	510	e400	e290	e320	370	1270	1730	772	104	59	100
30	290	682	e390	e280	---	407	1310	1620	683	103	61	94
31	339	---	e380	e280	---	395	---	1570	---	103	64	---
TOTAL	10016	21145	14088	9500	8910	9050	27775	44543	40574	8468	3076	3180
MEAN	323	705	454	306	307	292	926	1437	1352	273	99.2	106
MAX	539	1640	692	370	400	407	1790	2150	2080	627	125	142
MIN	226	368	350	250	200	220	348	882	683	103	59	69
AC-FT	19870	41940	27940	18840	17670	17950	55090	88350	80480	16800	6100	6310

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 2000, BY WATER YEAR (WY)*

MEAN	411	400	309	257	322	588	1145	2734	3074	1062	391	361
MAX	1448	1485	1135	700	1173	2300	3149	5300	10190	3982	1100	1853
(WY)	1952	1990	1996	1918	1986	1947	1934	1927	1948	1902	1927	1911
MIN	101	132	103	41.9	58.7	146	280	711	409	147	67.1	66.4
(WY)	1937	1964	1937	1937	1936	1922	1931	1977	1977	1940	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1902 - 2000*	
ANNUAL TOTAL	259268		200325			
ANNUAL MEAN	710		547		910	
HIGHEST ANNUAL MEAN					1929	1927
LOWEST ANNUAL MEAN					302	1977
HIGHEST DAILY MEAN	3420	May 27	2150	May 24	109000	Jun 9 1964
LOWEST DAILY MEAN	150	Jan 24	59	Aug 29	10	Aug 20 1919
ANNUAL SEVEN-DAY MINIMUM	171	Jan 22	64	Aug 26	21	Jan 25 1937
INSTANTANEOUS PEAK FLOW			2190	May 24	b241000	Jun 9 1964
INSTANTANEOUS PEAK STAGE			5.15	May 24	c23.64	Jun 9 1964
INSTANTANEOUS LOW FLOW			a56	Aug 29	d10	Aug 20 1919
ANNUAL RUNOFF (AC-FT)	514300		397300		659400	
10 PERCENT EXCEEDS	1810		1410		2420	
50 PERCENT EXCEEDS	400		350		410	
90 PERCENT EXCEEDS	200		104		160	

*--During periods of operation (1903-04, 1906, 1912 to current year).
a--Gage height, 2.26 ft.
b--Largely due to failure of Swift Dam, from slope-area measurement. Maximum unaffected by dam failure, 75,000 ft^3/s, June 20, 1975, gage height, 18.21 ft.
c--From floodmark.
d--Observed, site and datum then in use.
e--Estimated.

MARIAS RIVER BASIN

06101500 MARIAS RIVER NEAR CHESTER, MT

LOCATION.--Lat 48°18'23", long 111°04'47", in $SW^1/_4SW^1/_4SW^1/_4$ 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. Datum of gage is 2,814.03 ft above sea level (Bureau of Reclamation bench mark). Prior to Oct. 1, 1921, nonrecording gage at bridge 2.5 mi downstream at different datum. Oct. 4, 1945, to Sept. 30, 1946, nonrecording gage at site 3 mi downstream at different datum.

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 datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	730	653	640	634	506	500	509	511	490	518	515	528
2	732	653	640	632	506	500	507	511	492	519	521	529
3	730	653	640	634	506	500	511	512	489	520	520	528
4	730	651	640	632	506	500	510	512	493	520	518	528
5	731	653	640	629	506	500	503	590	489	521	523	528
6	730	653	640	628	506	500	504	665	489	520	522	528
7	730	653	640	628	506	500	504	665	492	521	521	528
8	731	653	640	628	505	501	503	665	484	522	520	528
9	730	653	640	628	504	496	503	670	510	523	518	527
10	731	650	639	627	505	490	503	671	517	523	518	528
11	730	652	637	629	505	511	507	666	517	520	523	528
12	731	648	639	628	506	511	506	673	517	523	523	528
13	695	647	635	628	504	511	503	672	517	523	522	528
14	659	647	634	628	505	511	506	674	517	523	522	529
15	659	647	635	628	503	511	507	667	516	521	525	528
16	659	647	634	628	501	513	506	673	510	524	523	528
17	658	647	635	626	501	510	505	668	514	523	528	528
18	659	647	634	625	500	511	510	664	517	523	520	459
19	659	647	634	626	500	510	506	668	513	523	523	422
20	659	647	634	626	500	511	506	661	517	520	523	423
21	659	647	634	624	500	511	506	665	518	520	519	418
22	659	647	634	623	500	513	506	668	519	523	521	421
23	659	647	634	625	500	511	506	669	521	525	523	422
24	659	647	634	624	500	511	504	672	520	524	528	422
25	659	646	634	624	500	511	503	672	521	528	528	422
26	660	647	634	622	500	510	506	672	517	528	528	422
27	662	647	634	622	501	510	515	672	516	524	527	422
28	660	647	634	622	500	511	507	672	517	523	528	422
29	659	641	634	622	500	512	511	675	517	528	526	422
30	659	640	634	622	---	511	511	636	517	528	527	421
31	656	---	634	550	---	510	---	572	---	522	529	---
TOTAL	21324	19457	19724	19352	14582	15718	15194	19903	15283	16203	16212	14495
MEAN	688	649	636	624	503	507	506	642	509	523	523	483
MAX	732	653	640	634	506	513	515	675	521	528	529	529
MIN	656	640	634	550	500	490	503	511	484	518	515	418
AC-FT	42300	38590	39120	38380	28920	31180	30140	39480	30310	32140	32160	28750

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2000, BY WATER YEAR (WY)*

MEAN	747	601	446	407	446	618	838	1269	1719	1230	944	865
MAX	2758	1733	1050	1079	1068	2400	2343	3541	6254	5325	2909	3063
(WY)	1966	1986	1990	1990	1990	1947	1996	1947	1964	1975	1964	1965
MIN	208	.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 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1921 - 2000*	
ANNUAL TOTAL	210616		207447			
ANNUAL MEAN	577		567		844	
HIGHEST ANNUAL MEAN					1488	1959
LOWEST ANNUAL MEAN					97.5	1956
HIGHEST DAILY MEAN	739	Sep 11	732	Oct 2	10100	Jun 12 1964
LOWEST DAILY MEAN	505	Jan 13	418	Sep 21	.20	Oct 29 1955
ANNUAL SEVEN-DAY MINIMUM	506	Jan 10	421	Sep 21	.20	Oct 29 1955
INSTANTANEOUS PEAK FLOW			737	Oct 1	a10400	Jun 16 1964
INSTANTANEOUS PEAK STAGE			3.78	Oct 1	10.63	Jun 16 1964
INSTANTANEOUS LOW FLOW					b.20	Nov 10 1955
ANNUAL RUNOFF (AC-FT)	417800		411500		611200	
10 PERCENT EXCEEDS	660		663		1720	
50 PERCENT EXCEEDS	542		524		582	
90 PERCENT EXCEEDS	506		500		216	

*--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; ocurred about Mar. 20, 1947.
b--Probably less than; during Tiber Dam shutdown.

MARIAS RIVER BASIN

06102500 TETON RIVER BELOW SOUTH FORK, NEAR CHOTEAU, MT

LOCATION.--Lat 47°52'59", long 112°36'40", in NE$^1/_4$NE$^1/_4$NE$^1/_4$ sec.34, T.25 N., R.8 E., 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.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--105 mi^2.
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 4,780 ft above sea level, from topographic map. June 1947 to October 1954, water-stage recorder 300 ft downstream at different datum.
REMARKS.--Seasonal water-discharge records good. Negligible diversion for irrigation upstream from 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				50	157	214	147	79	67	63		
2				53	206	218	143	78	68	63		
3				52	223	233	145	78	68	63		
4				55	239	255	139	80	67	63		
5				57	232	294	135	78	66	63		
6				58	216	322	132	77	66	62		
7				57	203	329	125	76	65	61		
8				56	194	336	121	75	65	61		
9				58	185	328	120	74	66	61		
10				60	178	288	116	75	66	61		
11				61	169	252	111	76	65	61		
12				63	160	225	108	75	64	65		
13				69	153	211	105	73	63	65		
14				70	147	202	103	73	63	64		
15				68	145	252	101	73	63	64		
16				68	156	257	100	72	62	63		
17				68	167	246	98	72	61	62		
18				74	182	233	95	71	61	63		
19				83	211	224	92	70	62	63		
20				95	215	212	92	70	64	63		
21				117	232	202	91	70	66	62		
22				140	290	200	90	69	66	62		
23				159	317	196	89	68	63	62		
24				155	302	186	87	69	63	62		
25				146	282	179	86	68	62	62		
26				134	264	169	85	67	62	62		
27				129	245	164	84	67	62	62		
28				141	256	159	83	68	62	62		
29				144	243	152	82	67	62	61		
30				144	230	150	81	68	61	61		
31				---	247	---	80	68	---	61		
TOTAL				2684	6646	6888	3266	2244	1921	1933		
MEAN				89.5	214	230	105	72.4	64.0	62.4		
MAX				159	317	336	147	80	68	65		
MIN				50	145	150	80	67	61	61		
AC-FT				5320	13180	13660	6480	4450	3810	3830		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1954 AND SEASONS 1998 - 2000*

MEAN	47.9	46.3	45.1	87.3	351	522	252	117	88.5	81.8	68.6	56.9
MAX	59.0	59.0	48.9	142	516	1178	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	51.4	214	230	92.9	61.8	57.3	54.6	44.0	40.7
(WY)	1950	1949	1950	1950	2000	2000	1949	1949	1949	1950	1950	1950

SUMMARY STATISTICS	FOR 2000 SEASON			WATER YEARS 1947 - 1954*			SEASONS 1998 - 2000*		
ANNUAL MEAN				166					
HIGHEST ANNUAL MEAN				225		1953			
LOWEST ANNUAL MEAN				92.9		1949			
HIGHEST DAILY MEAN	336	Jun	8	2380	Jun 5	1948	601	Jun 5	1999
LOWEST DAILY MEAN	50	Apr	1	20	Jan 24	1949	50	Apr 1	2000
ANNUAL SEVEN-DAY MINIMUM				22	Jan 24	1949			
INSTANTANEOUS PEAK FLOW	357	Jun	9	b2780	Jun 3	1948	657	Jun 5	1999
INSTANTANEOUS PEAK STAGE	4.97	Jun	9	c7.34	Jan 6	1950	5.35	Jun 5	1999
INSTANTANEOUS LOW FLOW	a49	Apr	1	d12	Mar 28	1951	a49	Apr 1	2000
ANNUAL RUNOFF (AC-FT)				119900					
10 PERCENT EXCEEDS				418					
50 PERCENT EXCEEDS				80					
90 PERCENT EXCEEDS				43					

*--During periods of operation (June 1947 to October 1955, June 1998 to current year; seasonal records beginning 1998).
a--Gage height, 3.71 ft.
b--From rating curve extended above 1,100 ft^3/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.

06102500 TETON RIVER BELOW SOUTH FORK, NEAR CHOTEAU, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1998 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
NOV 1999								
09...	1220	70	8.4	373	8.0	5.0	<.01	<.05
JAN 2000								
19...	1030	63	8.3	393	-9.0	0.0	<.01	.07
FEB								
22...	1315	60	8.2	423	11.0	5.7	<.01	.06
APR								
04...	1215	55	7.7	389	15.0	9.0	<.01	.06
MAY								
09...	1210	185	8.4	304	9.5	6.5	<.01	<.05
JUN								
20...	0930	216	8.3	305	15.0	7.0	<.01	<.05
JUL								
18...	1515	95	8.4	350	29.0	16.0	<.01	<.05
AUG								
10...	1445	75	8.4	364	26.0	12.5	<.01	<.05
22...	1045	70	8.3	356	26.0	10.0	<.01	.06

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
09...	.04	<.01	<.05	<3	10	1.9	69
JAN 2000							
19...	<.02	<.01	<.05	<3	7	1.2	87
FEB							
22...	<.02	<.01	<.05	<3	1	.16	70
APR							
04...	<.02	<.01	<.05	<3	1	.15	60
MAY							
09...	<.02	<.01	<.05	<3	5	2.5	79
JUN							
20...	<.02	<.01	<.05	<3	2	1.2	90
JUL							
18...	<.02	<.01	<.05	<3	16	4.1	83
AUG							
10...	<.02	<.01	<.05	<3	7	1.4	76
22...	<.02	<.01	<.05	<3	15	2.9	92

MARIAS RIVER BASIN

06108000 TETON RIVER NEAR DUTTON, MT

LOCATION.--Lat 47°55'49", long 111°33'07", in $SE^1/_4SW^1/_4SW^1/_4$ 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 above sea level, from topographic map. Prior to July 17, 1965, water-stage recorder at site 1,800 ft downstream at datum 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	55	e55	e56	e60	e60	73	31	55	34	.00	.43
2	40	52	e51	e50	e51	e60	71	32	86	32	.00	1.7
3	39	50	e50	e45	e50	e60	70	29	117	30	.00	.46
4	39	53	e48	e38	e48	e60	70	27	85	28	.00	3.7
5	40	55	e50	e40	e55	e60	69	24	63	25	.00	6.6
6	40	55	e55	e46	e55	e60	68	22	56	28	.00	7.1
7	37	56	e50	e48	e55	e60	62	23	45	29	.00	7.6
8	35	58	e48	e46	e65	e60	56	23	45	25	.00	7.3
9	35	58	e50	e44	e60	e61	51	e24	44	25	.00	6.1
10	35	56	e55	e42	e50	e65	48	e24	43	25	.00	5.4
11	35	56	e55	e40	e40	e65	47	e23	42	22	.00	6.0
12	35	56	e60	e38	e40	e65	47	25	40	19	.00	6.8
13	37	55	e55	e40	e40	e65	45	23	36	16	.00	7.1
14	38	54	e48	e38	e45	e65	45	23	35	13	.16	7.2
15	39	53	e50	e40	e42	e65	44	22	45	8.6	.28	6.8
16	39	53	e55	e42	e40	e65	44	23	51	8.1	.63	4.8
17	39	53	e50	e44	e38	e70	46	22	59	5.7	1.6	4.4
18	41	56	e48	e46	e36	e70	44	20	71	6.1	.25	4.5
19	42	58	e50	e44	e45	e70	41	20	78	6.0	.00	5.1
20	42	57	e51	e44	e50	74	40	18	85	5.5	.14	6.6
21	42	55	e55	e48	e60	76	36	17	87	3.7	1.6	9.2
22	49	54	e58	e46	e70	77	34	17	81	4.3	2.1	11
23	48	44	e60	e44	e66	78	31	13	75	4.8	1.5	13
24	45	75	e61	e46	e65	77	30	11	71	3.6	1.6	15
25	44	72	e60	e48	e61	76	31	8.4	64	1.9	2.3	15
26	47	61	e50	e50	e60	75	31	7.3	64	1.7	2.2	13
27	57	e60	e60	e50	e60	74	30	8.1	60	.61	.96	15
28	60	e55	e65	e50	e60	75	30	8.1	55	.04	.23	15
29	63	e55	e60	e50	e60	77	32	9.5	48	.18	.00	15
30	68	e60	e56	e50	---	73	31	14	41	.00	.00	13
31	62	---	e56	e55	---	73	---	32	---	.00	.00	---
TOTAL	1351	1690	1675	1408	1527	2111	1397	623.4	1827	411.83	15.55	239.89
MEAN	43.6	56.3	54.0	45.4	52.7	68.1	46.6	20.1	60.9	13.3	.50	8.00
MAX	68	75	65	56	70	78	73	32	117	34	2.3	15
MIN	35	44	48	38	36	60	30	7.3	35	.00	.00	.43
AC-FT	2680	3350	3320	2790	3030	4190	2770	1240	3620	817	31	476

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2000, BY WATER YEAR (WY)

MEAN	72.8	73.5	66.8	57.2	89.4	190	163	258	401	166	76.6	68.0
MAX	223	176	209	167	388	819	495	957	2727	551	263	211
(WY)	1966	1976	1960	1976	1986	1969	1965	1976	1964	1958	1972	1993
MIN	15.7	19.0	17.9	13.2	15.2	39.0	46.6	20.1	16.9	1.30	.000	7.90
(WY)	1989	1989	1984	1985	1985	1995	2000	2000	1988	1985	1988	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1954 - 2000	
ANNUAL TOTAL	23402		14276.67			
ANNUAL MEAN	64.1		39.0		140	
HIGHEST ANNUAL MEAN					350	1964
LOWEST ANNUAL MEAN					32.2	1985
HIGHEST DAILY MEAN	346	Jun 5	117	Jun 3	20000	Jun 9 1964
LOWEST DAILY MEAN	13	Aug 1	.00	Jul 30	d.00	Jul 21 1984
ANNUAL SEVEN-DAY MINIMUM	16	Jul 28	.00	Jul 30	d.00	Jul 21 1984
INSTANTANEOUS PEAK FLOW			a124	Jun 3	f71300	Jun 9 1964
INSTANTANEOUS PEAK STAGE			b2.84	Mar 4	g20.48	Jun 9 1964
INSTANTANEOUS LOW FLOW			c.00	Jul 28	d.00	Jul 21 1984
ANNUAL RUNOFF (AC-FT)	46420		28320		101500	
10 PERCENT EXCEEDS	124		65		277	
50 PERCENT EXCEEDS	50		44		74	
90 PERCENT EXCEEDS	31		1.7		26	

a--Gage height, 1.98 ft.
b--Backwater from ice.
c--Gage height, 0.70 ft.
d--No flow at times during 1984, 1985, 1988, 2000.
e--Estimated.
f--From slope-area measurement of peak flow.
g--From floodmark.

MARIAS RIVER BASIN

06108000 TETON RIVER NEAR DUTTON, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May1998 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
NOV 1999								
09...	1430	57	8.6	1420	12.0	6.5	<.01	.34
JAN 2000								
19...	1530	44	8.2	844	-5.0	0.0	<.01	.72
FEB								
23...	1100	66	8.1	704	5.5	0.0	<.01	.57
APR								
04...	1500	70	8.5	1020	19.5	11.5	<.01	.25
MAY								
08...	1410	23	8.4	1000	18.0	16.5	<.01	<.05
JUN								
20...	1200	86	8.5	1080	17.0	17.0	<.01	<.05
JUL								
18...	1300	6.5	8.4	1150	30.5	23.0	<.01	<.05
AUG								
22...	1600	2.4	8.5	1290	29.5	23.5	<.01	<.05

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
09...	.04	<.01	E.04	<3	70	11	92
JAN 2000							
19...	.02	<.01	<.05	<3	56	6.7	79
FEB							
23...	.02	<.01	<.05	<3	20	3.6	92
APR							
04...	<.02	<.01	E.04	<3	83	16	97
MAY							
08...	<.02	<.01	<.05	<3	40	2.5	97
JUN							
20...	<.02	<.01	.11	<3	165	38	99
JUL							
18...	<.02	<.01	E.05	<3	57	1.0	98
AUG							
22...	<.02	<.01	E.05	<3	40	.26	99

MARIAS RIVER BASIN

06108800 TETON RIVER AT LOMA, MT

LOCATION (REVISED).--Lat 47°55'57", long 110°30'49", in NW$^1/_4$SW$^1/_4$SE$^1/_4$ sec.12, T.25 N., R.9 E., Teton 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 above sea level, from topographic map.
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 of station for irrigation.

DISCHARGE, CUBIC FEET PER SECOND, OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	44	65	e44	e32	e60	67	17	5.0	16	.00	.00
2	24	48	e60	e38	e30	e70	67	16	7.5	14	.00	.00
3	25	46	69	e32	e26	e80	63	15	11	11	.00	.00
4	26	44	e55	e34	e25	e100	61	18	21	9.8	.00	.00
5	27	42	e50	e42	e27	e120	59	16	49	6.9	.00	.00
6	27	42	e44	e44	e29	e110	59	16	46	6.0	.00	.00
7	26	43	e38	e46	e30	e100	56	16	37	3.2	.00	.00
8	26	44	e34	e48	e35	e90	55	14	32	2.5	.00	.00
9	27	45	e32	e48	e32	e85	52	11	26	2.8	.00	.00
10	26	45	e29	e45	e28	e90	49	9.5	21	1.5	.00	.00
11	25	46	e28	e43	e25	106	46	9.2	22	1.4	.00	.00
12	25	45	e30	e43	e26	113	43	11	21	1.2	.00	.00
13	26	45	e28	e40	e25	102	44	12	21	.55	.00	.00
14	25	45	e29	e36	e26	102	46	10	19	.00	.00	.00
15	24	45	e30	e36	e25	101	46	9.7	18	.00	.00	.00
16	24	44	e30	e40	e25	97	44	9.7	18	.00	.00	.00
17	24	46	e32	e36	e24	95	42	8.4	18	.00	.00	.00
18	27	46	e32	e32	e24	91	40	9.1	20	.00	.00	.00
19	29	47	e30	e25	e27	90	39	9.9	26	.00	.00	.00
20	30	49	e28	e27	e30	85	38	10	33	.00	.00	.00
21	29	48	e29	e30	e34	83	37	12	37	.00	.00	.00
22	30	49	e30	e27	e42	79	36	11	42	.00	.00	.00
23	31	e42	e34	e28	e46	77	34	9.0	46	.00	.00	.00
24	33	e44	e38	e28	e44	77	33	7.3	45	.00	.00	.00
25	35	42	e44	e28	e40	74	32	6.2	43	.00	.00	.00
26	37	e40	e42	e30	e38	72	30	6.4	40	.00	.00	.00
27	40	e38	e44	e28	e40	71	28	4.6	36	.00	.00	.00
28	41	e34	e50	e28	e40	70	20	2.8	33	.00	.00	.00
29	41	31	e48	e26	e42	77	19	2.7	29	.00	.00	.00
30	40	33	e48	e26	---	78	18	2.5	19	.00	.00	.00
31	41	---	e46	e28	---	74	---	3.3	---	.00	.00	---
TOTAL	910	1302	1226	1086	917	2719	1303	315.3	841.5	76.85	0.00	0.00
MEAN	29.4	43.4	39.5	35.0	31.6	87.7	43.4	10.2	28.0	2.48	.000	.000
MAX	41	49	69	48	46	120	67	18	49	16	.00	.00
MIN	19	31	28	25	24	60	18	2.5	5.0	.00	.00	.00
AC-FT	1800	2580	2430	2150	1820	5390	2580	625	1670	152	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1998 - 1999 AND WATER YEAR 2000*

MEAN	29.0	43.4	39.5	35.0	31.6	87.7	57.9	42.5	130	65.0	24.2	14.1
MAX	29.4	43.4	39.5	35.0	31.6	87.7	72.3	74.8	182	151	62.6	24.8
(WY)	2000	2000	2000	2000	2000	2000	1999	1999	1999	1998	1998	1999
MIN	28.6	43.4	39.5	35.0	31.6	87.7	43.4	10.2	28.0	2.48	.000	.000
(WY)	1999	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS	SEASONS 1998 - 1999*		WATER YEAR 2000	
ANNUAL TOTAL			10696.65	
ANNUAL MEAN			29.2	
HIGHEST DAILY MEAN	645	Jun 3 1999	120	Mar 5
LOWEST DAILY MEAN	.00	Jul 30 1999	.00	Jul 14
ANNUAL SEVEN-DAY MINIMUM			.00	Jul 14
INSTANTANEOUS PEAK FLOW	1650	Jun 3 1999	a127	Mar 12
INSTANTANEOUS PEAK STAGE	5.59	Jun 3 1999	b4.71	Dec 23
ANNUAL RUNOFF (AC-FT)			21220	
10 PERCENT EXCEEDS			60	
50 PERCENT EXCEEDS			28	
90 PERCENT EXCEEDS			.00	

*--Period of seasonal operation 1998-1999, water year records beginning 2000.
a--Gage height, 2.70 ft.
b--Backwater from ice.
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 2000.

INSTRUMENTATION.--Temperature recorder installed Oct. 20, 1999.

REMARKS.--No temperature data Oct. 26 to Nov. 3 due to equipment malfunction. No samples collected or temperature recorded during period of no flow July 14 to Sept. 30. 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, 29.5°C, July 2, 2000; minimum, 0.0°C on many days during winter.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 29.5°C, July 2; minimum, 0.0°C on many days November to March.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
09...	1630	43	8.5	926	13.0	8.0	.003
JAN 2000							
20...	0840	27	8.3	1160	-12.0	0.0	<.010
FEB							
23...	1400	44	8.1	862	9.5	0.0	<.010
APR							
04...	1800	59	8.5	1020	19.0	14.0	<.010
MAY							
08...	1110	13	8.4	1200	16.0	13.0	<.001
JUN							
09...	1215	28	8.5	1280	23.0	22.0	<.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
09...	.079	.43	<.001	.025	63	7.3	99
JAN 2000							
20...	.774	--	<.010	<.050	62	4.5	91
FEB							
23...	.515	--	<.010	<.050	41	4.9	92
APR							
04...	.155	--	<.010	.050	88	14	97
MAY							
08...	<.005	.31	<.001	.013	21	.74	98
JUN							
09...	<.005	.69	.010	.035	28	2.1	99

MARIAS RIVER BASIN

06108800 TETON RIVER AT LOMA, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
NOV 1999												
09...	1630	390	62	58	3.0	1	57	277	9.9	.4	2.1	230
JUN 2000												
09...	1215	500	62	83	4.3	2	110	249	12	.5	.87	440

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELENIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
NOV 1999											
09...	587	.80	68.1	<3	<.1	<1	2	<1	E2	<3	<31
JUN 2000											
09...	860	1.17	65.0	E1	<.1	<1	4	<1	4	<3	4

E--Estimated.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1				---	---	---	2.0	.0	1.0	.0	.0	.0
2				---	---	---	1.0	.0	.5	.0	.0	.0
3				---	---	---	2.0	.0	1.0	.0	.0	.0
4				7.5	3.5	5.5	.0	.0	.0	.0	.0	.0
5				4.0	.5	2.5	.0	.0	.0	.0	.0	.0
6				8.0	2.0	5.0	1.0	.0	.0	.0	.0	.0
7				7.5	3.5	6.0	.5	.0	.0	.0	.0	.0
8				6.0	3.5	5.0	.0	.0	.0	.0	.0	.0
9				8.0	4.0	6.0	.0	.0	.0	.0	.0	.0
10				6.5	3.5	5.0	.0	.0	.0	.0	.0	.0
11				7.0	3.0	5.0	.5	.0	.0	.0	.0	.0
12				11.5	5.5	8.0	.0	.0	.0	.0	.0	.0
13				9.5	7.0	8.0	.0	.0	.0	.0	.0	.0
14				9.0	5.0	7.0	.0	.0	.0	.0	.0	.0
15				7.5	3.5	5.5	.0	.0	.0	.0	.0	.0
16				8.0	3.5	5.5	.0	.0	.0	.0	.0	.0
17				6.0	3.5	4.5	.0	.0	.0	.0	.0	.0
18				5.0	2.5	4.0	.0	.0	.0	.0	.0	.0
19				3.0	.5	2.0	.0	.0	.0	.0	.0	.0
20				5.0	1.5	3.0	.0	.0	.0	.0	.0	.0
21	12.5	5.5	8.5	4.0	1.0	2.0	.0	.0	.0	.0	.0	.0
22	12.5	6.0	9.0	3.0	.0	1.5	.0	.0	.0	.0	.0	.0
23	12.5	5.5	9.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0
24	12.0	6.5	8.5	2.0	.0	.5	.0	.0	.0	.0	.0	.0
25	9.0	4.5	7.0	3.5	1.5	2.5	.0	.0	.0	.0	.0	.0
26	---	---	---	2.5	1.0	1.5	.0	.0	.0	.0	.0	.0
27	---	---	---	2.5	.5	1.5	.0	.0	.0	.0	.0	.0
28	---	---	---	1.5	.0	.5	.5	.0	.0	.0	.0	.0
29	---	---	---	.5	.0	.0	.5	.0	.0	.0	.0	.0
30	---	---	---	2.0	.0	.5	.0	.0	.0	.0	.0	.0
31	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	---	---	---	---	---	---	2.0	0.0	0.0	0.0	0.0	0.0

MARIAS RIVER BASIN

06108800 TETON RIVER AT LOMA, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	.0	.0	.0	8.5	4.0	6.0	23.5	11.0	16.5
2	.0	.0	.0	.0	.0	.0	8.5	4.0	6.0	17.0	12.0	14.5
3	.0	.0	.0	.0	.0	.0	12.0	2.0	6.5	21.5	10.0	15.5
4	.0	.0	.0	1.5	.0	.5	14.0	6.5	10.0	18.5	13.0	15.5
5	.0	.0	.0	5.5	.5	3.0	12.5	5.5	8.5	17.5	10.5	13.5
6	.0	.0	.0	4.0	2.5	3.0	11.0	6.5	8.5	19.5	10.0	14.5
7	.0	.0	.0	2.5	.5	1.5	13.0	4.5	8.5	20.5	8.5	14.0
8	.0	.0	.0	1.0	.0	.5	15.5	5.5	10.0	21.5	9.0	15.0
9	.0	.0	.0	1.5	.0	.5	17.0	7.0	12.0	18.5	11.5	15.0
10	.0	.0	.0	4.5	.0	1.5	13.0	8.0	10.5	19.0	10.0	14.5
11	.0	.0	.0	5.0	.5	2.5	15.0	6.5	10.5	13.0	7.0	10.0
12	.0	.0	.0	6.5	1.5	4.0	15.5	8.5	11.5	14.0	5.5	9.0
13	.0	.0	.0	6.5	1.5	4.0	11.5	.5	6.5	19.5	7.0	13.0
14	.0	.0	.0	5.5	2.0	3.5	7.0	.0	3.0	20.0	10.0	15.0
15	.0	.0	.0	5.5	.0	2.5	12.5	2.5	6.5	22.5	11.0	16.5
16	.0	.0	.0	5.0	.5	3.0	15.0	5.0	10.0	20.5	11.5	16.0
17	.0	.0	.0	6.5	2.5	4.5	17.0	9.0	13.0	24.0	12.0	17.5
18	.0	.0	.0	8.0	1.0	4.5	18.0	9.5	13.0	22.0	12.5	17.5
19	.0	.0	.0	6.5	3.5	5.0	20.0	8.5	14.0	17.5	13.0	15.5
20	.0	.0	.0	6.0	2.0	4.0	20.0	11.0	15.0	21.5	10.5	16.0
21	.0	.0	.0	7.0	.5	3.5	22.0	11.0	16.0	20.0	12.5	16.0
22	.0	.0	.0	10.5	1.5	6.0	20.5	13.0	16.5	22.0	13.0	17.0
23	.0	.0	.0	7.5	4.5	6.0	19.5	12.5	15.5	22.0	13.0	17.0
24	.0	.0	.0	10.0	3.5	6.0	17.0	10.5	13.5	25.0	10.5	17.5
25	.0	.0	.0	8.0	3.0	5.5	15.5	7.0	11.5	24.5	15.0	19.5
26	.0	.0	.0	12.0	4.0	7.5	18.5	8.5	13.5	23.0	15.0	18.5
27	.0	.0	.0	13.5	4.5	9.0	19.5	8.5	13.5	22.0	13.0	17.5
28	.0	.0	.0	10.5	7.5	9.0	20.0	9.0	13.5	22.5	14.0	18.0
29	.0	.0	.0	7.5	4.0	6.0	16.0	9.5	12.5	19.0	13.0	16.5
30	---	---	---	9.0	3.0	5.5	18.5	7.0	13.0	18.5	12.5	15.0
31	---	---	---	9.0	4.0	6.5	---	---	---	15.0	8.0	10.5
MONTH	0.0	0.0	0.0	13.5	0.0	4.0	22.0	0.0	11.0	25.0	5.5	15.5

		JUNE			JULY		AUGUST	SEPTEMBER
1	17.5	7.5	12.0	27.5	20.0	23.0		
2	22.5	10.0	16.0	29.5	18.5	23.5		
3	24.0	13.5	18.5	23.0	18.5	20.5		
4	26.0	13.5	19.5	25.0	16.0	20.5		
5	25.0	16.5	21.0	26.5	15.0	20.5		
6	27.0	17.5	22.0	27.0	18.0	21.5		
7	28.0	18.5	23.0	25.5	15.0	20.5		
8	28.0	18.5	22.5	28.5	17.0	22.5		
9	26.5	17.5	21.5	28.5	18.5	23.0		
10	24.5	14.5	19.5	28.5	20.5	24.5		
11	20.5	15.0	17.5	28.0	18.0	23.0		
12	20.0	14.0	17.0	28.5	18.5	23.0		
13	21.5	14.5	18.0	29.0	20.0	24.0		
14	19.5	13.5	16.5					
15	20.0	14.0	16.5					
16	17.0	12.5	15.0					
17	24.0	11.5	17.5					
18	25.0	15.0	20.0					
19	20.5	16.0	18.5					
20	22.5	14.0	17.5					
21	25.5	15.0	20.0					
22	25.0	17.5	20.5					
23	24.0	17.0	20.5					
24	21.0	16.0	18.5					
25	23.5	14.0	18.5					
26	23.0	15.5	19.0					
27	26.5	14.5	20.0					
28	28.0	16.0	22.0					
29	26.5	18.5	22.5					
30	29.5	17.5	23.5					
31	---	---	---					
MONTH	29.5	7.5	19.0					

MISSOURI RIVER MAIN STEM

06109500 MISSOURI RIVER AT VIRGELLE, MT

LOCATION.--Lat 48°00'18", long 110°15'25", in $SW^1/_4SW^1/_4SE^1/_4$ 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. Datum of gage is 2,507.50 ft above sea level. Prior to Sept. 30, 1953, water-stage recorder at Loma, 18 mi upstream, 2,543.40 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6150	5820	6340	6600	e6000	6760	6400	6410	7350	4860	4170	4420
2	6290	5680	6110	6530	6360	6770	6400	6630	7860	5040	4410	4470
3	6260	6140	6230	6530	6920	6700	5890	6580	7440	4980	4090	4580
4	6390	5950	6220	6250	7230	6880	6400	6750	7050	4790	4330	4610
5	6230	5780	6200	5500	7060	6780	5910	7530	6420	5080	4120	4530
6	6210	5950	6070	6600	6630	6680	5670	8210	6040	5260	4550	4460
7	6270	5930	6120	6710	6520	6660	5840	7870	6380	5000	4410	4540
8	6390	6000	6140	6640	6780	6310	5600	7370	6310	4950	4280	4270
9	6280	5980	6150	6240	6830	6120	5820	7270	6710	5250	4500	4220
10	6070	6220	5780	6460	6270	6340	5750	6850	6830	4940	4300	4310
11	5880	6210	6220	6190	6980	6540	5890	6380	6910	4760	4330	4270
12	6010	6150	6010	6020	e6000	6480	5950	6530	6820	4990	4660	4070
13	5950	6350	6170	5660	e5300	6610	6050	6650	5930	4700	4520	4280
14	5960	6300	6370	5570	e5300	6670	6090	6590	5350	4750	4410	4380
15	5800	6400	6000	6130	e5600	6890	5840	6450	5050	4760	4460	4400
16	5730	6270	6120	5780	e5400	6610	6190	6260	5010	4610	4080	4070
17	5870	6170	6310	6080	e6000	6570	6230	6350	5870	4580	3870	4100
18	5870	6240	6180	7080	e6600	6540	6350	6440	7000	4560	4160	4430
19	5790	6240	6150	7110	e6600	6510	6150	6430	7020	4530	4010	4460
20	5900	5930	5880	7450	e6500	6500	6080	6560	6840	4530	4340	4160
21	5970	5740	6270	7100	e6700	6260	6280	6520	6900	4610	4330	4430
22	6040	5830	6410	6600	e6700	6320	6290	6430	7000	4580	4450	4270
23	5900	5860	6580	e6800	e7000	6330	6460	6330	6550	4490	4350	4170
24	6010	5790	6470	e6700	e7500	6370	6690	6560	6100	4520	4550	4330
25	6050	5490	6440	e6600	e7800	6330	6770	6530	6690	4560	4440	4390
26	6090	5870	6370	e6400	e7000	6040	6770	6530	6260	4480	4260	4380
27	6280	6140	6400	e6200	e6500	6350	6740	6350	5960	4430	4370	4410
28	6480	6100	6390	e6300	e6430	6150	6620	6200	5430	4700	4120	4250
29	6420	6160	6490	e6500	6950	6330	6370	6080	5030	4360	4260	4260
30	6310	5990	6580	e6200	---	6450	6400	6370	5240	4360	4320	4350
31	6230	---	6530	e6000	---	6430	---	7190	---	4180	4230	---
TOTAL	189080	180680	193700	198530	189460	201280	185890	207200	191350	146190	133680	130270
MEAN	6099	6023	6248	6404	6533	6493	6196	6684	6378	4716	4312	4342
MAX	6480	6400	6580	7450	7800	6890	6770	8210	7860	5260	4660	4610
MIN	5730	5490	5780	5500	5300	6040	5600	6080	5010	4180	3870	4070
AC-FT	375000	358400	384200	393800	375800	399200	368700	411000	379500	290000	265200	258400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2000, BY WATER YEAR (WY)

MEAN	6243	6410	6334	6329	6666	7446	8830	13640	18240	9926	6215	5899
MAX	15340	12470	12220	8997	10240	14490	17720	28260	51960	29670	11950	11590
(WY)	1966	1966	1960	1976	1971	1978	1943	1976	1948	1975	1993	1965
MIN	3533	3207	3221	2716	2600	3784	4062	4819	4646	3704	2821	2818
(WY)	1938	1938	1937	1936	1937	1938	1961	1992	1977	1940	1937	1937

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1935 - 2000	
ANNUAL TOTAL	2897490		2147310			
ANNUAL MEAN	7938		5867		8545	
HIGHEST ANNUAL MEAN					13660	1975
LOWEST ANNUAL MEAN					4152	1937
HIGHEST DAILY MEAN	20100	Jun 8	8210	May 6	119000	Jun 5 1953
LOWEST DAILY MEAN	4400	Jan 26	3870	Aug 17	638	Jul 5 1936
ANNUAL SEVEN-DAY MINIMUM	5740	Jul 30	4180	Aug 16	2020	Feb 2 1937
INSTANTANEOUS PEAK FLOW			8290	May 6	a122000	Jun 5 1953
INSTANTANEOUS PEAK STAGE			4.29	May 6	b23.40	Jun 5 1953
ANNUAL RUNOFF (AC-FT)	5747000		4259000		6191000	
10 PERCENT EXCEEDS	10900		6790		14900	
50 PERCENT EXCEEDS	7300		6150		6850	
90 PERCENT EXCEEDS	5870		4360		4290	

a--From rating curve for former site at Loma, Mt, extended above 66,000 ft^3/s.
b--From floodmark.
e--Estimated.

MISSOURI RIVER MAIN STEM

06115200 MISSOURI RIVER NEAR LANDUSKY, MT

LOCATION.--Lat 47°37'51", long 108°41'13", in NW$^1/_4$NE$^1/_4$ sec.31, T.22 N., R.24 E., Fergus County, Hydrologic Unit 10040104, Fort Peck Game Range, 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. Datum of gage is 2,239.96 ft above sea level (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 datum 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6050	6110	5990	6360	e6100	e7000	6840	6580	7000	5520	4270	4280
2	5880	5840	6050	6540	e6100	e6800	6710	6600	7450	5360	4080	4290
3	6340	5700	6060	e6200	e6400	e6800	6780	6730	7700	5280	4300	4540
4	6130	5800	6080	e6600	e7000	e6800	6540	6810	7820	5560	4170	4580
5	6330	6040	6030	e6300	e7300	e6900	6370	6740	7210	5260	4170	4700
6	6270	5730	6040	e5600	e7100	e6800	6710	7390	6860	7020	4190	6170
7	6130	5810	5990	e6700	e6700	e6700	6010	8200	6270	5980	4180	4570
8	6210	5890	5940	e6700	e6600	e6700	6280	8150	6620	5260	4500	4450
9	6230	5890	5980	e6700	e6800	e6400	6020	7790	6130	6190	4290	4490
10	6330	5960	6120	e6300	e6900	e6200	6110	7640	6810	5990	4260	4140
11	6120	5940	e5800	e6500	e6300	e6400	6120	7430	6790	5600	4360	4360
12	5940	6160	e6200	e6200	e7000	e6600	6210	6920	6970	5120	4230	4340
13	5890	6060	e6000	e6100	e6100	e6500	6210	6720	7070	5050	4420	4320
14	5980	6080	e6200	e5700	e5400	7650	6400	6860	6580	4960	4530	4210
15	5890	6190	e6400	e5600	e5400	7300	6400	6960	5610	4820	4430	4390
16	5850	6160	e6000	e6200	e5700	7290	6310	6730	5640	4820	4420	4510
17	5740	6160	e6100	e5800	e5500	7340	6290	6620	5130	4600	4280	4350
18	5770	6070	e6300	e6100	e6100	7060	6480	6470	5750	4640	3980	4170
19	5890	6040	e6200	e7100	e6700	6940	6520	6590	6800	4780	3990	4440
20	5830	6130	e6200	e7200	e6700	6970	6500	6570	7310	5140	4190	4580
21	5830	5950	e5900	e7500	e6600	6940	6370	6540	7150	4650	4030	4460
22	5900	5700	e6300	e7200	e6800	6810	6400	6610	7210	4660	4390	4440
23	5980	5750	e6400	e6700	e6800	6680	6600	6570	7490	4720	4340	4560
24	5920	5740	e6600	e6900	e7100	6760	6590	6350	7090	4430	4470	4360
25	5910	5830	e6500	e6800	e7600	6720	6780	6430	6560	4500	4490	4400
26	5980	5740	e6500	e6700	e7900	6810	6850	6660	6750	4560	4520	4520
27	6040	5630	e6400	e6500	e7100	6490	6950	6580	6850	4550	4390	4540
28	6140	6040	6390	e6300	e6600	6630	6970	6550	6350	4440	4240	4540
29	6230	5990	6390	e6400	e6500	6610	6820	6180	6110	4580	4370	4490
30	6360	6060	6380	e6600	---	6630	6720	6290	5410	4540	4150	4390
31	6130	---	6440	e6300	---	6740	---	6270	---	4340	4260	---
TOTAL	187220	178190	191880	200400	190900	210970	194860	211530	200490	156920	132890	134580
MEAN	6039	5940	6190	6465	6583	6805	6495	6824	6683	5062	4287	4486
MAX	6360	6190	6600	7500	7900	7650	6970	8200	7820	7020	4530	6170
MIN	5740	5630	5800	5600	5400	6200	6010	6180	5130	4340	3980	4140
AC-FT	371400	353400	380600	397500	378700	418500	386500	419600	397700	311300	263600	266900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2000, BY WATER YEAR (WY)

MEAN	6611	6823	6700	6685	7221	8664	9719	14560	19820	10900	6653	6272
MAX	16480	13920	13180	10840	11380	19700	19240	30510	55270	33590	12620	12310
(WY)	1966	1966	1960	1979	1965	1978	1952	1975	1948	1975	1975	1965
MIN	3270	3581	3121	2805	2511	4884	4338	4860	4939	3956	2075	2501
(WY)	1935	1938	1937	1937	1936	1937	1961	1992	1977	1940	1934	1934

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1934 - 2000	
ANNUAL TOTAL	2945270		2190830			
ANNUAL MEAN	8069		5986		9246	
HIGHEST ANNUAL MEAN					15280	1975
LOWEST ANNUAL MEAN					4438	1937
HIGHEST DAILY MEAN	21000	Jun 8	8200	May 7	136000	Jun 6 1953
LOWEST DAILY MEAN	4500	Jan 27	3980	Aug 18	1220	Dec 13 1936
ANNUAL SEVEN-DAY MINIMUM	5720	Jul 29	4170	Aug 17	1620	Dec 9 1936
INSTANTANEOUS PEAK FLOW			a8460	May 7	c137000	Jun 3 1953
INSTANTANEOUS PEAK STAGE			b22.30	Feb 25	b34.17	Mar 22 1978
INSTANTANEOUS LOW FLOW					1120	Jul 8 1936
ANNUAL RUNOFF (AC-FT)	5842000		4346000		6699000	
10 PERCENT EXCEEDS	11200		6980		16300	
50 PERCENT EXCEEDS	7400		6180		7430	
90 PERCENT EXCEEDS	5890		4400		4500	

a--Gage height, 14.98 ft.
b--Backwater from ice jam.
c--Gage height, 22.20 ft. from graph based on gage readings, site and datum then in use.
e--Estimated.

MISSOURI RIVER MAIN STEM

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 November).

REMARKS.--Unpublished records of instantaneous water temperature and conductance are available in files of District office. Prior to July 1972, sampling and record computations were under supervision of Corps of Engineers, U.S. Army. Missing daily sediment data in March due to ice cover.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1979-81): Maximum daily, 1,240 microsiemens, June 20, 1979; minimum daily, 410 microsiemens, 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: Maximum daily mean, 19,500 mg/L, July 10; minimum daily mean, 30 mg/L, Nov. 26-27.
SEDIMENT LOAD: Maximum daily, 318,000 tons, July 9; minimum daily, 456 tons, Nov. 27.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)
MAY 2000									
18...	0930	6380	--	21.0	17.0	3	7	21	25
JUN									
29...	1030	6110	400	31.0	25.5	16	29	43	90
AUG									
03...	1500	4350	440	--	26.5	1	4	10	34

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 2000								
18...	29	36	48	78	100	95	1640	64
JUN								
29...	97	99	100	--	--	80	1320	76
AUG								
03...	51	69	82	91	100	161	1890	75

MISSOURI RIVER MAIN STEM

06115200 MISSOURI RIVER NEAR LANDUSKY, MT--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	79	1290	59	973							---	---
2	72	1140	53	836							---	---
3	78	1340	49	754							---	---
4	69	1140	55	861							---	---
5	69	1180	64	1040							---	---
6	70	1190	54	835							---	---
7	70	1160	50	784							---	---
8	70	1170	47	747							---	---
9	70	1180	45	716							---	---
10	70	1200	44	708							---	---
11	70	1160	44	706							---	---
12	70	1120	45	748							---	---
13	70	1110	45	736							---	---
14	70	1130	44	722							---	---
15	70	1110	42	702							---	---
16	70	1110	40	665							---	---
17	70	1080	37	615							152	3010
18	70	1090	36	590							130	2480
19	70	1110	38	620							92	1720
20	70	1100	40	662							84	1580
21	70	1100	39	627							90	1690
22	70	1120	35	539							86	1580
23	70	1130	34	528							85	1530
24	70	1120	33	511							72	1310
25	70	1120	32	504							58	1050
26	70	1130	30	465							69	1270
27	70	1140	30	456							72	1260
28	72	1190	32	522							68	1220
29	76	1280	33	534							71	1270
30	73	1250	33	540							60	1070
31	67	1110	---	---							59	1070
TOTAL	---	35800	---	20246							---	---

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	66	1220	64	1140	160	3020	58	864	160	1840	76	878
2	59	1070	70	1250	200	4020	65	941	150	1650	81	938
3	58	1060	80	1450	186	3870	61	870	150	1740	101	1240
4	79	1390	84	1540	268	5660	320	4800	149	1680	89	1100
5	55	946	87	1580	148	2880	188	2670	143	1610	88	1120
6	73	1320	98	1960	98	1820	5800	110000	142	1610	8600	143000
7	56	909	132	2920	79	1340	16200	262000	140	1580	13200	163000
8	57	966	148	3260	86	1540	8500	121000	137	1660	2600	31200
9	45	731	126	2650	94	1560	19000	318000	118	1370	410	4970
10	47	775	129	2660	122	2240	19500	315000	111	1280	292	3260
11	43	711	760	15200	105	1920	7000	106000	111	1310	293	3450
12	46	771	2000	37400	99	1860	548	7580	109	1240	260	3050
13	49	822	1200	21800	109	2080	330	4500	122	1460	196	2290
14	39	674	540	10000	91	1620	503	6740	140	1710	169	1920
15	40	691	130	2440	84	1270	297	3870	160	1910	185	2190
16	40	681	107	1940	72	1100	314	4090	174	2080	196	2390
17	48	815	98	1750	66	914	354	4400	140	1620	190	2230
18	52	910	93	1620	88	1370	262	3280	108	1160	176	1980
19	54	951	93	1650	120	2200	500	6450	95	1020	314	3760
20	57	1000	97	1720	144	2840	13400	186000	105	1190	430	5320
21	57	980	96	1700	138	2660	1600	20100	102	1110	324	3900
22	58	1000	112	2000	136	2650	454	5710	120	1420	335	4020
23	82	1460	107	1900	145	2930	366	4660	114	1340	392	4830
24	79	1410	94	1610	120	2300	308	3680	108	1300	332	3910
25	81	1480	92	1600	97	1720	298	3620	112	1360	265	3150
26	98	1810	131	2360	96	1750	296	3640	119	1450	203	2480
27	93	1750	95	1690	97	1790	295	3620	103	1220	160	1960
28	88	1660	87	1540	82	1410	284	3400	91	1040	150	1840
29	112	2060	74	1230	78	1290	290	3590	93	1100	150	1820
30	100	1810	68	1150	70	1020	261	3200	79	885	140	1660
31	---	---	78	1320	---	---	170	1990	76	874	---	---
TOTAL	---	33833	---	134030	---	64644	---	1526265	---	43819	---	408856

MISSOURI RIVER MAIN STEM

06115270 ARMELLS CREEK NEAR LANDUSKY, MT

LOCATION.--Lat 47°36'38", long 108°41'41", in NE$^1/_4$NW$^1/_4$SW$^1/_4$ 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 to September 2000.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,280 ft above sea level, from topographic map.

REMARKS.--Records fair 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					e.00	e10	.82	.84	.05	.00	.00	.00
2					e.00	e10	.86	.88	.02	.00	.00	.00
3					e.00	e10	1.3	.88	.01	.00	.00	.00
4					e.00	e9.0	1.1	.67	.00	.00	.00	.00
5					e.00	8.6	.93	.54	.00	.00	.00	.00
6					e.00	8.0	.80	.41	.00	.00	.00	.00
7					e.00	5.6	.77	.30	.00	.00	.00	.00
8					e.00	2.1	.58	.23	.00	10	.00	.00
9					e.00	3.5	.41	.20	.00	30	.00	.00
10					e.00	3.4	.25	.37	.00	11	.00	.00
11					e.00	1.3	.16	.77	.00	10	.00	.00
12					e.00	1.3	.12	1.2	.00	3.3	.00	.00
13					e.00	2.1	.11	1.0	.00	1.4	.00	.00
14					e.00	2.3	.39	1.1	.00	.34	.00	.00
15					e.00	1.8	.86	.95	.00	.02	.00	.00
16					e.00	1.6	.98	.82	.00	.00	.00	.00
17					.00	1.5	1.7	.55	.00	.00	.00	.00
18					.00	2.1	1.4	.39	.00	.00	.00	.00
19					.00	1.9	1.0	.29	.00	2.7	.00	.00
20					.00	1.2	.80	.10	.00	16	.00	.00
21					.00	1.1	.59	.05	.00	.74	.00	.00
22					.00	.74	.46	.03	.00	.05	.00	.00
23					.00	.69	.69	.02	.00	.00	.00	.00
24					.52	.80	1.0	.00	.00	.00	.00	.00
25					5.6	.98	.84	.00	.00	.00	.00	.00
26					e20	.80	.54	.01	.00	.00	.00	.00
27					e15	.66	.34	.01	.00	.00	.00	.00
28					e15	.57	.21	.00	.00	.00	.00	.00
29					e10	.76	.32	.00	.00	.00	.00	.00
30						1.0	.53	.00	.00	.00	.00	.00
31					---	.99	---	.02	---	.00	.00	---
TOTAL					66.12	96.39	20.86	12.63	0.08	85.55	0.00	0.00
MEAN					2.28	3.11	.70	.41	.003	2.76	.000	.000
MAX					20	10	1.7	1.2	.05	30	.00	.00
MIN					.00	.57	.11	.00	.00	.00	.00	.00
AC-FT					131	191	41	25	.2	170	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2000, BY WATER YEAR (WY)

MEAN	2.28	3.11	.70	.41	.003	2.76	.000	.000
MAX	2.28	3.11	.70	.41	.003	2.76	.000	.000
(WY)	2000	2000	2000	2000	2000	2000	2000	2000
MIN	2.28	3.11	.70	.41	.003	2.76	.000	.000
(WY)	2000	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS FOR 2000 WATER YEAR

HIGHEST DAILY MEAN	30	Jul	9
LOWEST DAILY MEAN	.00	Feb	1
INSTANTANEOUS PEAK FLOW	302	Jul	9
INSTANTANEOUS PEAK STAGE	5.29	Jul	9

e--Estimated.

MISSOURI RIVER MAIN STEM

06115300 DUVAL CREEK NEAR LANDUSKY, MT

LOCATION.--Lat 47°45'17", long 108°42'23", in $SW^1/_4NW^1/_4$ $SE^1/_4$ 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 to September 2000. May 1963 to January 2000 (peak flows only).
GAGE.--Water-stage recorder. Elevation of gage is 2,900 ft, from topographic map. Prior to Jan. 19, 2000, peak flow gage only at present site and datum.
REMARKS.--Records good 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, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					e.00	e.00	.00	.00	.00	.00	.00	.00
2					e.00	e.00	.00	.00	.00	.00	.00	.00
3					e.00	e.00	.00	.00	.00	.00	.00	.00
4					e.00	e.00	.00	.00	.00	.00	.00	.00
5					e.00	.00	.00	.00	.00	.00	.00	.00
6					e.00	.00	.00	.00	.00	.00	.00	.00
7					e.00	.00	.00	.00	.00	.00	.00	.00
8					e.00	.00	.00	.00	.00	.00	.00	.00
9					e.00	.00	.00	.00	.00	.00	.00	.00
10					e.00	.00	.00	.00	.00	.00	.00	.00
11					e.00	.00	.00	.00	.00	.00	.00	.00
12					e.00	.00	.00	.00	.00	.00	.00	.00
13					e.00	.00	.00	.00	.00	.00	.00	.00
14					e.00	.00	.00	.00	.00	.00	.00	.00
15					e.00	.00	.00	.00	.00	.00	.00	.00
16					e.00	.00	.00	.00	.00	.00	.00	.00
17					e.00	.00	.00	.00	.00	.00	.00	.00
18					e.00	.00	.00	.00	.00	.00	.00	.00
19					e.00	.00	.00	.00	.00	.00	.00	.00
20					e.00	.00	.00	.00	.00	.00	.00	.00
21					e.00	.00	.00	.00	.00	.00	.00	.00
22					e.50	.00	.00	.00	.00	.00	.00	.00
23					e1.0	.00	.00	.00	.00	.00	.00	.00
24					e.50	.00	.00	.00	.00	.00	.00	.00
25					e.00	.00	.00	.00	.00	.00	.00	.00
26					e.00	.00	.00	.00	.00	.00	.00	.00
27					e.00	.00	.00	.00	.00	.00	.00	.00
28					e.00	.00	.00	.00	.00	.00	.00	.00
29					e.00	.00	.00	.00	.00	.00	.00	.00
30						.00	.00	.00	.00	.00	.00	.00
31					---	.00	---	.00	---	.00	.00	---
TOTAL					2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN					.069	.000	.000	.000	.000	.000	.000	.000
MAX					1.0	.00	.00	.00	.00	.00	.00	.00
MIN					.00	.00	.00	.00	.00	.00	.00	.00
AC-FT					4.0	.00	.00	.00	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEAR 2000*

MEAN	.069	.000	.000	.000	.000	.000	.000	.000
MAX	.069	.000	.000	.000	.000	.000	.000	.000
(WY)	2000	2000	2000	2000	2000	2000	2000	2000
MIN	.069	.000	.000	.000	.000	.000	.000	.000
(WY)	2000	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 2000 WATER YEAR		WATER YEARS 1963 - 2000*	
HIGHEST DAILY MEAN	1.0	Feb 23		
LOWEST DAILY MEAN	.00	Feb 1		
INSTANTANEOUS PEAK FLOW	a		660	Jun 29 1991
INSTANTANEOUS PEAK STAGE	a		13.83	Jun 29 1991

*--Peak flow station May 1963 to January 2000.
a--Not determined.
e--Estimated.

MISSOURI RIVER MAIN STEM

06115350 ROCK CREEK NEAR LANDUSKY, MT

LOCATION.--Lat 47°42'17", long 108°32'49", in NW$^1/_4$NW$^1/_4$ NW$^1/_4$ 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 2000.

GAGE.--Water-stage recorder. Elevation of gage is 2,670 ft, from topographic map.

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, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		e3.0	e2.0	e2.0	e2.0	e3.0	3.6	e2.0	4.0	.00	1.2	.00
2		e3.0	e2.0	e1.8	e2.0	e3.5	3.8	e2.0	e3.5	5.7	1.0	.00
3		e3.0	e2.0	e1.6	e2.0	e3.5	3.9	e2.0	e3.0	4.8	.84	.00
4		e3.0	e2.0	e1.8	e2.0	e3.5	3.9	e2.0	e3.0	1.4	1.2	.00
5		e3.0	e2.0	e2.0	e2.0	e3.5	3.7	e2.0	e2.0	2.9	.73	.00
6		e3.0	e2.0	e2.0	e2.0	e3.0	3.6	e2.0	e1.5	40	.60	.00
7		e3.0	e2.0	e2.0	e2.0	e2.5	3.7	e2.0	e1.0	4.3	.47	.00
8		e3.0	e2.0	e2.0	e2.5	e2.5	3.7	e2.0	e1.0	115	.33	.00
9		e3.0	e2.0	e2.0	e3.0	e2.5	3.7	e2.0	e1.0	97	.00	.00
10		3.1	e2.0	e2.0	e2.5	e2.5	3.6	e2.0	e1.0	31	.00	.00
11		3.1	e2.0	e2.0	e1.8	e2.5	3.6	e2.0	e.80	13	.00	.00
12		3.1	e2.0	e2.0	e1.8	e2.5	3.6	e3.0	e.80	11	.00	.00
13		3.0	e2.0	e2.0	e1.8	e2.5	3.8	e2.5	e.75	9.5	.00	.00
14		3.0	e2.0	e2.0	e1.8	e2.5	6.5	e2.0	.75	7.7	.00	.00
15		2.9	e2.0	e2.0	e1.8	e2.5	3.8	e2.0	.64	6.3	.00	.00
16		3.0	e2.0	e2.0	e1.8	e3.0	3.7	e2.0	.61	5.6	.00	.00
17		3.0	e2.0	e2.0	e1.8	e3.0	3.5	e2.0	.56	5.4	.00	e.00
18		2.9	e2.0	e2.0	e1.8	e3.0	3.3	e2.0	.07	20	.00	e.00
19		3.1	e2.0	e2.0	e1.8	e3.5	3.1	e2.0	.00	7.0	.00	e.00
20		3.0	e2.0	e2.0	e1.8	e3.5	2.9	e2.0	.00	9.2	.00	e.00
21		2.9	e2.0	e2.0	e2.0	e3.5	2.8	e2.0	.00	5.9	.00	e.00
22		2.8	e2.0	e2.0	e2.0	e3.5	2.8	e2.0	.00	3.4	.00	e.00
23		e2.5	e2.0	e2.0	e2.0	3.9	3.4	e2.0	.00	2.9	.00	e.00
24		e2.5	e2.0	e2.0	e2.5	3.8	3.1	e2.0	.00	2.4	.00	e.00
25		e2.5	e2.0	e2.0	e3.0	3.8	2.9	e2.0	.00	2.0	.00	e.00
26		e2.0	e2.0	e2.0	e3.0	3.7	2.7	e2.0	.00	1.7	.00	e.00
27		e2.0	e2.0	e2.0	e3.0	3.5	2.5	e2.5	.00	1.5	.00	.00
28		e2.0	e2.0	e2.0	e3.0	3.7	2.2	e2.5	.00	1.4	.00	.00
29		e2.0	e2.0	e2.0	e3.0	3.7	e2.0	e2.5	.00	1.4	.00	.00
30		e2.0	e2.0	e2.0		3.8	e2.0	e3.0	.00	1.4	.00	.00
31		---	e2.0	e2.0	---	3.8	---	e3.5	---	1.1	.00	---
TOTAL		83.4	62.0	61.2	63.5	99.2	101.4	67.5	25.98	421.90	6.37	0.00
MEAN		2.78	2.00	1.97	2.19	3.20	3.38	2.18	.87	13.6	.21	.000
MAX		3.1	2.0	2.0	3.0	3.9	6.5	3.5	4.0	115	1.2	.00
MIN		2.0	2.0	1.6	1.8	2.5	2.0	2.0	.00	.00	.00	.00
AC-FT		165	123	121	126	197	201	134	52	837	13	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2000, BY WATER YEAR (WY)

MEAN	2.78	2.00	1.97	2.19	3.20	3.38	2.18	.87	13.6	.21	.000
MAX	2.78	2.00	1.97	2.19	3.20	3.38	2.18	.87	13.6	.21	.000
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
MIN	2.78	2.00	1.97	2.19	3.20	3.38	2.18	.87	13.6	.21	.000
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS FOR 2000 WATER YEAR

HIGHEST DAILY MEAN	115	Jul 8
LOWEST DAILY MEAN	.00	Jun 19
INSTANTANEOUS PEAK FLOW	1660	Jul 8
INSTANTANEOUS PEAK STAGE	6.99	Jul 8

e--Estimated.

06120500 MUSSELSHELL RIVER AT HARLOWTON, MT

LOCATION.--Lat 46°25'48", long 109°50'24", in NE$^1/_4$ sec.28, T.8 N., R.15 E., Wheatland County, Hydrologic Unit 10040201, on left bank 350 ft downstream from bridge on U.S. Highway 191, 1.0 mi southwest of Harlowton, 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. Datum of gage is 4,171.46 ft above sea level (levels by Morrison and Maierle, Inc.). Prior to Dec. 8, 1937, nonrecording gages at site 1.2 mi downstream at different datums. Dec. 8, 1937, to Aug. 26, 1955, nonrecording gage at bridge 300 ft upstream at different datums.
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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	55	e50	e45	e55	e60	40	28	70	47	5.7	3.5
2	66	56	e50	e45	e50	e55	37	23	73	56	5.8	3.6
3	62	56	e50	e50	e50	e52	37	21	65	95	5.3	3.3
4	61	55	e50	e50	e55	53	37	21	51	91	5.5	3.1
5	59	57	e50	e50	e55	52	36	24	51	86	5.8	2.8
6	59	57	e50	e50	e60	53	36	26	54	78	5.3	2.6
7	55	57	e50	e50	e65	53	39	29	45	71	4.5	2.5
8	50	56	e45	e50	e55	53	36	30	38	64	4.2	2.3
9	50	56	e50	e50	e45	51	35	29	46	59	3.7	2.1
10	51	55	e50	e45	e45	48	35	27	56	59	3.1	1.9
11	52	55	e50	e45	e45	48	35	32	51	53	2.8	2.3
12	54	55	e50	e40	e50	46	37	31	52	45	2.8	2.7
13	57	53	e45	e45	e50	45	42	29	55	40	2.6	2.3
14	49	52	e50	e50	e50	44	48	27	61	32	2.5	2.1
15	47	51	e50	e50	e50	44	51	31	71	25	2.7	2.7
16	50	50	e50	e50	e50	43	50	28	73	24	2.7	2.3
17	53	50	e50	e50	e50	42	47	33	75	22	3.2	2.3
18	56	49	e45	e50	e55	41	44	39	74	24	4.0	2.2
19	57	49	e50	e45	e55	41	39	69	72	23	4.6	4.2
20	59	50	e50	e50	e60	41	38	69	76	23	4.4	5.7
21	56	e50	e50	e50	e60	40	31	60	70	21	4.4	7.0
22	45	e50	e55	e50	e65	40	30	53	73	19	4.6	7.4
23	40	e45	e55	e50	e65	40	29	53	78	17	4.0	7.8
24	54	e50	e50	e50	e60	36	34	60	65	14	3.1	7.7
25	58	e50	e50	e50	e65	37	41	63	70	12	2.5	7.7
26	57	e50	e50	e50	e65	36	28	69	72	10	2.5	7.6
27	61	e50	e55	e50	e65	37	21	74	70	9.5	2.3	12
28	65	e50	e50	e50	e70	38	21	77	65	8.6	2.4	14
29	59	e55	e50	e50	e65	40	29	65	61	7.0	2.4	14
30	57	e50	e50	e50	---	42	28	102	53	6.4	2.4	16
31	56	---	e50	e50	---	43	---	85	---	5.7	2.8	---
TOTAL	1718	1574	1550	1510	1630	1394	1091	1407	1886	1147.2	114.6	157.7
MEAN	55.4	52.5	50.0	48.7	56.2	45.0	36.4	45.4	62.9	37.0	3.70	5.26
MAX	66	57	55	50	70	60	51	102	78	95	5.8	16
MIN	40	45	45	40	45	36	21	21	38	5.7	2.3	1.9
AC-FT	3410	3120	3070	3000	3230	2760	2160	2790	3740	2280	227	313

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1907 - 2000, BY WATER YEAR (WY)*

MEAN	75.3	79.2	68.3	59.7	66.5	115	179	414	514	164	77.2	64.5
MAX	226	176	206	250	190	500	632	1957	2467	751	292	290
(WY)	1919	1942	1976	1918	1996	1918	1943	1917	1917	1975	1993	1993
MIN	.000	.000	.000	.000	10.0	20.4	22.1	11.8	27.9	.84	.000	.000
(WY)	1932	1932	1932	1932	1936	1935	1931	1931	1930	1936	1931	1931

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1907 - 2000*	
ANNUAL TOTAL	29606		15179.5			
ANNUAL MEAN	81.1		41.5		159	
HIGHEST ANNUAL MEAN					483	1917
LOWEST ANNUAL MEAN					21.1	1935
HIGHEST DAILY MEAN	559	May 31	102	May 30	6200	Jun 20 1975
LOWEST DAILY MEAN	40	Jan 24	1.9	Sep 10	.00	Aug 4 1910
ANNUAL SEVEN-DAY MINIMUM	46	Jan 21	2.2	Sep 8	.00	Aug 4 1910
INSTANTANEOUS PEAK FLOW			a115	May 30	7270	Jun 20 1975
INSTANTANEOUS PEAK STAGE			b2.07	Feb 26	10.01	Jun 20 1975
INSTANTANEOUS LOW FLOW			c1.8	Sep 10		
ANNUAL RUNOFF (AC-FT)	58720		30110		114900	
10 PERCENT EXCEEDS	120		65		364	
50 PERCENT EXCEEDS	58		50		76	
90 PERCENT EXCEEDS	50		4.0		25	

*--During periods of operation (1908-29, 1931-32, 1935 to current year).
a--Gage height, 1.43 ft.
b--Backwater from ice.
c--Gage height, 0.29 ft.
e--Estimated.

06123030 MUSSELSHELL RIVER ABOVE MUD CREEK, NEAR SHAWMUT, MT

LOCATION.--Lat 46°19'07", long 109°27'35", in NE$^1/_4$SW$^1/_4$SW$^1/_4$ 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).

GAGE.--Water-stage recorder. Elevation of gage is 3,780 ft above sea level, from topographic map.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				4.9	16	23	10	2.7	1.4	1.4		
2				4.9	16	18	11	2.4	1.4	1.4		
3				4.6	15	17	10	2.4	1.5	1.3		
4				4.5	12	14	9.7	2.7	1.4	1.3		
5				4.2	12	11	9.7	2.7	1.2	1.6		
6				4.1	12	10	9.9	3.2	1.2	5.5		
7				10	11	8.7	12	3.5	1.3	9.9		
8				42	11	7.7	16	2.9	1.2	14		
9				47	12	16	15	2.2	1.1	17		
10				47	14	19	17	1.9	1.2	18		
11				49	14	11	20	1.7	1.3	19		
12				50	13	10	18	1.6	1.1	22		
13				52	12	13	17	1.4	1.0	35		
14				57	11	7.7	18	1.3	1.0	43		
15				64	10	7.5	14	1.2	1.0	42		
16				70	11	14	7.0	1.2	1.1	34		
17				70	11	14	9.2	1.2	1.1	21		
18				66	9.8	13	11	1.3	1.0	8.7		
19				60	9.1	15	13	1.3	1.4	5.9		
20				41	8.7	21	9.9	1.2	1.3	4.9		
21				33	12	22	7.8	1.2	1.5	4.3		
22				28	16	25	6.6	1.1	1.9	3.9		
23				24	13	28	5.3	1.0	1.9	3.7		
24				24	8.4	21	4.5	1.1	1.8	3.5		
25				27	8.1	17	4.2	1.1	3.4	3.6		
26				36	5.6	12	4.1	1.1	1.5	3.4		
27				27	4.8	9.0	3.5	1.1	1.5	3.3		
28				21	4.1	9.2	3.5	1.1	1.3	3.3		
29				18	4.2	8.9	3.4	1.1	1.3	3.1		
30				16	9.5	9.7	3.1	1.1	1.2	3.0		
31					15		2.9	1.2		3.0		
TOTAL				1006.2	341.3	432.4	306.3	52.2	41.5	345.0		
MEAN				33.5	11.0	14.4	9.88	1.68	1.38	11.1		
MAX				70	16	28	20	3.5	3.4	43		
MIN				4.1	4.1	7.5	2.9	1.0	1.0	1.3		
AC-FT				2000	677	858	608	104	82	684		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1998 - 2000

MEAN	28.0	60.1	142	86.2	47.8	43.6	38.1
MAX	33.5	109	279	201	97.8	70.8	65.4
(WY)	2000	1999	1998	1998	1998	1998	1999
MIN	22.4	11.0	14.4	9.88	1.68	1.38	11.1
(WY)	1999	2000	2000	2000	2000	2000	2001

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1998 - 2000	
HIGHEST DAILY MEAN	70	Apr 16	661	Jun 22 1998
LOWEST DAILY MEAN	1.0	Aug 23	14	Aug 3 1999
INSTANTANEOUS PEAK FLOW	72	Apr 16	672	Jun 22 1998
INSTANTANEOUS PEAK STAGE	2.68	Apr 16	4.57	Jun 22 1998

MUSSELSHELL RIVER BASIN

06126050 MUSSELSHELL RIVER NEAR LAVINA, MT

LOCATION.--Lat 46°17'34", long 108°53'31", in $SW^1/_4SW^1/_4SE^1/_4$ 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.--March 1992 to current year (seasonal record only).

GAGE.--Water-stage recorder. Elevation of gage is 3,400 ft above sea level, from topographic map.

REMARKS.--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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				14	9.6	137	213	e13	3.0	3.0		
2				11	64	120	217	16	3.2	3.0		
3				10	149	109	215	17	3.4	3.0		
4				9.8	154	96	219	15	3.2	3.0		
5				8.5	163	103	209	13	2.9	3.0		
6				8.7	177	84	191	12	3.0	3.0		
7				8.9	201	66	193	11	3.1	3.0		
8				8.8	210	67	190	9.6	2.9	3.1		
9				8.7	223	85	194	8.5	2.9	3.1		
10				11	226	115	251	8.7	3.0	3.3		
11				11	233	141	223	7.5	3.0	5.2		
12				11	237	144	238	7.1	2.9	6.5		
13				13	242	148	230	7.3	2.8	7.3		
14				22	242	153	223	6.0	2.5	7.6		
15				36	230	150	216	6.3	2.4	9.9		
16				35	209	147	206	5.9	2.3	11		
17				33	221	137	e200	5.6	2.2	10		
18				39	227	137	e180	5.8	1.7	9.3		
19				36	241	136	e200	5.6	2.2	8.0		
20				30	224	137	e180	5.6	2.7	6.4		
21				24	218	137	e160	6.1	2.8	5.6		
22				20	216	133	e120	4.7	3.0	5.0		
23				15	189	138	e90	3.8	3.0	4.5		
24				11	158	150	e80	4.1	2.9	4.4		
25				9.9	154	163	e70	3.1	2.8	4.3		
26				10	180	160	e80	3.1	2.8	4.2		
27				11	173	152	e70	3.1	4.1	4.2		
28				9.6	175	148	e50	3.2	3.0	4.2		
29				11	159	148	e40	3.1	2.9	4.1		
30				9.9	142	157	e30	3.8	2.9	4.3		
31				---	136	---	e20	4.0	---	4.4		
TOTAL				496.8	5782.6	3898	4998	228.6	85.5	160.9		
MEAN				16.6	187	130	161	7.37	2.85	5.19		
MAX				39	242	163	251	17	4.1	11		
MIN				8.5	9.6	66	20	3.1	1.7	3.0		
AC-FT				985	11470	7730	9910	453	170	319		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1992 - 2000

MEAN	138	374	655	388	242	175	111
MAX	466	920	2735	1063	507	525	335
(WY)	1996	1997	1997	1997	1993	1993	1994
MIN	16.6	131	130	122	7.37	2.85	5.19
(WY)	2000	1999	2000	1992	2000	2000	2001

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1992 - 2000	
HIGHEST DAILY MEAN	251	Jul 10	5850	Jun 14 1997
LOWEST DAILY MEAN	1.7	Sep 18	1.7	Sep 18 2000
INSTANTANEOUS PEAK FLOW	368	Jul 10	6220	Jun 14 1997
INSTANTANEOUS PEAK STAGE	3.78	Jul 10	11.13	Jun 14 1997

e--Estimated.

06126500 MUSSELSHELL RIVER NEAR ROUNDUP, MT

LOCATION.--Lat 46°25'41", long 108°34'19", in NW$^1/_4$SE$^1/_4$SE$^1/_4$ 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. Datum of gage is 3,188.15 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Sept. 26, 1949, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharge, 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 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	35	30	e15	e23	e32	16	2.2	125	113	18	2.9
2	64	37	33	e16	e22	e36	16	1.2	109	168	9.9	3.1
3	60	34	32	e17	e21	e36	14	32	92	178	7.7	2.8
4	60	38	e25	e18	e22	37	13	105	76	180	13	3.4
5	65	38	e19	e14	e23	38	12	108	70	186	12	4.0
6	63	39	e18	e14	e24	37	12	124	74	170	8.2	4.3
7	61	41	e17	e15	e25	36	11	143	61	134	5.7	4.0
8	58	39	e17	e16	e23	35	11	171	50	133	4.5	4.2
9	60	40	e18	e17	e21	35	11	172	57	133	3.9	3.7
10	57	41	e19	e19	e19	36	11	184	71	184	4.1	3.2
11	55	41	e20	e18	e19	34	9.4	204	105	129	2.5	4.2
12	55	40	e19	e17	e20	32	9.1	217	118	159	1.8	3.5
13	55	40	e18	e18	e20	32	11	215	124	161	3.7	3.0
14	55	39	e17	e18	e20	31	11	218	134	152	4.8	2.8
15	55	40	e18	e18	e20	30	16	215	134	152	5.1	2.6
16	55	38	e20	e18	e20	28	25	195	124	142	4.2	2.5
17	55	39	e19	e19	e20	27	26	192	121	128	3.0	2.4
18	55	38	e18	e20	e19	26	24	197	106	136	2.8	2.3
19	54	38	e18	e19	e21	25	25	214	102	122	2.8	2.6
20	53	38	e19	e18	e23	24	14	212	102	141	3.1	2.3
21	55	37	e19	e18	e26	23	11	196	96	136	3.4	2.4
22	49	e32	e20	e14	e25	23	8.8	188	106	95	3.9	2.4
23	44	e21	e20	e10	e24	22	6.5	172	105	72	3.6	1.8
24	43	e22	e20	e13	e22	21	5.4	128	119	69	3.3	1.6
25	41	33	e19	e16	e20	20	3.5	115	139	63	2.9	1.5
26	39	40	e20	e20	e22	19	.44	141	140	55	2.6	1.4
27	40	38	e21	e21	e24	19	.51	161	132	50	2.2	1.3
28	42	36	e22	e21	e27	19	.47	156	111	46	1.9	1.2
29	43	34	e20	e22	e30	20	.86	160	98	48	1.7	1.2
30	38	31	e18	e22	---	20	.90	132	88	40	2.4	1.2
31	37	---	e14	e21	---	19	---	131	---	31	3.1	---
TOTAL	1626	1097	627	542	645	872	335.88	4801.4	3089	3706	151.8	79.8
MEAN	52.5	36.6	20.2	17.5	22.2	28.1	11.2	155	103	120	4.90	2.66
MAX	65	41	33	22	30	38	26	218	140	186	18	4.3
MIN	37	21	14	10	19	19	.44	1.2	50	31	1.7	1.2
AC-FT	3230	2180	1240	1080	1280	1730	666	9520	6130	7350	301	158

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2000, BY WATER YEAR (WY)

MEAN	81.6	77.4	70.4	67.4	99.9	204	190	434	695	309	198	133
MAX	335	242	283	222	414	1281	788	1811	4315	1308	563	504
(WY)	1994	1994	1976	1976	1971	1978	1975	1976	1967	1975	1993	1993
MIN	5.06	4.63	6.05	5.87	5.82	19.0	11.2	45.7	48.0	54.6	4.90	2.66
(WY)	1989	1989	1989	1989	1985	1961	2000	1953	1954	1988	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1947 - 2000	
ANNUAL TOTAL	34246		17572.88			
ANNUAL MEAN	93.8		48.0		a214	
HIGHEST ANNUAL MEAN					608	1975
LOWEST ANNUAL MEAN					48.0	2000
HIGHEST DAILY MEAN	591	Jun 1	218	May 14	8180	Jun 8 1967
LOWEST DAILY MEAN	14	Dec 31	.44	Apr 26	.13	Sep 10 1988
ANNUAL SEVEN-DAY MINIMUM	18	Dec 5	.94	Apr 26	.72	Sep 5 1988
INSTANTANEOUS PEAK FLOW			311	Jul 10	b9610	Jun 18 1967
INSTANTANEOUS PEAK STAGE			2.40	Jul 10	c13.73	Mar 9 1979
ANNUAL RUNOFF (AC-FT)	67930		34860		154700	
10 PERCENT EXCEEDS	208		136		452	
50 PERCENT EXCEEDS	60		24		104	
90 PERCENT EXCEEDS	33		3.0		25	

a--Median of yearly mean discharges 192 ft^3/s, 139,100 ac-ft.
b--Gage height, 12.45 ft.
c--Ice jam.
e--Estimated.

MUSSELSHELL RIVER BASIN

06127020 WILLOW CREEK ABOVE LMGA RESERVOIR, NEAR ROUNDUP, MT

LOCATION.--Lat 46°36'52", long 108°41'40", in $NW^1/_4NW^1/_4SW^1/_4$ sec. 27, T.10 N., R.24 E., Musselshell County, Hydrologic Unit 10040202, on right bank, 0.8 mi upstream of Lake Mason Grazing Association Reservoir, and 12 miles northwest of Roundup.

DRAINAGE AREA.--124 mi^2.

PERIOD OF RECORD.--September 1995 to current year (seasonal records only).

GAGE.--Water-stage recorder. Datum of gage is 3,660 ft above sea level, from topographic map.

REMARKS.--Seasonal records fair except those for estimated daily discharges, which are poor. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				.00	.00	.00	.00	.00	.00	.00		
2				.00	.00	.00	.02	.00	.00	.00		
3				.00	.00	.00	.01	.00	.00	.00		
4				.00	.00	.00	.00	.00	.00	.00		
5				.00	.00	.00	8.5	.00	.00	.00		
6				.00	.00	.00	4.2	.00	.00	.00		
7				.00	.00	.00	1.2	.00	.00	.00		
8				.00	.00	.00	.45	.00	.00	.00		
9				.00	.00	.00	.13	.00	.00	.00		
10				.00	.00	.00	.03	.00	.00	.00		
11				.00	.00	.00	.07	.00	.00	.00		
12				.00	.00	.00	.00	.00	.00	.00		
13				.00	.00	.00	.00	.00	.00	.00		
14				.00	.00	.00	.00	.00	.00	.00		
15				.00	.00	.00	.00	.00	.00	.00		
16				.00	.00	.00	.00	.00	.00	.00		
17				.00	.00	.00	.00	.00	.00	.00		
18				.00	.00	.00	.00	.00	.00	.00		
19				.00	.00	.00	.00	.00	.00	.00		
20				.00	.00	.00	.00	.00	.00	.00		
21				.00	.00	.00	.00	.00	.00	.00		
22				.00	.00	.00	.00	.00	.00	.00		
23				.00	.00	.00	.00	.00	.00	.00		
24				.00	.00	.00	.00	.00	.00	.00		
25				.00	.00	.00	.00	.00	.00	.00		
26				.00	.00	.00	.00	.00	.00	.00		
27				.00	.00	.00	.00	.00	.00	.00		
28				.00	.00	.00	.00	.00	.00	.00		
29				.00	.00	.00	.00	.00	.00	.00		
30				.00	.00	.00	.00	.00	.00	.00		
31				---	.00	---	.00	.00	---	.00		
TOTAL				0.00	0.00	0.00	14.61	0.00	0.00	0.00		
MEAN				.000	.000	.000	.47	.000	.000	.000		
MAX				.00	.00	.00	8.5	.00	.00	.00		
MIN				.00	.00	.00	.00	.00	.00	.00		
AC-FT				.00	.00	.00	29	.00	.00	.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1995 - 2000

MEAN	1.43	1.31	3.81	1.53	.27	.071	.56
MAX	3.33	4.25	13.1	6.04	1.36	.20	1.82
(WY)	1996	1996	1997	1997	1997	1996	1998
MIN	.000	.000	.000	.000	.000	.000	.000
(WY)	2000	2000	2000	1999	1998	1998	1999

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1995 - 2000	
HIGHEST DAILY MEAN	8.5	Jul 5	150	Jun 6 1997
LOWEST DAILY MEAN	.00	Apr 1	a.00	Aug 7 1996
INSTANTANEOUS PEAK FLOW	15.0	Jul 5	b607	Jun 6 1997
INSTANTANEOUS PEAK STAGE	2.84	Jul 5	5.84	Jun 6 1997

a--No flow many days most years.
b--From rating curve extended above 3.0 ft based on 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", in $SW^1/_4SE^1/_4NE^1/_4$ sec. 10, T.9 N., R.24 E., Musselshell County, Hydrologic Unit 10040202, on right bank, 12 miles northwest of Roundup.

DRAINAGE AREA.--141 mi^2.

PERIOD OF RECORD.--September 1995 to current year (seasonal records only).

GAGE.--Water-stage recorder. Datum of gage is 3,610 ft above sea level, from topographic map.

REMARKS.--Seasonal records good. Regulation by Lake Mason Grazing Association Reservoir upstream from the gage. Numerous diversions upstream of 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				.00	.00	.00	.00	.00	.00	.00		
2				.00	.00	.00	.00	.00	.00	.00		
3				.00	.00	.00	.00	.00	.00	.00		
4				.00	.00	.00	.00	.00	.00	.00		
5				.00	.00	.00	.00	.00	.00	.00		
6				.00	.00	.00	.00	.00	.00	.00		
7				.00	.00	.00	.00	.00	.00	.00		
8				.00	.00	.00	.00	.00	.00	.00		
9				.00	.00	.00	.00	.00	.00	.00		
10				.00	.00	.00	.00	.00	.00	.00		
11				.00	.00	.00	.00	.00	.00	.00		
12				.00	.00	.00	.00	.00	.00	.00		
13				.00	.00	.00	.00	.00	.00	.00		
14				.00	.00	.00	.00	.00	.00	.00		
15				.00	.00	.00	.00	.00	.00	.00		
16				.00	.00	.00	.00	.00	.00	.00		
17				.00	.00	.00	.00	.00	.00	.00		
18				.00	.00	.00	.00	.00	.00	.00		
19				.00	.00	.00	.00	.00	.00	.00		
20				.00	.00	.00	.00	.00	.00	.00		
21				.00	.00	.00	.00	.00	.00	.00		
22				.00	.00	.00	.00	.00	.00	.00		
23				.00	.00	.00	.00	.00	.00	.00		
24				.00	.00	.00	.00	.00	.00	.00		
25				.00	.00	.00	.00	.00	.00	.00		
26				.00	.00	.00	.00	.00	.00	.00		
27				.00	.00	.00	.00	.00	.00	.00		
28				.00	.00	.00	.00	.00	.00	.00		
29				.00	.00	.00	.00	.00	.00	.00		
30				.00	.00	.00	.00	.00	.00	.00		
31				---	.00	---	.00	.00	---	.00		
TOTAL				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
MEAN				.000	.000	.000	.000	.000	.000	.000		
MAX				.00	.00	.00	.00	.00	.00	.00		
MIN				.00	.00	.00	.00	.00	.00	.00		
AC-FT				.00	.00	.00	.00	.00	.00	.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1995 - 2000

MEAN	.82	.72	2.67	.41	.095	.000	.13
MAX	2.03	2.95	9.55	1.44	.48	.000	.64
(WY)	1996	1996	1997	1997	1997	1995	1998
MIN	.000	.000	.000	.000	.000	.000	.000
(WY)	1999	1998	1998	1998	1996	1995	1996

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1995 - 2000	
HIGHEST DAILY MEAN	a.00	Apr 1	33	Jun 7 1997
LOWEST DAILY MEAN	a.00	Apr 1	.00	Aug 26 1995
INSTANTANEOUS PEAK FLOW			39	Jun 7 1997
INSTANTANEOUS PEAK STAGE			2.78	Jun 7 1997

a--No flow on all days.

MUSSELSHELL RIVER BASIN

06127500 MUSSELSHELL RIVER AT MUSSELSHELL, MT

LOCATION.--Lat 46°31'23", long 108°06'30", in $SE^1/_4SW^1/_4SW^1/_4$ 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. Datum of gage is 2,984.72 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Oct. 8, 1949, nonrecording gage at site 1 mi downstream at different datums.

REMARKS.--Records good. Some regulation by Bair (station number 06116500), Martinsdale (station number 06119000), and Deadman's 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				23	4.8	134	44	31	4.1	1.1		
2				22	5.6	129	50	28	5.1	1.6		
3				20	5.2	121	87	24	5.2	1.4		
4				20	4.5	99	96	16	4.8	1.4		
5				18	43	78	106	11	4.4	1.1		
6				18	36	65	114	11	5.4	1.1		
7				17	54	64	96	10	6.5	1.1		
8				17	66	54	69	10	6.5	1.3		
9				15	71	45	70	10	5.6	1.4		
10				14	78	44	78	9.1	3.9	2.0		
11				14	96	58	109	7.2	3.8	2.1		
12				14	121	86	84	6.3	3.8	2.2		
13				15	129	101	106	5.9	3.7	2.8		
14				15	131	102	105	7.5	3.2	3.2		
15				16	143	112	86	8.3	2.4	4.2		
16				16	151	111	83	7.6	2.4	13		
17				22	131	101	90	7.8	2.4	13		
18				28	133	101	90	8.1	2.4	19		
19				21	142	97	102	8.7	3.2	20		
20				11	156	103	106	7.7	2.5	22		
21				10	147	98	114	7.2	2.1	19		
22				4.5	138	77	103	7.2	2.3	16		
23				2.3	111	69	75	7.2	2.1	12		
24				2.1	94	57	62	7.1	2.1	11		
25				1.8	78	74	60	6.9	1.8	7.4		
26				1.6	91	94	60	6.4	1.3	7.1		
27				3.7	120	98	56	6.1	1.1	6.4		
28				3.7	129	87	54	5.6	1.0	5.1		
29				4.6	132	64	47	5.3	.86	4.7		
30				4.8	156	51	44	4.9	.67	4.2		
31					130		36	4.0		4.4		
TOTAL				395.1	3027.1	2574	2482	303.1	96.63	212.3		
MEAN				13.2	97.6	85.8	80.1	9.78	3.22	6.85		
MAX				28	156	134	114	31	6.5	22		
MIN				1.6	4.5	44	36	4.0	.67	1.1		
AC-FT				784	6000	5110	4920	601	192	421		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2000, BY WATER YEAR (WY)*

MEAN	71.0	108	273	198	368	597	246	145	112	79.4	76.5	77.5
MAX	222	460	1356	859	1670	4223	1376	534	477	328	236	269
(WY)	1976	1971	1979	1975	1976	1967	1975	1993	1993	1994	1976	1976
MIN	.000	.041	12.7	10.6	.36	.49	.000	.000	.000	.000	.000	.000
(WY)	1932	1932	1932	1931	1931	1931	1930	1931	1931	1932	1932	1932

SUMMARY STATISTICS	FOR 2000 SEASON		WATER YEARS 1929 - 1983**		SEASONS 1984 - 2000***	
ANNUAL MEAN			215			
HIGHEST ANNUAL MEAN			609	1975		
LOWEST ANNUAL MEAN			34.1	1961		
HIGHEST DAILY MEAN	156	May 20	8600	Jun 19 1967	6270	Jun 16 1997
LOWEST DAILY MEAN	.67	Sep 30	.00	Sep 1 1929	.67	Sep 30 2000
ANNUAL SEVEN-DAY MINIMUM			.00	Sep 8 1929		
INSTANTANEOUS PEAK FLOW	a162	May 30	b9850	Jun 19 1967	6420	Jun 16 1997
INSTANTANEOUS PEAK STAGE	3.37	May 30	c12.96	Mar 19 1979	11.25	Jun 16 1997
INSTANTANEOUS LOW FLOW	.46	Sep 30				
ANNUAL RUNOFF (AC-FT)			155800			
10 PERCENT EXCEEDS			458			
50 PERCENT EXCEEDS			98			
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--Also occurred July 11.
b--Gage height, 11.57 ft.
c--Ice jam.

MUSSELSHELL RIVER BASIN

06130500 MUSSELSHELL RIVER AT MOSBY, MT

LOCATION.--Lat 46°59'41", long 107°53'18", in $SW^1/_4NW^1/_4NW^1/_4$ 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. Datum of gage is 2,493.23 ft, above sea level. Dec. 6, 1962 to Mar. 14, 1966, water-stage recorder at site 900 ft downstream at different datum. Mar. 15, 1966 to Dec. 11, 1973, water-stage recorder and nonrecording gages at site 400 ft downstream at same datum. Dec. 12, 1973 to Oct. 1, 1981, nonrecording gage at site 400 ft downstream at same datum. Oct. 1, 1981 to July 25, 1995, water-stage recorder at site 400 ft upstream of bridge at datum 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	54	e40	e15	e25	e80	32	5.6	63	37	1.6	.00
2	60	54	e40	e20	e25	e90	37	2.4	59	30	.94	.00
3	63	55	e40	e25	e25	e75	37	.58	55	37	.40	.00
4	69	52	e40	e25	e30	71	36	.00	52	54	.00	.00
5	71	53	e35	e25	e30	68	26	.00	40	e55	.00	.00
6	68	52	e30	e25	e35	70	26	.00	31	e55	5.8	.00
7	67	53	e25	e25	e35	70	25	.00	11	e55	22	.00
8	69	54	e25	e20	e30	64	21	.00	6.7	e40	4.1	.00
9	70	54	e30	e20	e25	63	19	7.9	5.9	e30	.02	.00
10	70	55	e30	e20	e25	60	16	13	2.4	e35	.00	.00
11	71	54	e30	e20	e25	57	19	4.9	.89	e15	.00	.00
12	70	55	e25	e20	e25	56	19	.17	1.8	e5.0	.00	.00
13	68	57	e25	e20	e25	57	31	5.8	4.3	e1.0	.03	.00
14	64	57	e30	e25	e25	55	33	8.0	7.1	e.00	.00	.00
15	64	56	e30	e25	e25	51	34	.32	8.0	e.00	.00	.00
16	65	56	e30	e25	e25	50	33	4.4	30	e.00	.00	.00
17	69	59	e25	e20	e25	47	27	21	33	e.00	.00	.00
18	69	59	e20	e20	e25	47	24	30	27	e.00	.00	.00
19	70	58	e25	e25	e30	46	25	24	37	e2.5	.00	.00
20	69	57	e25	e25	e35	45	35	25	30	e3.0	.00	.00
21	67	55	e25	e25	e40	42	37	37	30	e3.0	.00	.00
22	67	e55	e25	e25	e45	41	37	45	32	e2.0	.00	.00
23	67	e40	e25	e25	e40	38	31	25	43	e1.5	.00	.00
24	64	e45	e25	e30	e40	28	22	11	42	e1.0	.00	.00
25	60	e40	e25	e30	e45	25	15	4.4	31	e.60	.00	.00
26	61	e35	e25	e30	e50	20	12	7.5	22	e3.0	.00	.00
27	57	e35	e25	e25	e55	20	4.2	4.5	18	e3.0	.00	.00
28	57	e40	e20	e25	e60	18	19	3.4	23	2.3	.00	.00
29	55	e40	e20	e25	e75	19	25	12	16	3.6	.00	.00
30	54	e40	e20	e25	---	19	12	31	16	7.2	.00	.00
31	54	---	e20	e30	---	20	---	54	---	4.7	.00	---
TOTAL	2007	1529	855	740	1000	1512	769.2	387.87	778.09	486.40	34.89	0.00
MEAN	64.7	51.0	27.6	23.9	34.5	48.8	25.6	12.5	25.9	15.7	1.13	.000
MAX	71	59	40	30	75	90	37	54	63	55	22	.00
MIN	54	35	20	15	25	18	4.2	.00	.89	.00	.00	.00
AC-FT	3980	3030	1700	1470	1980	3000	1530	769	1540	965	69	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2000, BY WATER YEAR (WY)*

MEAN	83.0	82.3	74.1	79.8	180	472	295	543	905	332	117	118
MAX	478	337	278	376	1858	4658	1917	3772	4967	2153	870	787
(WY)	1994	1994	1979	1997	1971	1978	1979	1975	1967	1975	1993	1986
MIN	.000	.000	.000	.000	.000	.000	3.14	.000	1.91	.000	.000	.000
(WY)	1932	1932	1931	1932	1932	1932	1931	1931	1935	1961	1934	1934

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1931 - 2000*	
ANNUAL TOTAL	28876.38		10099.45			
ANNUAL MEAN	79.1		27.6		b276	
HIGHEST ANNUAL MEAN					1089	1978
LOWEST ANNUAL MEAN					16.4	1961
HIGHEST DAILY MEAN	334	Jun 4	90	Mar 2	15700	Jun 18 1944
LOWEST DAILY MEAN	.00	Aug 5	a.00	May 4	.00	Oct 1 1930
ANNUAL SEVEN-DAY MINIMUM	2.2	Aug 2	.00	Aug 14	.00	Oct 1 1930
INSTANTANEOUS PEAK FLOW			unknown		c18000	Jun 18 1944
INSTANTANEOUS PEAK STAGE			unknown		d15.10	Mar 12 1979
ANNUAL RUNOFF (AC-FT)	57280		20030		199700	
10 PERCENT EXCEEDS	152		60		600	
50 PERCENT EXCEEDS	69		25		87	
90 PERCENT EXCEEDS	25		.00		.71	

*--During period of operation (1931 - 1932, 1935 to current year).
a--No flow occurred on part or all of many days.
b--Median of yearly mean discharge, 212 ft^3/s, 153,600 acre-ft/year.
c--Gage height, 14.43 ft, from rating extension above 10,000 ft^3/s.
d--From floodmark, backwater from ice jam.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1981.
WATER TEMPERATURE: October 1974 to September 1979, May to September 2000.
SUSPENDED-SEDIMENT DISCHARGE: October 1982 to September 1991, October 1991 to 1995 (seasonal records only).
INSTRUMENTATION.--Temperature recorder installed March 20, 2000.
REMARKS.--Water temperature data missing from April 1 to June 15 due to equipment problems.Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1975-81): Maximum daily, 4,900 microsiemens per centimeter (µS/cm) at 25°C, Aug. 14, 1977; minimum daily, 678 microsiemens per centimeter (µS/cm) at 25°C, Mar. 23, 1978.
WATER TEMPERATURE (water years 1975-79): Maximum daily, 33.0°C, July 13, 2000; 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.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of operation (June 16 to Sept. 30), maximum daily, 33.0°C, July 13; minimum daily, 8.0°C on several days in September.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
NOV 1999											
10...	1115	54	8.1	2420	7.0	6.5	<.001	.31	.14	<.001	.012
JUN 2000											
05...	1110	44	7.9	1650	26.0	19.0	<.001	<.005	.60	<.001	.060
27...	1050	14	8.4	2780	23.0	21.0	<.001	<.005	.65	.006	.033
JUL											
27...	1040	3.3	8.4	2430	23.5	25.0	.001	<.005	.93	.002	.102

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999											
10...	1115	340	56	49	2.4	3	150	126	10	.2	1.5
JUN 2000											
27...	1050	690	100	110	5.6	6	390	244	32	.3	1.9

MUSSELSHELL RIVER BASIN

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
10...	470	816	1.11	119	<3	<.1	<1	1	<1	E2	<31
JUN 2000											
27...	1300	2030	2.76	76.8	<3	<.1	<1	4	<1	3	7

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)
OCT 1999										
06...	1025	67	1950	7.0	8.5	73	13	98	1	2
NOV										
10...	1115	54	2420	7.0	6.5	109	16	89	--	--
MAR 2000										
21...	1030	41	2390	12.0	4.0	52	5.8	90	--	1
APR										
28...	1115	29	3240	18.0	16.0	58	4.5	97	--	1
JUN										
05...	1110	44	1650	26.0	19.0	107	13	94	1	2
27...	1050	14	2780	23.0	21.0	41	1.5	72	1	1
JUL										
27...	1040	3.0	2430	23.5	25.0	74	.59	99	--	--

DATE	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
OCT 1999									
06...	4	7	8	10	14	26	49	100	--
NOV									
10...	2	3	4	5	7	14	49	72	100
MAR 2000									
21...	3	4	5	8	12	24	38	100	--
APR									
28...	1	1	2	2	3	7	25	84	100
JUN									
05...	4	8	9	12	16	29	51	100	--
27...	2	2	3	4	7	14	37	78	100
JUL									
27...	--	1	1	2	4	12	36	75	100

E--Estimated.

MUSSELSHELL RIVER BASIN

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, JUNE TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	27.0	21.0	23.5	25.0	22.5	23.5	19.0	15.5	17.0
2	---	---	---	31.0	19.0	24.0	26.0	22.5	23.5	20.0	17.5	18.5
3	---	---	---	27.5	20.0	22.5	25.0	21.0	22.5	21.0	18.0	19.5
4	---	---	---	27.5	18.5	22.0	25.0	20.5	22.5	21.5	19.0	19.5
5	---	---	---	24.0	18.0	20.0	26.0	19.5	22.5	21.0	18.5	19.5
6	---	---	---	29.5	20.5	24.0	29.5	20.5	23.5	21.0	17.0	19.0
7	---	---	---	30.5	19.5	24.5	29.0	21.0	24.5	18.5	14.5	16.5
8	---	---	---	32.0	21.0	25.0	23.5	19.5	21.5	19.0	15.0	17.5
9	---	---	---	28.5	21.5	23.5	23.0	20.5	21.5	18.0	15.0	16.0
10	---	---	---	28.0	20.0	24.0	24.5	21.0	22.5	15.5	14.0	15.0
11	---	---	---	30.5	21.0	25.5	26.0	20.0	22.0	17.5	14.0	15.5
12	---	---	---	32.0	21.5	26.5	21.5	17.5	19.5	18.0	14.5	16.0
13	---	---	---	33.0	23.0	27.5	24.0	19.0	20.5	21.0	16.0	18.0
14	---	---	---	26.5	22.5	24.5	22.5	18.5	20.5	18.5	16.0	17.0
15	---	---	---	27.0	20.5	23.5	22.0	18.0	19.5	19.5	16.5	17.5
16	19.5	13.0	16.0	22.0	18.5	20.5	23.5	19.5	21.5	22.0	18.0	19.5
17	22.5	14.0	18.0	21.5	18.5	19.5	20.5	17.0	18.5	21.0	18.0	19.5
18	26.5	16.0	21.0	28.0	17.5	22.0	21.0	17.5	19.0	20.0	17.0	18.5
19	22.0	16.0	19.5	23.0	11.0	19.5	21.5	18.5	19.5	17.0	13.0	15.5
20	20.0	14.5	17.0	26.5	11.5	20.5	20.5	17.5	19.0	14.5	12.0	13.0
21	24.5	14.5	19.5	29.5	20.0	24.5	18.0	15.5	17.0	14.0	8.0	12.5
22	22.5	18.5	20.5	32.5	21.0	26.0	18.5	16.0	17.5	9.5	8.0	8.5
23	25.5	17.0	21.0	29.0	21.0	24.0	19.5	17.0	18.5	10.5	9.0	9.5
24	24.5	18.5	21.0	28.5	21.0	24.5	21.0	18.5	19.5	11.0	8.5	10.0
25	23.0	17.0	19.5	29.5	19.5	23.0	21.5	18.5	19.5	12.5	10.0	11.0
26	24.0	16.0	19.5	26.0	21.0	22.0	21.5	19.0	20.5	13.0	11.5	12.0
27	26.0	16.5	21.0	29.5	23.0	25.0	22.0	18.5	19.5	13.5	12.0	12.5
28	27.5	17.0	22.0	25.0	22.0	23.0	19.0	16.5	18.0	15.0	12.5	13.0
29	27.0	19.0	22.5	27.5	22.5	24.0	19.0	16.5	18.0	16.0	14.0	14.5
30	29.5	18.0	22.5	29.5	23.0	25.5	19.0	15.5	16.5	16.0	14.5	15.5
31	---	---	---	28.5	24.0	25.5	17.5	14.5	15.5	---	---	---
MONTH	---	---	---	33.0	11.0	23.5	29.5	14.5	20.0	22.0	8.0	15.5

HELL CREEK BASIN

06130650 HELL CREEK NEAR JORDAN, MT

LOCATION.--Lat 47°34'44", long 106°55'37", in NW$^1/_4$ NE$^1/_4$ SE$^1/_4$ 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 to September 2000.
GAGE.--Water-stage recorder. Elevation of gage is 2,270 ft above sea level, from topographic map.
REMARKS.--Records fair 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					e.00	e3.0	.27	.05	37	.00	.00	.00
2					e.00	e4.0	.21	.05	3.1	.00	.00	.01
3					e.00	e5.0	.19	.04	.85	.81	.00	.44
4					e.00	e3.0	.15	.03	.44	53	.00	.00
5					e.00	e2.0	.13	.03	.16	38	.00	.00
6					e.00	e1.0	.11	.03	.07	3.5	.00	e.00
7					e.00	e.50	.09	.05	.05	1.0	.00	e20
8					e.00	e.10	.09	.05	.03	5.5	.00	e5.0
9					e.00	e.10	.09	.05	31	443	.00	e1.0
10					e.00	e.10	.09	.04	34	21	.00	e.00
11					e.00	e.10	.08	.05	2.1	3.5	.00	e.00
12					e.00	e.50	.07	2.6	13	1.4	.00	e.00
13					e.00	e.50	.08	3.8	23	.25	.00	e.00
14					e.00	e1.0	.14	1.1	3.3	.05	.00	e.00
15					e.00	e1.0	.43	.33	2.0	.03	.00	e.00
16					e.00	e1.0	1.6	.15	1.5	.02	.00	e.00
17					e.00	e1.0	1.6	.09	12	.01	.00	e.00
18					e.00	e.50	.38	.05	3.3	.00	.00	.00
19					e.00	e.10	.17	.04	1.1	.00	.00	.00
20					e.00	e.10	.10	.03	.41	.00	.00	.00
21					e5.0	e.10	.07	.02	.13	4.0	.00	17
22					e10	e.10	.04	.01	.05	1.5	.00	23
23					e15	e.10	.05	.00	.04	.12	.00	5.2
24					e10	e.10	.06	.00	.03	.03	.00	1.1
25					e5.0	e.10	.07	.00	.02	.01	.00	.26
26					e4.0	e.10	.06	.00	.01	.01	.00	.12
27					e3.0	e.10	.05	.01	.00	.00	.00	.06
28					e3.0	.10	.04	.04	.00	.00	.00	.05
29					e3.0	.57	.05	.05	.00	.00	.00	.04
30						1.2	.04	.03	.00	.00	.00	.04
31					---	.86	---	13	---	.00	.00	---
TOTAL					58.00	28.03	6.60	21.82	168.69	576.74	0.00	73.32
MEAN					2.00	.90	.22	.70	5.62	18.6	.000	2.44
MAX					15	5.0	1.6	13	37	443	.00	23
MIN					.00	.10	.04	.00	.00	.00	.00	.00
AC-FT					115	56	13	43	335	1140	.00	145

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2000, BY WATER YEAR (WY)

MEAN	2.00	.90	.22	.70	5.62	18.6	.000	2.44
MAX	2.00	.90	.22	.70	5.62	18.6	.000	2.44
(WY)	2000	2000	2000	2000	2000	2000	2000	2000
MIN	2.00	.90	.22	.70	5.62	18.6	.000	2.44
(WY)	2000	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS FOR 2000 WATER YEAR

HIGHEST DAILY MEAN	443	Jul	9
LOWEST DAILY MEAN	.00	Feb	1
INSTANTANEOUS PEAK FLOW	1520	Jul	9
INSTANTANEOUS PEAK STAGE	6.45	Jul	9

e--Estimated.

BIG DRY CREEK BASIN

06131000 BIG DRY CREEK NEAR VAN NORMAN, MT

LOCATION.--Lat 47°20'58", long 106°21'26", in NE$^1/_4$SW$^1/_4$NW$^1/_4$ 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 above sea level, by barometer. Prior to July 24, 1978, at site 400 ft upstream at same datum.

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.5	2.1	2.3	e2.0	e1.0	e4.0	3.8	1.8	1.7	.12	5.5	1.5
2	e2.5	e2.0	2.5	e1.0	e1.0	e4.0	3.7	1.6	1.3	.08	5.0	1.8
3	e2.5	e1.5	2.4	e1.0	e1.0	e5.0	3.5	1.5	1.0	11	4.7	1.7
4	e2.5	1.7	3.6	e1.0	e1.0	e6.0	3.0	1.2	1.1	87	4.3	1.7
5	e2.0	1.9	e3.0	e1.0	e1.0	e7.0	2.7	1.2	.89	124	3.8	1.6
6	e2.5	1.9	e3.0	e1.0	e1.0	e6.0	2.6	1.2	.73	44	3.3	1.4
7	e2.5	1.9	e3.0	e1.0	e1.0	e5.0	2.3	1.4	.69	20	2.9	1.7
8	e2.5	1.9	e3.0	e1.0	e1.0	e4.0	2.2	1.2	.41	11	2.7	1.9
9	e2.0	1.8	e3.0	e1.0	e.80	e8.0	2.0	1.1	1.7	1860	2.5	1.4
10	e1.5	1.9	e3.0	e1.0	e.60	e6.0	1.9	1.1	3.4	2140	2.3	1.3
11	e1.0	1.9	e3.0	e1.0	e.60	e5.0	1.8	1.2	1.3	1070	2.1	1.3
12	e2.0	2.0	e3.0	e1.0	e.60	e5.0	1.6	1.2	1.1	571	1.9	1.2
13	e2.5	1.8	e2.0	e1.0	e.60	e5.0	1.7	1.2	1.2	337	1.7	1.2
14	e2.5	1.8	e2.5	e1.0	e.60	e5.0	2.3	1.2	1.4	242	1.5	1.0
15	2.0	1.9	e2.5	e1.0	e.60	e6.0	2.6	1.1	1.5	164	2.2	.96
16	1.9	1.9	e2.5	e1.0	e.60	5.3	2.7	.98	1.4	100	1.9	.95
17	2.1	1.9	e2.5	e1.0	e.60	4.8	2.5	.88	2.1	57	1.5	.87
18	2.4	2.0	e2.5	e1.0	e1.0	4.6	2.3	.75	1.7	40	1.1	.75
19	2.3	2.0	e2.5	e1.0	e2.0	4.2	2.2	.58	1.5	28	1.7	.84
20	2.3	2.0	e2.0	e1.0	e4.0	4.4	2.1	.57	1.3	34	2.1	.86
21	2.2	2.0	e2.0	e1.0	e6.0	4.1	2.0	.48	1.1	133	2.5	1.8
22	2.2	2.1	e2.5	e1.0	e8.0	3.9	1.8	.39	.71	131	2.6	2.5
23	2.2	e2.0	e2.5	e1.0	e10	3.7	1.8	.32	.52	40	2.4	2.2
24	2.1	e2.0	e2.5	e1.0	e20	3.5	1.9	.27	.41	26	2.3	2.2
25	2.1	2.0	e2.5	e1.0	e15	3.4	2.1	.23	.23	18	2.2	2.1
26	2.0	e2.0	e2.5	e1.0	e10	3.2	2.7	.37	.23	14	2.1	1.8
27	2.0	e2.0	e2.5	e1.0	e6.0	3.0	2.5	.41	.20	11	2.0	1.7
28	2.1	e2.5	e2.5	e.80	e4.0	2.9	2.3	.25	.19	8.9	1.9	1.4
29	2.1	e2.5	e2.5	e.80	e4.0	4.2	2.0	.33	.17	7.5	1.9	1.3
30	2.0	2.3	e2.5	e.60	---	4.7	2.0	.44	.15	6.6	1.7	1.1
31	1.9	---	e2.0	e.80	---	4.2	---	1.0	---	6.1	1.7	---
TOTAL	66.9	59.2	80.3	31.00	103.60	145.1	70.6	27.45	31.33	7342.30	78.0	44.03
MEAN	2.16	1.97	2.59	1.00	3.57	4.68	2.35	.89	1.04	237	2.52	1.47
MAX	2.5	2.5	3.6	2.0	20	8.0	3.8	1.8	3.4	2140	5.5	2.5
MIN	1.0	1.5	2.0	.60	.60	2.9	1.6	.23	.15	.08	1.1	.75
AC-FT	133	117	159	61	205	288	140	54	62	14560	155	87

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2000, BY WATER YEAR (WY)*

MEAN	6.53	3.03	2.69	6.72	76.5	265	87.8	30.1	55.7	43.3	16.4	17.2
MAX	97.5	14.2	33.7	192	1004	1760	2043	300	552	458	367	391
(WY)	1987	1987	1976	1997	1997	1959	1952	1975	1944	1993	1954	1986
MIN	.000	.000	.000	.000	.000	2.75	1.05	.21	.072	.000	.000	.000
(WY)	1940	1961	1961	1940	1940	1961	1961	1958	1988	1961	1959	1940

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1940 - 2000*	
ANNUAL TOTAL	4609.09		8079.81			
ANNUAL MEAN	12.6		22.1		51.1**	
HIGHEST ANNUAL MEAN					243	1978
LOWEST ANNUAL MEAN					1.18	1985
HIGHEST DAILY MEAN	500	Feb 8	2140	Jul 10	21300	Mar 22 1947
LOWEST DAILY MEAN	.00	Jan 1	.08	Jul 2	.00	Oct 1 1939
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.16	Jun 26	.00	Oct 1 1939
INSTANTANEOUS PEAK FLOW			6240	Jul 9	a24600	Mar 21 1947
INSTANTANEOUS PEAK STAGE			7.24	Jul 9	b15.26	Mar 21 1947
INSTANTANEOUS LOW FLOW					c.00	Oct 1 1940
ANNUAL RUNOFF (AC-FT)	9140		16030		36990	
10 PERCENT EXCEEDS	21		6.0		44	
50 PERCENT EXCEEDS	3.0		2.0		2.5	
90 PERCENT EXCEEDS	.15		.75		.00	

*--During period of operation (1940-47, 1949-68, 1970 to current year).
**--Median of yearly mean discharges, 27.6 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.

MISSOURI RIVER MAIN STEM

06131200 NELSON CREEK NEAR VAN NORMAN, MT

LOCATION.--Lat 47°32'08", long 106°09'11", in SW$^1/_4$ NW$^1/_4$ 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 to September 2000.

GAGE.--Water-stage recorder. Elevation of gage is 2,300 ft above sea level, from topographic map.

REMARKS.--Records fair except those for estimated daily 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. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					.00	e.50	.24	.00	.00	.00	.00	.00
2					.00	e.50	e.20	.00	.00	.00	.00	.00
3					.00	e.50	e.18	.00	.00	.63	.00	.00
4					.00	e.50	e.17	.00	.00	46	.00	.00
5					.00	e.50	e.15	.00	.00	21	.00	.00
6					.00	e.20	e.10	.00	.00	15	.00	.00
7					.00	e.20	e.10	.00	.00	2.2	.00	.00
8					.06	e.20	e.10	.00	.00	.49	.00	.00
9					e.10	e.20	e.07	.00	.00	97	.00	.00
10					e.00	e.20	e.05	.00	.00	27	.00	.00
11					e.00	e.20	e.05	.00	.00	14	.00	.00
12					e.00	.20	e.05	.00	.02	1.3	.00	.00
13					e.00	.17	.03	.05	.07	.44	.00	.00
14					e.00	.15	.04	.04	.04	.25	.00	.00
15					e.00	e.15	.04	.02	.06	.14	.00	.00
16					e.00	e.15	.04	.00	.08	.07	.00	.00
17					e.00	.17	.06	.00	.10	.05	.00	.00
18					e.00	.14	.13	.00	.24	.05	.00	.00
19					e.00	.13	.10	.00	.12	.03	.00	.00
20					e.00	.15	.08	.00	.08	.01	.00	.00
21					e.00	.21	.07	.00	.02	.02	.00	.00
22					e.00	.20	.04	.00	.00	.04	.00	.00
23					e5.0	.17	.02	.00	.00	.01	.00	.00
24					e10	.14	.02	.00	.00	.00	.00	.00
25					e7.0	.11	.00	.00	.00	.00	.00	.00
26					e4.0	.09	.01	.00	.00	.00	.00	.00
27					e2.0	.08	.01	.00	.00	.00	.00	.00
28					e1.0	.06	.00	.00	.00	.00	.00	.00
29					e.75	.09	.00	.00	.00	.00	.00	.00
30						.15	.00	.00	.00	.00	.00	.00
31					---	.18	---	.00	---	.00	.00	---
TOTAL					29.91	6.59	2.15	0.11	0.83	225.73	0.00	0.00
MEAN					1.03	.21	.072	.004	.028	7.28	.000	.000
MAX					10	.50	.24	.05	.24	97	.00	.00
MIN					.00	.06	.00	.00	.00	.00	.00	.00
AC-FT					59	13	4.3	.2	1.6	448	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2000, BY WATER YEAR (WY)*

MEAN	.23	.022	.027	.47	2.87	5.15	4.07	1.80	1.95	2.51	1.18	1.48
MAX	1.47	.14	.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	.000	.000	.000	.000	.000	.17	.072	.001	.000	.000	.000	.000
(WY)	1977	1977	1977	1977	1978	1981	2000	1981	1981	1980	1977	1976

SUMMARY STATISTICS	FOR 2000 WATER YEAR		WATER YEARS 1976 - 2000*	
ANNUAL MEAN			1.91	
HIGHEST ANNUAL MEAN			7.57	1978
LOWEST ANNUAL MEAN			.14	1980
HIGHEST DAILY MEAN	97	Jul 9	445	Jul 4 1978
LOWEST DAILY MEAN	.00	Feb 1	a.00	Oct 1 1975
ANNUAL SEVEN-DAY MINIMUM			.00	Oct 1 1975
INSTANTANEOUS PEAK FLOW	519	Jul 9	1750	Jul 4 1978
INSTANTANEOUS PEAK STAGE	6.67	Jul 9	9.30	Jul 4 1978
ANNUAL RUNOFF (AC-FT)			1380	
10 PERCENT EXCEEDS			1.3	
50 PERCENT EXCEEDS			.00	
90 PERCENT EXCEEDS			.00	

*--During period of operation (1976-1985, February 2000 to current year).
a--No flow at times most years.
e--Estimated.

MISSOURI RIVER MAIN STEM

06131500 FORT PECK LAKE AT FORT PECK, MT

LOCATION.--Lat 48°00'26", long 106°23'49", 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. Datum of gage is referenced to sea level. Prior to May 1, 1941, nonrecording gage at same site and datum.

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. 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 at 2400, 15,530,000 acre-ft, Nov. 24, elevation, 2,236.48 ft; minimum, 14,020,000 acre-ft, Sept. 30, elevation, 2,229.24 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
Sept. 30	2,236.16	15,460,000	--
Oct. 31	2,236.23	15,470,000	+10,000
Nov. 30	2,236.41	15,510,000	-+40,000
Dec. 31	2,235.37	15,290,000	-220,000
CAL YR 1999			-240,000
Jan. 31	2,234.15	15,030,000	-260,000
Feb. 29	2,233.84	14,960,000	-70,000
Mar. 31	2,234.60	15,120,000	+160,000
Apr. 30	2,234.41	15,080,000	-40,000
May 31	2,233.68	14,930,000	-150,000
June 30	2,232.80	14,740,000	-190,000
July 31	2,232.00	14,580,000	-160,000
Aug. 31	2,230.08	14,190,000	-390,000
Sept. 30	2,229.24	14,020,000	-170,000
WTR YR 2000			-1,440,000

MISSOURI RIVER MAIN STEM

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT

LOCATION.--Lat 48°02'39", 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.

PERIOD OF RECORD.--March 1934 to current year.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,018.00 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Apr. 14, 1938, at site 0.7 mi upstream at different datum; Apr. 14, 1938, to Sept. 30, 1963, at present site at datum 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. Several observations of water temperature and specific conductance were made during the 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 datum 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4600	4900	7600	10000	9000	7900	4900	9500	10300	9300	9000	8800
2	4600	4800	7600	9900	8800	8000	4900	9800	10200	8900	9000	8700
3	4600	4700	7800	9700	8000	8000	5700	10000	9900	9100	9000	8800
4	4500	4900	7500	9800	7900	6900	6700	9800	10000	8800	8900	8700
5	4700	4400	7600	9800	7700	6400	6600	9800	10100	9000	9200	8800
6	4600	4600	9300	10100	7600	5000	6700	9700	10200	9100	8900	8700
7	4500	4700	9000	9800	7900	4900	6700	9600	10400	8900	9200	8800
8	4600	4700	9000	9900	8200	5200	6700	9100	10300	9200	9100	8800
9	4900	4900	8900	9900	7900	5000	6800	9400	10100	8900	9300	6700
10	4600	4500	8700	10400	8100	5200	6700	9700	10100	9000	8800	4700
11	4300	4800	8800	10000	8000	5300	6600	10100	10100	9100	9100	4700
12	4500	4400	9000	10000	7700	5200	6300	9700	10200	9300	9100	4800
13	4400	4500	9800	10000	8000	5200	6300	10000	10300	9200	8900	4700
14	4400	4400	9900	9900	7900	4800	5700	9900	10300	9200	9100	4900
15	4400	4700	9900	10000	7600	4700	6100	10100	10300	9200	9200	4900
16	4500	4700	9700	9900	8000	4800	6500	10200	9300	9200	9000	5000
17	4500	4800	9800	9900	8100	4900	7000	10000	9400	9100	8900	5100
18	4500	4600	10100	10000	7900	4800	7400	10100	9300	9100	9200	5300
19	4500	4700	10000	9900	8000	4800	7600	9800	9500	9100	9500	5100
20	4500	4600	10000	10100	8100	4800	7400	9900	9100	9100	9200	5100
21	4500	4600	10100	8700	8000	4800	7400	9800	9100	9300	9500	5100
22	4500	4700	10300	9000	7800	4900	7300	10000	9000	9100	9400	5000
23	4600	4700	10200	9100	7700	4900	7200	9900	9300	9200	9500	4900
24	4600	4800	10200	8900	7700	4900	7400	9900	9000	9000	9300	4900
25	4800	4700	9800	9000	8000	4900	7100	9800	8900	8900	9200	5100
26	4700	4700	9900	9100	8000	4800	7000	10100	9300	8600	8700	5100
27	4600	4700	9800	8900	8000	4800	7300	10400	9100	8700	8600	5100
28	4700	4800	10000	9100	7900	4900	9700	10400	9200	8900	8800	5100
29	4700	7200	9800	9400	8000	4900	9600	10400	9200	8400	8700	5100
30	4700	7900	10100	9000	---	4900	9700	10100	9200	8800	8700	5000
31	4500	---	10100	9200	---	4900	---	10300	---	8800	8900	---
TOTAL	141600	146100	290300	298400	231500	165400	209000	307300	290700	279500	280900	181500
MEAN	4568	4870	9365	9626	7983	5335	6967	9913	9690	9016	9061	6050
MAX	4900	7900	10300	10400	9000	8000	9700	10400	10400	9300	9500	8800
MIN	4300	4400	7500	8700	7600	4700	4900	9100	8900	8400	8600	4700
AC-FT	280900	289800	575800	591900	459200	328100	414600	609500	576600	554400	557200	360000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2000, BY WATER YEAR (WY)*

MEAN	11480	9197	9232	9910	9845	7506	7300	8498	8714	10010	12010	11680
MAX	28800	21150	13330	14010	15240	13390	17230	18830	26190	35030	26180	27120
(WY)	1956	1998	1944	1971	1979	1982	1979	1979	1975	1975	1955	1948
MIN	3016	2085	1490	1390	1180	1050	856	950	832	1163	3449	2997
(WY)	1994	1947	1946	1946	1945	1944	1945	1944	1944	1945	1963	1992

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1944 - 2000*	
ANNUAL TOTAL	3014710		2822200			
ANNUAL MEAN	8259		7711		9617	
HIGHEST ANNUAL MEAN					14950	1975
LOWEST ANNUAL MEAN					5313	1963
HIGHEST DAILY MEAN	12300	Jan 26	10400	Jan 10	35400	Jul 7 1975
LOWEST DAILY MEAN	4300	Oct 11	4300	Oct 11	16	Apr 6 1978
ANNUAL SEVEN-DAY MINIMUM	4430	Oct 11	4430	Oct 11	161	Mar 26 1944
INSTANTANEOUS LOW FLOW					161	Mar 26 1944
ANNUAL RUNOFF (AC-FT)	5980000		5598000		6967000	
10 PERCENT EXCEEDS	11700		10000		14800	
50 PERCENT EXCEEDS	8800		8700		8600	
90 PERCENT EXCEEDS	4600		4700		4100	

*--Period of record after operational level in Fort Peck Lake was reached.

MILK RIVER BASIN

06132200 SOUTH FORK MILK RIVER NEAR BABB, MT

LOCATION.--Lat 48°45'14", long 113°10'00", in NE$^1/_4$NW$^1/_4$NW$^1/_4$ 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. Datum of gage is 4,731.6 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Many small 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e13	34	34	52	15	2.2	e11	e6.5		
2			e13	47	33	40	16	2.4	e15	e7.0		
3			e13	39	34	36	15	2.0	e12	e7.0		
4			e13	55	34	32	16	e2.0	e10	e7.5		
5			e13	77	32	28	17	e2.5	7.8	e7.5		
6			e13	60	30	26	17	e3.0	7.1	e8.0		
7			e13	38	29	24	18	e5.0	7.5	e7.5		
8			e13	36	28	23	16	e3.5	6.5	7.6		
9			e12	41	27	31	13	e3.0	4.9	7.7		
10			e13	47	28	29	13	e2.5	4.8	7.6		
11			e14	40	26	24	12	e3.0	5.9	7.8		
12			e14	37	26	24	10	e3.0	5.8	8.3		
13			e14	42	27	25	9.0	e3.5	5.5	9.1		
14			e14	35	27	23	7.4	e3.0	5.2	12		
15			e13	33	26	27	6.1	e3.0	5.0	11		
16			e13	39	25	45	5.3	e3.0	e5.0	9.8		
17			e14	67	25	54	5.7	e3.5	e5.0	9.0		
18			e14	70	26	41	6.7	e3.0	e6.0	8.4		
19			e14	61	24	34	7.1	e3.0	e7.0	7.4		
20			e14	55	23	37	5.7	e3.0	e8.5	7.0		
21			e15	53	22	35	4.8	e3.0	e9.5	6.9		
22			e17	55	21	31	5.3	e3.0	e9.0	6.8		
23			e80	53	19	34	5.2	e2.5	e8.5	6.9		
24			e75	47	19	26	4.9	e2.5	e8.0	8.3		
25			e65	41	18	29	4.2	e2.5	e8.0	7.8		
26			e50	38	17	28	4.0	e3.0	e7.5	7.7		
27			e42	36	17	23	3.8	e2.5	e7.5	7.7		
28			e36	35	18	21	3.3	e2.5	e7.0	9.9		
29			e34	35	23	19	2.7	e2.5	e7.0	8.5		
30			33	35	28	16	2.3	e3.5	e7.0	7.4		
31			32		44		1.9	e3.0		7.3		
TOTAL			746	1381	810	917	273.4	89.6	224.5	248.9		
MEAN			24.1	46.0	26.1	30.6	8.82	2.89	7.48	8.03		
MAX			80	77	44	54	18	5.0	15	12		
MIN			12	33	17	16	1.9	2.0	4.8	6.5		
AC-FT			1480	2740	1610	1820	542	178	445	494		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1961 - 2000

MEAN			32.5	67.8	88.4	89.4	37.9	17.7	15.3	16.7
MAX			136	153	239	465	96.6	42.6	43.8	37.0
(WY)			1972	1969	1967	1975	1975	1993	1993	1986
MIN			6.62	20.7	10.2	.89	.000	.56	2.72	5.07
(WY)			1977	1984	1977	1977	1977	1977	1983	1964

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1961 - 2000	
HIGHEST DAILY MEAN	80	Mar 23	5590	Jun 20 1975
LOWEST DAILY MEAN	1.9	Jul 31	.00	Aug 23 1973
INSTANTANEOUS PEAK FLOW	a88	Mar 23	b12000	Jun 8 1964
INSTANTANEOUS PEAK STAGE	a4.49	Mar 23	c.17	Feb 24 1986
INSTANTANEOUS LOW FLOW			.00	Aug 23 1973

a--Observed.
b--Gage-height, 6.61 ft, from rating curve extended above 400 ft^3/s, on basis of slope-area measurement of peak flow at site 3 mi downstream.
c--Backwater from ice.
e--Estimated.

MILK RIVER BASIN

06133000 MILK RIVER AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'27", long 112°32'42", in NE$^1/_4$ 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 above sea level, from topographic map. 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 datums.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e34	77	76	32	12	.00	.00	.00		
2			e40	82	76	52	13	.00	.00	.00		
3			e64	95	72	59	12	.00	.00	.00		
4			e75	95	71	47	12	.00	.00	.00		
5			e78	123	71	41	12	.00	.00	.00		
6			e79	163	68	36	12	.00	.00	.00		
7			e76	158	64	30	9.2	.00	.00	.00		
8			e74	e119	60	27	7.2	.00	.00	.00		
9			e71	e97	57	24	5.7	.00	.00	.00		
10			e67	95	53	22	4.3	.00	.00	.00		
11			e59	113	50	23	2.0	.00	.00	.00		
12			e54	109	52	30	1.2	.00	.00	.00		
13			e49	96	50	25	.95	.00	.00	.00		
14			e48	e92	48	22	.71	.00	.00	.00		
15			e47	e85	49	21	.14	.00	.00	.00		
16			e44	91	47	22	.00	.00	.00	.00		
17			e42	103	46	21	.00	.00	.00	.00		
18			e41	141	44	52	.00	.00	.00	.00		
19			e39	148	43	59	.00	.00	.00	.00		
20			e38	147	42	46	.00	.00	.00	.00		
21			e40	138	38	36	.00	.00	.00	.00		
22			e41	134	36	33	.00	.00	.00	.00		
23			e54	134	34	32	.00	.00	.00	.00		
24			e79	131	31	27	.00	.00	.00	.00		
25			e150	114	26	26	.00	.00	.00	.25		
26			e204	100	24	23	.00	.00	.00	1.1		
27			e216	87	23	21	.00	.00	.00	1.5		
28			e161	87	22	18	.00	.00	.00	1.8		
29			e137	83	21	17	.00	.00	.00	2.6		
30			111	79	21	14	.00	.00	.00	3.1		
31			94		25		.00	.00		e3.1		
TOTAL			2406	3316	1440	938	104.40	0.00	0.00	13.45		
MEAN			77.6	111	46.5	31.3	3.37	.000	.000	.43		
MAX			216	163	76	59	13	.00	.00	3.1		
MIN			34	77	21	14	.00	.00	.00	.00		
AC-FT			4770	6580	2860	1860	207	.00	.00	27		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1931 - 2000

MEAN	107	210	209	174	58.7	20.6	20.9	25.6
MAX	717	615	679	877	348	142	168	133
(WY)	1972	1969	1967	1953	1951	1951	1951	1952
MIN	10.1	41.5	13.3	3.07	.008	.000	.000	.000
(WY)	1937	1941	1941	1977	1977	1939	1939	1964

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1931 - 2000	
HIGHEST DAILY MEAN	216	Mar 27	5410	Jun 9 1964
LOWEST DAILY MEAN	0	Many days	.00	Jul 31 1931
INSTANTANEOUS PEAK FLOW	a250	Mar 27	C7930	Jun 9 1964
INSTANTANEOUS PEAK STAGE	b4.22	Mar 28	b12.55	Mar 18 1976

a--About, gage height not determined (backwater from ice).
b--Backwater from ice.
c--Gage height, 9.77 ft.
e--Estimated.

MILK RIVER BASIN

06133500 NORTH FORK MILK RIVER ABOVE ST. MARY CANAL, NEAR BROWNING, MT

(International gaging station)

LOCATION.--Lat 48°57'48", long 113°03'43", in $NE^1/_4NE^1/_4SW^1/_4$ 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 above sea level, from topographic map. Prior to June 20, 1921, nonrecording gages at several sites within 1 mi of present site at different datums. June 20, 1921 to Mar. 19, 1997 water-stage recorder at site 0.5 mile downstream of current site at datum 15 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
1			e14	17	12	11	8.3	6.7	8.1	8.4		
2			e16	21	12	9.8	8.3	7.6	12	8.6		
3			e18	17	12	10	8.1	6.6	11	8.7		
4			e21	29	12	10	8.9	6.9	10	9.3		
5			e20	25	12	9.1	8.6	7.4	8.3	9.2		
6			e17	20	11	8.7	8.6	7.3	10	9.8		
7			e16	17	11	8.7	8.7	7.1	10	9.2		
8			e16	17	11	8.5	8.3	7.3	7.9	8.8		
9			e15	21	11	9.0	8.1	6.9	7.5	8.9		
10			e14	17	11	8.6	8.0	6.7	8.7	8.9		
11			e15	16	11	8.3	7.8	7.4	7.9	8.9		
12			e16	15	12	8.7	7.5	7.5	8.1	9.0		
13			e15	16	12	8.9	7.2	6.9	7.1	9.5		
14			e15	e15	11	8.3	6.9	6.5	7.3	10		
15			e14	e14	11	11	6.6	6.5	7.3	9.1		
16			e14	e15	11	13	6.9	6.4	7.2	8.9		
17			e15	22	11	15	7.3	6.7	7.1	8.9		
18			e15	17	10	11	7.3	6.3	6.8	9.0		
19			e15	16	10	10	7.4	6.0	7.9	8.5		
20			e14	15	9.9	11	8.0	6.2	8.3	8.6		
21			e14	15	9.6	9.8	8.6	6.4	9.9	8.8		
22			e15	15	9.4	9.2	7.2	6.4	11	e8.5		
23			e17	14	9.1	9.1	6.6	6.0	10	e8.5		
24			e16	14	9.2	9.1	6.8	5.9	10	e8.5		
25			e16	13	9.1	11	7.0	6.2	10	e8.5		
26			17	13	9.0	9.7	6.9	6.3	9.1	e8.5		
27			18	13	9.1	9.4	6.6	6.0	8.6	e8.0		
28			18	13	8.9	9.0	6.7	6.3	8.3	e8.5		
29			16	12	8.9	8.7	6.7	6.6	8.5	e8.5		
30			15	12	12	8.4	6.5	7.4	8.4	e8.5		
31			16		11		6.6	9.0		e8.0		
TOTAL			493	496	329.2	292.0	233.0	209.4	262.3	273.0		
MEAN			15.9	16.5	10.6	9.73	7.52	6.75	8.74	8.81		
MAX			21	29	12	15	8.9	9.0	12	10		
MIN			14	12	8.9	8.3	6.5	5.9	6.8	8.0		
AC-FT			978	984	653	579	462	415	520	541		

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STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1911 - 2000*

MEAN	24.8	38.4	34.6	29.8	19.7	16.5	18.3	17.8
MAX	109	284	164	147	101	65.5	86.8	59.5
(WY)	1944	1953	1967	1995	1995	1951	1911	1952
MIN	12.0	9.20	7.14	6.95	4.12	3.30	3.90	4.95
(WY)	1984	1941	1941	1988	1985	1940	1940	1941

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1911 - 2000*	
HIGHEST DAILY MEAN	29	Apr 4	1320	Apr 22 1953
LOWEST DAILY MEAN	5.9	Aug 24	1.7	Sep 17 1940
INSTANTANEOUS PEAK FLOW	a43	Apr 4	c3090	May 8 1967
INSTANTANEOUS PEAK STAGE	b3.31	Mar 18	d9.07	Mar 19 1997

*--During periods of operation (May 1911 to July 1912, June to July 1918, May 1919 to current season).
a--Gage height, 2.20 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--From floodmarks at previous site, which was destroyed; 10.50 ft at current site, backwater from ice.
e--Estimated.

MILK RIVER BASIN

06134000 NORTH MILK RIVER NEAR INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°01'19", long 112°58'16", 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. Datum of gage is 4,112.16 ft above sea level (Geodetic Surveys of Canada datum). Prior to May 1913, nonrecording gage at site 2 mi downstream at different datum. May 1, 1913, to Apr. 11, 1930, water-stage recorder 700 ft downstream at different datum. Apr. 12, 1930, to Aug. 15, 1962, water-stage recorder 1,500 ft downstream at different datum.

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. 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, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e20	477	121	660	667	526	498	8.5		
2			e26	487	281	653	660	523	501	8.3		
3			e32	487	537	650	657	523	484	8.4		
4			e26	494	586	643	657	526	459	8.7		
5			e21	491	586	639	629	519	452	7.9		
6			e18	487	604	639	632	509	445	10		
7			e17	487	604	650	632	501	420	9.7		
8			e17	477	614	657	632	509	399	9.7		
9			e14	456	646	632	636	501	385	9.3		
10			e14	445	678	607	632	505	345	9.3		
11			e13	417	682	611	629	516	307	9.4		
12			e14	392	689	611	636	512	235	9.7		
13			e15	385	682	643	629	512	184	9.8		
14			e16	388	678	657	625	512	175	9.6		
15			e15	381	675	636	618	509	161	9.5		
16			e15	385	667	636	618	505	118	9.4		
17			e15	392	667	650	614	501	102	9.2		
18			e15	381	675	650	614	498	95	9.1		
19			e17	381	653	650	611	498	91	8.9		
20			e16	378	625	653	611	498	84	8.9		
21			e17	367	629	671	579	501	65	8.9		
22			e18	352	629	710	498	505	57	8.9		
23			e20	348	650	727	344	509	37	9.0		
24			e25	351	664	735	277	512	24	9.0		
25			e196	427	675	731	273	519	19	8.9		
26			360	614	671	727	296	516	17	8.7		
27			320	646	671	727	381	519	13	8.9		
28			357	590	657	706	410	523	9.7	8.6		
29			403	357	657	682	466	523	9.2	8.9		
30			445	209	667	671	498	526	9.3	9.1		
31			459		664		519	516		e9.2		
TOTAL			2976	12929	19184	19914	17180	15872	6200.2	281.4		
MEAN			96.0	431	619	664	554	512	207	9.08		
MAX			459	646	689	735	667	526	501	10		
MIN			13	209	121	607	273	498	9.2	7.9		
AC-FT			5900	25640	38050	39500	34080	31480	12300	558		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1917 - 2000

MEAN	67.9	189	415	518	563	531	309	59.1
MAX	402	633	700	745	727	721	690	524
(WY)	1981	1991	1995	1976	1936	1969	1972	1951
MIN	12.1	23.6	38.6	43.5	191	16.0	5.57	6.06
(WY)	1936	1940	1918	1952	1977	1982	1988	1942

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1917 - 2000	
HIGHEST DAILY MEAN	735	Jun 24	2170	Jun 7 1995
LOWEST DAILY MEAN	7.9	Oct 5	.00	Mar 1 1940
INSTANTANEOUS PEAK FLOW	a742	Jun 24	b3670	Jun 6 1995
INSTANTANEOUS PEAK STAGE	3.16	May 27	6.89	Jun 6 1995

a--Gage height, 3.12 ft.
b--From rating curve extended above 1,500 ft^3/s.
e--Estimated.

MILK RIVER BASIN

06134500 MILK RIVER AT MILK RIVER, ALBERTA

(International gaging station)

LOCATION.--Lat 49°08'37", long 112°04'44", in NE$^1/_4$ 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. Datum of gage is 3,402.78 ft above sea level (Geodetic Survey of Canada datum). 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 datum 0.61 ft higher. Nov. 3, 1921, to Aug. 28, 1947, water-stage recorder at site 60 ft upstream at present datum. Aug. 29, 1947, to Nov. 10, 1976, water-stage recorder located 700 ft downstream on left bank at present datum.

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. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	e25	e43	e35	e14	e74	537	319	632	576	491	498
2	43	e24	e44	e34	e14	e82	547	235	632	576	498	516
3	40	e33	e45	e32	e11	e99	551	300	643	572	498	523
4	40	e36	e46	e30	e14	e122	565	537	643	572	498	501
5	41	e30	e47	e28	e15	e148	583	579	632	569	512	498
6	41	e35	e48	e28	e18	e121	600	583	622	561	509	498
7	37	38	e37	e28	e20	e109	625	593	622	561	505	501
8	33	43	e29	e27	e21	e96	593	593	618	554	498	480
9	34	44	e25	e27	e18	e87	561	597	622	561	498	466
10	33	40	e24	e28	e18	e84	533	614	593	565	494	459
11	33	36	e22	e27	e17	e85	530	643	561	561	505	431
12	36	e34	e26	e24	e16	e87	523	650	565	558	509	396
13	35	35	e33	e17	e16	e90	494	650	576	558	501	341
14	38	38	e34	e13	e15	e87	487	643	586	551	494	279
15	40	40	e33	e11	e16	e81	498	636	600	551	487	251
16	40	64	e33	e11	e16	e85	477	639	590	554	487	195
17	43	97	e31	e10	e17	e92	477	632	590	551	484	145
18	48	88	e29	e9.5	e19	e102	487	632	590	558	480	114
19	45	e70	e27	e9.4	e22	e118	509	632	614	558	477	117
20	42	e55	e31	e9.2	e26	e113	509	614	618	565	473	114
21	38	e47	e35	e9.1	e32	e106	498	597	593	558	473	119
22	37	e26	e36	e9.2	e38	e99	480	593	597	533	473	104
23	36	e30	e37	e9.4	e42	e92	459	590	607	459	470	82
24	34	e35	e38	e9.5	e60	e85	459	611	614	340	473	73
25	31	e32	e38	e9.9	e58	e77	452	618	618	255	473	55
26	31	e30	e39	e11	e57	e119	498	614	607	231	473	41
27	29	e27	e40	e12	e57	e441	611	614	600	259	470	32
28	29	e32	e39	e13	e59	523	643	614	593	357	473	28
29	28	e38	e38	e14	e64	537	625	614	583	385	470	26
30	27	e40	e38	e16	---	544	463	618	576	427	487	23
31	e26	---	e38	e16	---	540	---	632	---	463	494	---
TOTAL	1134	1242	1103	567.2	810	5125	15874	18036	18137	15499	15127	7906
MEAN	36.6	41.4	35.6	18.3	27.9	165	529	582	605	500	488	264
MAX	48	97	48	35	64	544	643	650	643	576	512	523
MIN	26	24	22	9.1	11	74	452	235	561	231	470	23
AC-FT	2250	2460	2190	1130	1610	10170	31490	35770	35970	30740	30000	15680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 2000, BY WATER YEAR (WY)*

MEAN	104	57.5	34.4	30.8	62.9	233	499	656	711	622	554	353
MAX	555	216	133	268	616	1025	1384	1179	1633	965	795	713
(WY)	1951	1952	1952	1928	1986	1972	1917	1967	1953	1951	1976	1959
MIN	7.83	10.4	2.06	.000	.000	3.44	94.5	236	162	202	29.2	8.63
(WY)	1989	1936	1923	1923	1922	1922	1945	1918	1952	1977	1982	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1917 - 2000*	
ANNUAL TOTAL	107387.7		100560.2			
ANNUAL MEAN	294		275		328	
HIGHEST ANNUAL MEAN					489	1953
LOWEST ANNUAL MEAN					157	1921
HIGHEST DAILY MEAN	840	Jun 5	650	May 12	7700	Feb 26 1986
LOWEST DAILY MEAN	3.6	Jan 6	9.1	Jan 21	.00	Jan 19 1922
ANNUAL SEVEN-DAY MINIMUM	4.0	Jan 4	9.3	Jan 18	.00	Jan 19 1922
INSTANTANEOUS PEAK FLOW			a671	May 12	9850	Feb 25 1986
INSTANTANEOUS PEAK STAGE			b5.45	Jan 22	c12.46	Feb 25 1986
ANNUAL RUNOFF (AC-FT)	213000		199500		237400	
10 PERCENT EXCEEDS	650		608		742	
50 PERCENT EXCEEDS	77		114		162	
90 PERCENT EXCEEDS	26		21		14	

*--Flow increased during irrigation season by water from St. Mary Canal since 1917.
a--Gage height, 3.07 ft, but may have been higher on March 27 during period of ice effect.
b--Backwater from ice.
c--From floodmarks, backwater from ice.
e--Estimated.

MILK RIVER BASIN

06134700 VERDIGRIS COULEE NEAR THE MOUTH, NEAR MILK RIVER, ALBERTA

(International gaging station)

LOCATION.--Lat 49°06'39", long 111°45'31", 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 above sea level, from topographic map.

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.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e.11	.88	.00	.00	.00	.00	.00	.00		
2			e.11	.71	.00	.00	.00	.00	.00	.00		
3			e.11	.46	.00	.00	.00	.00	.00	.00		
4			e.07	.35	.00	.00	.00	.00	.00	.00		
5			e.04	.28	.00	.00	.00	.00	.00	.00		
6			e.04	.25	.00	.00	.00	.00	.00	.00		
7			e.04	.32	.00	.00	.00	.00	.00	.00		
8			e.00	.57	.00	.00	.00	.00	.00	.00		
9			e.00	.25	.00	.00	.00	.00	.00	.00		
10			e.00	.11	.00	.00	.00	.00	.00	.00		
11			e.00	.04	.00	.00	.00	.00	.00	.00		
12			e.00	.00	.00	.00	.00	.00	.00	.00		
13			e.00	.00	.00	.00	.00	.00	.00	.00		
14			e.00	.00	.00	.00	.00	.00	.00	.00		
15			e.00	.28	.00	.00	.00	.00	.00	.00		
16			e.00	1.7	.00	.00	.00	.00	.00	.00		
17			e.04	1.3	.00	.00	.00	.00	.00	.00		
18			e.14	.74	.00	.00	.00	.00	.00	.00		
19			e.21	.49	.00	.00	.00	.00	.00	.00		
20			e.11	.28	.00	.00	.00	.00	.00	.00		
21			e.07	.18	.00	.00	.00	.00	.00	.00		
22			e.04	.07	.00	.00	.00	.00	.00	.00		
23			e.14	.00	.00	.00	.00	.00	.00	.00		
24			.18	.00	.00	.00	.00	.00	.00	.00		
25			.11	.00	.00	.00	.00	.00	.00	.00		
26			.07	.00	.00	.00	.00	.00	.00	.00		
27			.00	.00	.00	.00	.00	.00	.00	.00		
28			.00	.00	.00	.00	.00	.00	.00	.00		
29			2.1	.00	.00	.00	.00	.00	.00	.00		
30			5.6	.00	.00	.00	.00	.00	.00	.00		
31			1.8		.00		.00	.00		.00		
TOTAL			11.13	9.26	0.00	0.00	0.00	0.00	0.00	0.00		
MEAN			.36	.31	.000	.000	.000	.000	.000	.000		
MAX			5.6	1.7	.00	.00	.00	.00	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			22	18	.00	.00	.00	.00	.00	.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1985 - 2000

MEAN	6.99	7.24	7.57	8.04	5.81	7.03	8.16	7.43
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	.009	.096	.000	.000	.000	.000	.000	.000
(WY)	1999	1999	1998	2000	1999	1998	1999	2000

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1985 - 2000	
HIGHEST DAILY MEAN	5.6	Mar 30	264	Mar 11 1996
LOWEST DAILY MEAN	0	Many days	.00	Nov 19 1985
INSTANTANEOUS PEAK FLOW	11	Mar 30	a280	Mar 11 1996
INSTANTANEOUS PEAK STAGE	3.79	Mar 30	b6.51	Mar 2 1994

a--About, gage height not determined (backwater from ice).
b--Maximum observed gage height.
e--Estimated.

MILK RIVER BASIN

06135000 MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 48°58'30", long 110°25'19", in NW$^1/_4$SW$^1/_4$SE$^1/_4$ 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, revised.

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 above sea level, from topographic map. Prior to Mar. 1, 1998, water-stage recorder or nonrecording gages at several sites within 15 mi upstream at different datum.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e60	496	e700	e650	566	269	454	66		
2			e70	511	e650	656	564	282	491	57		
3			e80	527	492	667	551	371	503	52		
4			e100	532	276	679	e550	402	550	48		
5			e130	538	181	e690	e570	425	551	47		
6			e160	526	149	e680	e580	425	532	44		
7			e140	561	440	e670	e560	429	512	40		
8			e130	602	576	e655	e530	439	506	36		
9			e120	650	575	624	566	e450	493	35		
10			e110	665	588	495	643	e461	501	39		
11			e100	632	599	562	576	e470	483	34		
12			e95	584	568	562	557	466	486	33		
13			e100	555	610	557	500	445	495	32		
14			e105	579	651	550	490	440	459	32		
15			e95	535	668	557	490	451	395	32		
16			e90	592	662	586	490	430	340	31		
17			e95	544	697	627	468	422	278	29		
18			e110	528	661	663	463	414	245	28		
19			e140	501	669	e620	479	396	214	25		
20			e150	485	642	581	487	401	186	24		
21			e130	500	630	584	529	410	160	23		
22			114	e510	601	604	519	407	136	22		
23			102	e540	546	617	517	416	129	21		
24			100	e540	542	589	493	423	128	21		
25			94	e540	548	598	463	429	128	21		
26			95	e540	552	569	393	435	124	20		
27			98	e520	e550	e570	298	422	109	20		
28			97	e520	529	e580	209	434	97	20		
29			109	e550	e560	e580	159	434	86	20		
30			443	e700	e600	565	137	443	74	21		
31			532	---	e630	---	186	454	---	20		
TOTAL			4094	16603	17342	18187	14583	12995	9845	993		
MEAN			132	553	559	606	470	419	328	32.0		
MAX			532	700	700	690	643	470	551	66		
MIN			60	485	149	495	137	269	74	20		
AC-FT			8120	32930	34400	36070	28930	25780	19530	1970		

STATISTICS OF MONTHLY MEAN DATA FOR 1917 - 2000 SEASONS*

MEAN	381	571	710	763	624	546	383	128
MAX	1522	1691	1943	2219	1046	886	740	566
(WY)	1978	1965	1927	1953	1951	1927	1972	1990
MIN	16.3	80.1	257	200	262	77.4	13.4	4.99
(WY)	1975	1945	1918	1952	1977	1982	1988	1989

SUMMARY STATISTICS	FOR 2000 SEASON		1917 - 2000 SEASONS*	
HIGHEST DAILY MEAN	a700	Apr 30	10000	Mar 13 1996
LOWEST DAILY MEAN	20	Oct 26	.00	Feb 1 1922
INSTANTANEOUS PEAK FLOW	b741	Jul 10	d12000	Mar 13 1996
INSTANTANEOUS PEAK STAGE	c4.43	Mar 5	c15.03	Mar 13 1996

*--Flow increased during irrigation season by water from St. Mary Canal since 1917.
a--May have been higher during period of ice-affected or doubtful record.
b--Gage height, 3.97 ft.
c--Backwater from ice jam.
d--About.
e--Estimated.

06137400 BIG SANDY CREEK AT RESERVATION BOUNDARY, NEAR ROCKY BOY, MT

LOCATION.--Lat 48°10'21", long 109°49'31", in $SE^1/_4NE^1/_4NW^1/_4$ sec. 20, T.28 N., R.15 E., Chouteau County, Hydrologic Unit 10050005, on left bank 1.0 mi downstream from Muddy Creek, 6.0 mi south of Rocky Boy Agency, and at river mile 90.5.

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 above sea level, from topographic map.

REMARKS.--Records poor. No known regulation or diversions upstream of 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	6.8	e4.6	3.7	3.5	e3.8	3.3	5.0	5.0	2.2	.89	1.8
2	6.6	6.6	e4.6	e3.6	3.7	e4.0	3.5	5.2	4.3	2.8	.44	1.7
3	5.9	6.0	e4.6	e3.6	3.3	e4.2	4.1	5.1	3.9	3.0	e.50	2.0
4	6.2	6.1	e4.6	e3.8	3.5	e4.4	3.5	5.0	3.8	5.2	e.75	2.1
5	6.1	5.9	e4.4	e3.8	3.6	e4.8	3.8	5.5	3.1	3.9	1.2	2.2
6	6.1	5.9	e4.6	e3.8	3.6	e4.4	2.9	5.8	3.0	4.0	1.0	2.4
7	5.3	5.8	e4.4	e3.8	3.6	4.2	2.6	6.1	2.7	4.0	.64	2.5
8	4.7	5.5	e4.4	e3.8	3.5	3.4	2.6	5.3	2.6	3.6	.71	2.3
9	5.7	5.6	e4.2	3.8	3.4	4.1	3.5	5.8	2.6	3.9	.62	1.7
10	4.4	5.5	e4.4	3.7	3.2	4.3	3.2	6.2	3.0	3.6	.42	1.7
11	4.5	5.2	e4.4	3.9	3.4	3.8	2.8	8.0	2.7	3.6	.49	1.9
12	4.4	5.0	e4.4	3.8	3.3	3.7	3.8	8.0	2.5	3.5	.76	1.8
13	5.0	4.9	4.5	e3.8	3.3	3.9	5.0	9.4	2.7	3.6	.57	1.9
14	5.2	4.9	e4.6	e3.6	3.3	4.0	3.9	11	2.3	3.4	.72	1.9
15	5.0	4.7	4.6	e3.6	3.4	5.0	5.0	11	2.6	3.4	1.0	2.0
16	4.9	4.6	4.6	e3.6	3.3	4.4	4.3	10	2.5	3.4	.92	1.7
17	5.2	4.5	4.5	e3.6	3.2	3.3	4.6	9.7	2.7	3.0	1.1	1.4
18	5.6	4.6	4.7	e3.6	3.2	4.1	4.9	8.6	2.3	3.0	1.0	1.5
19	5.1	4.5	e4.4	e3.4	3.1	3.9	5.0	7.5	2.5	3.0	1.2	2.3
20	5.1	4.7	e4.4	e3.4	3.4	3.6	4.8	6.8	2.8	3.1	1.5	3.1
21	5.4	4.7	e4.6	e3.4	3.4	4.0	4.7	6.1	2.7	4.2	1.5	3.4
22	5.4	4.6	e4.6	e3.4	e3.5	4.7	4.7	5.9	2.7	3.5	1.5	3.5
23	5.3	e4.4	e4.8	3.6	e3.6	4.1	6.0	5.5	2.2	2.3	1.6	3.1
24	5.1	4.5	e5.0	3.7	e3.6	4.0	5.0	5.4	2.1	2.1	1.6	3.2
25	5.0	4.7	e4.8	3.7	e3.6	4.6	5.0	5.4	2.5	2.1	1.6	3.4
26	5.2	5.3	e4.8	3.8	e3.6	4.1	5.7	5.6	1.9	1.8	1.4	2.6
27	6.5	e5.0	e4.8	3.7	e3.7	4.2	6.0	5.1	2.1	2.1	1.3	2.5
28	8.3	e4.6	e5.0	3.6	e3.8	4.2	6.1	4.6	2.1	2.2	1.5	2.4
29	8.3	e4.4	e4.6	3.7	e3.7	4.2	7.4	4.3	2.2	2.0	2.0	2.3
30	7.7	e4.4	e4.2	3.5	---	3.6	6.7	4.2	2.3	1.7	2.4	2.2
31	7.2	---	3.7	3.4	---	4.7	---	4.5	---	1.2	2.8	---
TOTAL	176.0	153.9	140.8	113.2	100.3	127.7	134.4	201.6	82.4	94.4	35.63	68.5
MEAN	5.68	5.13	4.54	3.65	3.46	4.12	4.48	6.50	2.75	3.05	1.15	2.28
MAX	8.3	6.8	5.0	3.9	3.8	5.0	7.4	11	5.0	5.2	2.8	3.5
MIN	4.4	4.4	3.7	3.4	3.1	3.3	2.6	4.2	1.9	1.2	.42	1.4
AC-FT	349	305	279	225	199	253	267	400	163	187	71	136

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2000, BY WATER YEAR (WY)

MEAN	5.91	5.16	4.63	3.88	4.83	6.90	11.5	15.2	17.9	14.2	7.01	5.87
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	1.59	1.56	1.70	1.36	.85	1.81	4.48	1.84	1.42	1.51	.50	.78
(WY)	1989	1989	1985	1989	1989	1988	2000	1988	1988	1988	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1982 - 2000	
ANNUAL TOTAL	3697.2		1428.83			
ANNUAL MEAN	10.1		3.90		8.44	
HIGHEST ANNUAL MEAN					18.1	1986
LOWEST ANNUAL MEAN					2.37	1988
HIGHEST DAILY MEAN	118	Jun 4	11	May 14	298	Jun 27 1998
LOWEST DAILY MEAN	2.5	Jan 23	.42	Aug 10	.42	Aug 10 1988
ANNUAL SEVEN-DAY MINIMUM	2.6	Jan 22	.60	Aug 7	.45	Aug 9 1988
INSTANTANEOUS PEAK FLOW			a13	May 14	c510	Jun 27 1998
INSTANTANEOUS PEAK STAGE			b5.56	Sep 21	6.07	Jun 27 1998
INSTANTANEOUS LOW FLOW					d.03	Jun 26 1992
ANNUAL RUNOFF (AC-FT)	7330		2830		6120	
10 PERCENT EXCEEDS	20		5.8		17	
50 PERCENT EXCEEDS	5.9		3.8		5.0	
90 PERCENT EXCEEDS	3.2		1.8		2.0	

a--Gage height, 4.11 ft.
b--Backwater from beaver dam.
c--On basis of slope-area measurement of peak flow.
d--Gage height, 2.32 ft.
e--Estimated.

MILK RIVER BASIN

06139500 BIG SANDY CREEK NEAR HAVRE, MT

LOCATION.--Lat 48°31'36", long 109°50'27", in $SW^1/_4SW^1/_4SW^1/_4$ 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 above sea level, from topographic map.
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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				4.0	e4.0	3.8	.13	.05	.00			
2				4.0	e4.0	2.8	.09	.03	.00			
3				4.3	e4.0	2.4	.09	.00	.00			
4				3.6	e4.0	2.4	.10	.00	.00			
5				2.4	e4.0	2.0	.05	.00	.00			
6				2.6	e4.0	1.6	.06	.00	.00			
7				2.0	e4.2	1.8	.04	.00	.00			
8				1.9	e4.4	1.8	.03	.00	.00			
9				1.7	e4.6	1.1	.03	.00	.00			
10				1.4	e4.4	.92	.04	.00	.00			
11				e1.1	e4.0	.65	.02	.00	.00			
12				e1.1	e4.5	3.0	.00	.00	.00			
13				e1.5	e5.0	9.4	.00	.00	.00			
14				e2.0	e6.0	9.7	.00	.00	.00			
15				e2.5	e7.0	11	.00	.00	.00			
16				e3.5	e8.0	10	.00	.00	.00			
17				e4.0	e7.0	7.8	.00	.00	.00			
18				e4.0	5.5	5.7	.00	.00	.00			
19				e4.5	4.9	5.0	.83	.00	.00			
20				e4.5	3.7	3.5	1.5	.00	.00			
21				e4.5	3.0	2.1	12	.00	.00			
22				e4.5	2.9	1.7	4.6	.00	.00			
23				e4.5	2.4	1.2	2.9	.00	.00			
24				e4.9	2.0	.91	3.1	.00	.00			
25				4.6	1.9	1.0	2.3	.00	.00			
26				5.5	1.4	.65	2.0	.00	.00			
27				5.1	1.2	.52	1.2	.00	.00			
28				4.7	1.1	.33	.74	.00	.00			
29				4.5	.92	.25	.52	.00	.00			
30				e4.3	.68	.16	.26	.00	.00			
31				---	1.3	---	.10	.00				
TOTAL				103.7	116.00	95.19	32.73	0.08	0.00			
MEAN				3.46	3.74	3.17	1.06	.003	.000			
MAX				5.5	8.0	11	12	.05	.00			
MIN				1.1	.68	.16	.00	.00	.00			
AC-FT				206	230	189	65	.2	.00			

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1946 - 2000*

MEAN	.48	6.65	61.3	69.9	15.8	29.1	20.9	6.27	4.78	7.96	.045	.020
MAX	3.39	19.5	343	1218	108	222	137	85.9	54.4	54.5	.31	.14
(WY)	1947	1947	1947	1952	1986	1953	1993	1993	1993	1987	1953	1953
MIN	.000	.000	.63	.49	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1948	1948	1949	1949	1949	1949	1946	1946	1946	1947	1947	1947

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1946 - 2000*	
HIGHEST DAILY MEAN	12	Jul 21	5100	Apr 3 1952
LOWEST DAILY MEAN	.00	Jul 12	.00	Feb 1 1946
INSTANTANEOUS PEAK FLOW	42	Jul 21	5570	Apr 3 1952
INSTANTANEOUS PEAK STAGE	3.15	Jul 21	a14.70	Apr 3 1952

*--During period of operation (see PERIOD OF RECORD).
a--From floodmarks.
e--Estimated.

MILK RIVER BASIN

06140500 MILK RIVER AT HAVRE, MT

LOCATION.--Lat 48°33'50", long 109°41'42", in $SE^1/_4NE^1/_4NE^1/_4$ 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. Datum of gage is 2,465.24 ft above sea level. Prior to Nov. 4, 1902, nonrecording gage at site 0.75 mi downstream at different datum. Nov. 4, 1902, to Aug. 6, 1980, nonrecording gages 1.25 mi downstream on 7th Avenue East highway bridges, all at datums 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	380	57	e58	e42	e44	59	56	289	1090	1030	844	34
2	343	60	e60	e38	e46	e62	55	525	860	1040	875	37
3	346	61	e60	e36	e46	67	55	617	844	1050	860	36
4	325	62	e50	e40	e44	68	58	699	837	1040	859	40
5	112	59	e38	e42	e44	e67	54	707	826	987	901	43
6	67	62	e42	e45	e44	e65	53	641	830	820	876	35
7	64	63	e42	e48	e46	e61	55	633	874	344	851	33
8	61	65	e40	50	e48	e60	53	652	916	311	830	34
9	59	69	e40	50	e50	e60	53	880	915	325	805	34
10	59	67	e42	47	e46	e60	54	1020	902	306	738	32
11	61	66	e44	45	e44	e65	54	1120	897	299	450	34
12	62	69	e44	e45	e42	73	53	1090	903	360	210	34
13	64	64	e42	e45	e42	74	53	923	898	434	197	36
14	60	65	e40	e44	e40	71	49	916	861	544	187	34
15	61	62	e42	e44	e42	64	67	916	846	706	117	35
16	61	62	e46	e50	e42	e61	64	911	750	712	113	35
17	63	62	e42	e48	e40	e65	65	911	681	721	107	35
18	65	63	e42	e46	e42	70	64	904	674	794	109	36
19	60	63	e38	e40	e42	74	65	905	666	803	110	39
20	58	65	e34	e38	e44	66	59	940	657	927	111	37
21	60	62	e40	e40	e46	65	59	942	631	989	109	46
22	63	e55	e46	e42	e48	64	59	942	629	954	102	38
23	63	e55	47	e42	e50	66	64	951	632	941	101	38
24	64	e55	46	e42	e50	63	61	982	629	929	100	38
25	64	62	46	e40	e53	63	59	1170	634	1040	102	38
26	66	62	44	e44	e55	62	69	1240	627	1140	101	38
27	78	61	45	e44	54	60	64	1230	626	1110	99	38
28	67	58	46	e44	59	61	115	1220	628	969	103	38
29	64	e52	46	e42	62	62	244	1230	714	877	100	39
30	62	e55	43	e42	---	61	270	1220	922	854	59	38
31	66	---	44	e42	---	58	---	1230	---	842	39	---
TOTAL	3148	1843	1379	1347	1355	1997	2203	28556	23399	24198	11165	1102
MEAN	102	61.4	44.5	43.5	46.7	64.4	73.4	921	780	781	360	36.7
MAX	380	69	60	50	62	74	270	1240	1090	1140	901	46
MIN	58	52	34	36	40	58	49	289	626	299	39	32
AC-FT	6240	3660	2740	2670	2690	3960	4370	56640	46410	48000	22150	2190

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2000, BY WATER YEAR (WY)*

MEAN	146	77.6	53.9	57.8	92.9	328	532	816	820	775	567	327
MAX	628	325	160	780	1400	2106	2700	2191	2188	2045	1303	956
(WY)	1994	1976	1900	1918	1916	1918	1899	1967	1908	1902	1978	1993
MIN	.000	.000	.000	.000	.000	5.00	25.0	61.4	35.2	15.3	.000	.000
(WY)	1906	1906	1906	1906	1922	1919	1983	1905	1905	1910	1910	1905

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1898 - 2000*	
ANNUAL TOTAL	114202		101692			
ANNUAL MEAN	313		278		384	
HIGHEST ANNUAL MEAN					727	1965
LOWEST ANNUAL MEAN					39.2	1905
HIGHEST DAILY MEAN	1240	Jul 28	1240	May 26	a16000	Apr 12 1899
LOWEST DAILY MEAN	34	Dec 20	32	Sep 10	b.00	Jul 11 1898
ANNUAL SEVEN-DAY MINIMUM	41	Dec 14	34	Sep 6	.00	Aug 15 1905
INSTANTANEOUS PEAK FLOW			1270	May 27	c20000	Apr 12 1899
INSTANTANEOUS PEAK STAGE			4.39	May 27	d19.30	Apr 12 1899
ANNUAL RUNOFF (AC-FT)	226500		201700		278100	
10 PERCENT EXCEEDS	894		912		1060	
50 PERCENT EXCEEDS	77		62		140	
90 PERCENT EXCEEDS	46		40		27	

06140500 MILK RIVER AT HAVRE, MT--Continued

	WATER YEARS 1900-1916**		WATER YEARS 1917 - 2000***	
ANNUAL MEAN	274		420	
HIGHEST ANNUAL MEAN	571	1916	727	1965
LOWEST ANNUAL MEAN	39.2	1905	160	1919
HIGHEST DAILY MEAN	9600	Jun 9 1908	9150	Mar 20 1918
LOWEST DAILY MEAN	a.00	Aug 16 1904	.00	Jan 1 1922
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 15 1904	.00	Jan 1 1922
INSTANTANEOUS PEAK FLOW	11000	Jun 9 1908	f11400	Apr 3 1952
INSTANTANEOUS PEAK STAGE	16.5	Jun 9 1908	18.60	Apr 3 1952
ANNUAL RUNOFF (AC-FT)	198300		304200	
10 PERCENT EXCEEDS	640		1090	
50 PERCENT EXCEEDS	110		171	
90 PERCENT EXCEEDS	5.0		30	

*--During periods of operation (May 1898 to November 1898, April 1899 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 floodmarks.
e--Estimated.
f--Observed, about.

MILK RIVER BASIN

06142400 CLEAR CREEK NEAR CHINOOK, MT

LOCATION.--Lat 48°34'44", long 109°23'26", in $SE^1/_4NW^1/_4NW^1/_4$ 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 above sea level, from topographic map.

REMARKS.--Records fair. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				12	.61	9.9	.75	.07	.00			
2				12	.57	16	.66	.16	.00			
3				12	.57	14	.85	.14	.00			
4				12	.54	11	21	.15	.00			
5				11	.49	8.3	6.4	.12	.00			
6				11	.44	6.4	3.1	.21	.00			
7				11	.41	5.1	1.9	.03	.00			
8				9.7	.38	3.9	1.3	.02	.00			
9				7.9	.31	3.1	1.4	.00	.00			
10				5.6	.32	2.6	1.2	.00	.00			
11				2.5	.67	2.4	.93	.00	.00			
12				1.6	4.1	2.1	1.5	.00	.00			
13				1.3	17	2.0	1.4	.08	.00			
14				1.3	13	1.6	.93	.00	.00			
15				1.4	17	1.5	.65	.00	.00			
16				4.0	14	1.4	.57	.00	.00			
17				5.9	13	1.6	.49	.00	.00			
18				3.0	12	1.9	.46	.00	.00			
19				1.8	11	2.2	.44	.00	.00			
20				1.5	11	2.0	.58	.00	.00			
21				1.3	8.3	2.0	1.6	.00	.00			
22				1.0	7.4	1.7	.58	.00	.00			
23				2.6	5.3	1.6	.47	.00	.00			
24				1.7	3.2	1.3	.43	.00	.00			
25				1.1	3.0	1.4	.41	.00	.00			
26				.84	2.5	1.2	.39	.00	.00			
27				.74	1.9	.74	.23	.00	.00			
28				.74	1.9	.68	.12	.00	.00			
29				.72	1.6	.90	.07	.00	.00			
30				.62	1.3	.91	.07	.00	.00			
31				---	1.7	---	.04	.00	---			
TOTAL				139.86	155.51	111.43	50.92	0.98	0.00			
MEAN				4.66	5.02	3.71	1.64	.032	.000			
MAX				12	17	16	21	.21	.00			
MIN				.62	.31	.68	.04	.00	.00			
AC-FT				277	308	221	101	1.9	.00			

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1984 - 2000

MEAN	12.8	22.4	17.6	10.2	3.08	4.76
MAX	46.0	137	74.0	51.4	34.9	47.4
(WY)	1994	1986	1986	1993	1993	1986
MIN	.56	.14	.001	.000	.000	.000
(WY)	1992	1992	1988	1985	1984	1984

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1984 - 2000	
HIGHEST DAILY MEAN	21	Jul 4	360	Sep 25 1986
LOWEST DAILY MEAN	.00	Oct 1	a.00	Jul 5 1984
INSTANTANEOUS PEAK FLOW	50	Jul 14	571	Sep 25 1986
INSTANTANEOUS PEAK STAGE	2.43	Jul 14	8.23	Sep 25 1986

a--No flow at times most years.

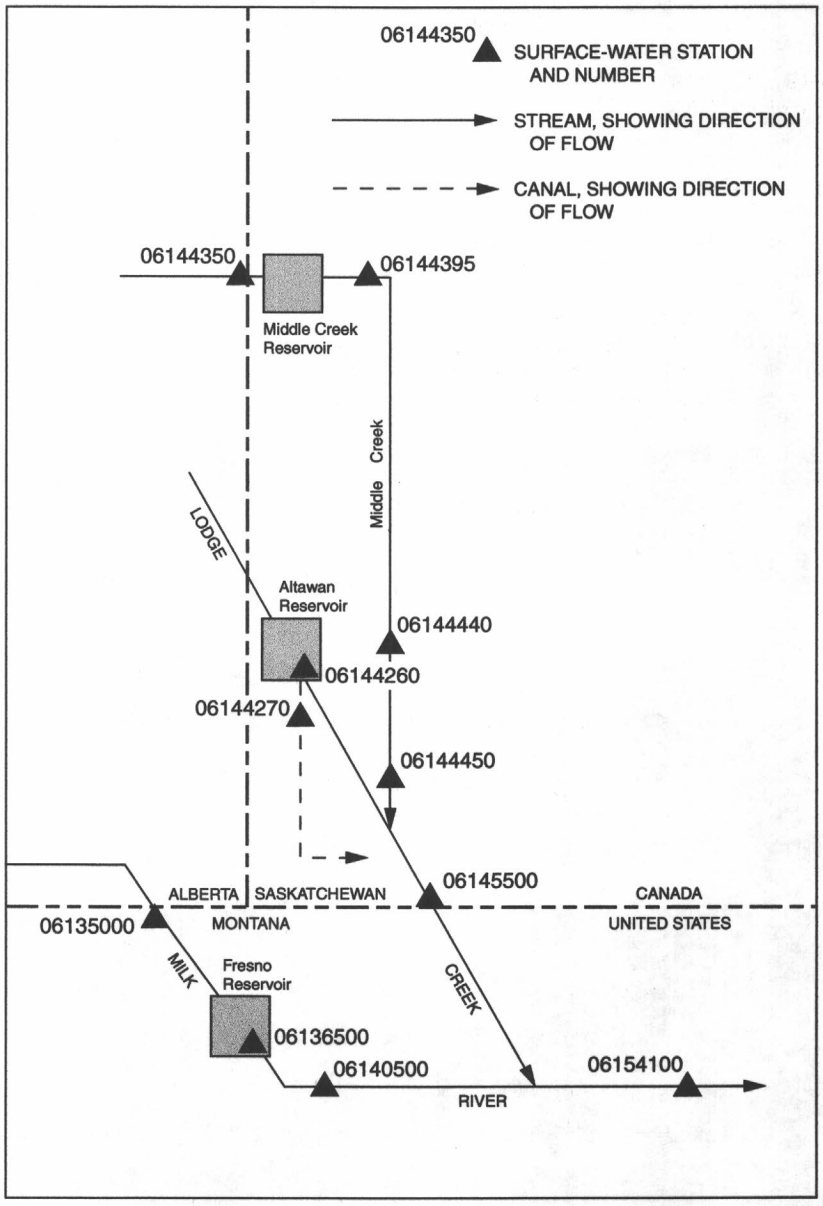


Figure 11. Schematic diagram showing diversions and storage in Lodge Creek Basin.

MILK RIVER BASIN

06144260 ALTAWAN RESERVOIR NEAR GOVENLOCK, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°10'00", long 109°55'00", 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. Datum of gage is at mean sea level (Geodetic Survey of Canada datum). Prior to July 7, 1967, non-recording 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. 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 observed, 504 acre-ft, Apr. 17, elevation, 2,932.88 ft; minimum, 234 acre-ft, Oct. 31, elevation, 2,929.30 ft.

Seasonal monthend contents, in acre-ft, February to October 2000

Date	Contents
Feb. 29	476
Mar. 31	490
Apr. 30	482
May 31	446
June 30	404
July 31	321
Aug. 31	270
Sept. 30	247
Oct. 31	234

MILK RIVER BASIN

06144270 SPANGLER DITCH NEAR GOVENLOCK, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°09'16", long 109°54'58", in NW$^1/_4$ 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 above sea level, from topographic map. Prior to March 1950, nonrecording gages at several sites within 2 mi of present site at different datums. March 1950 to July 8, 1960, water-stage recorder at site 350 ft downstream at different datum.

REMARKS.--Records good. Canal diverts water from right bank of Lodge Creek in SW$^1/_4$ sec.35, T.2, R.30 W., third meridian, for irrigation of 1,320 acres in Spangler irrigation project.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	.00	.00	.00	.00	.00		
2			.00	.00	.00	.00	.00	.00	.00	.00		
3			.00	.00	.00	.00	.00	.00	.00	.00		
4			.00	.00	.00	.00	.00	.00	.00	.00		
5			.00	.00	.00	.00	.00	.00	.00	.00		
6			.00	.00	.00	.00	3.1	.00	.00	.00		
7			.00	.00	.00	.00	5.8	.00	.00	.00		
8			.00	.00	.00	.00	.00	.00	.00	.00		
9			.00	.00	.00	.00	.00	.00	.00	.00		
10			.00	.00	.00	.00	.00	.00	.00	.00		
11			.00	.00	.00	.00	.00	.00	.00	.00		
12			.00	.00	.00	.00	.00	.00	.00	.00		
13			.00	.00	.00	.00	.00	.00	.00	.00		
14			.00	.00	.00	.00	.00	.00	.00	.00		
15			.00	.00	.00	.00	.00	.00	.00	.00		
16			.00	.00	.00	.00	.00	.00	.00	.00		
17			.00	.00	.00	.00	.00	.00	.00	.00		
18			.00	.00	.00	.00	.00	.00	.00	.00		
19			.00	.00	.00	.00	.00	.00	.00	.00		
20			.00	.00	.00	.00	.00	.00	.00	.00		
21			.00	.00	.00	.00	.00	.00	.00	.00		
22			.00	.00	.00	.00	.00	.00	.00	.00		
23			.00	.00	.00	.00	.00	.00	.00	.00		
24			.00	.00	.00	.00	.00	.00	.00	.00		
25			.00	.00	.00	.00	.00	.00	.00	.00		
26			.00	.00	.00	.00	.00	.00	.00	.00		
27			.00	.00	.00	.00	.00	.00	.00	.00		
28			.00	.00	.00	.00	.00	.00	.00	.00		
29			.00	.00	.00	.00	.00	.00	.00	.00		
30			.00	.00	.00	.00	.00	.00	.00	.00		
31			.00	---	.00	---	.00	.00	---	.00		
TOTAL			0.00	0.00	0.00	0.00	8.90	0.00	0.00	0.00		
MEAN			.000	.000	.000	.000	.29	.000	.000	.000		
MAX			.00	.00	.00	.00	5.8	.00	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	.00	.00	.00	18	.00	.00	.00		

MILK RIVER BASIN

06144350 MIDDLE CREEK NEAR SASKATCHEWAN BOUNDARY

(International gaging station)

LOCATION.--Lat 49°25'30", long 110°03'08", 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. Datum of gage is 3,381.13 ft above sea level (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 datums. Water Survey of Canada satellite telemeter at station.

REMARKS.--Records good. Minor diversions for irrigation upstream from 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.21	.14	.11	.07	.14	.04	.04	.04		
2			.18	.18	.07	.04	.11	.04	.04	.04		
3			.25	.14	.11	.07	.14	.04	.04	.04		
4			.28	.14	.11	.11	.11	.04	.04	.04		
5			.42	.11	.07	.07	.07	.04	.04	.04		
6			.42	.07	.07	.07	.07	.04	.04	.04		
7			.25	.07	.07	.07	.07	.04	.04	.04		
8			.21	.07	.07	.07	.07	.04	.04	.04		
9			.18	.07	.07	.07	.07	.04	.04	.04		
10			.18	.07	.07	.04	.07	.04	.04	.04		
11			.21	.07	.14	.04	.07	.04	.07	.04		
12			.18	.11	.11	.04	.07	.04	.04	.04		
13			.18	.25	.11	.04	.07	.04	.04	.04		
14			.21	.18	.07	.04	.11	.04	.04	.04		
15			.18	.04	.11	.04	.07	.04	.04	.04		
16			.18	.07	.11	.04	.07	.04	.04	.04		
17			.18	.18	.07	.04	.07	.04	.04	.04		
18			.21	.07	.07	.07	.07	.04	.04	.04		
19			.32	.07	.11	.07	.04	.04	.04	.07		
20			.21	.11	.11	.07	.04	.04	.04	.07		
21			.21	.14	.07	.11	.04	.04	.04	.07		
22			.32	.21	.04	.11	.04	.04	.04	.07		
23			.46	.14	.07	.11	.04	.04	.04	.07		
24			.35	.14	.07	.11	.07	.04	.04	.07		
25			.21	.18	.07	.11	.07	.04	.04	.07		
26			.14	.18	.07	.11	.07	.04	.04	.07		
27			.18	.11	.07	.11	.07	.04	.04	.07		
28			.14	.11	.07	.11	.07	.04	.04	.07		
29			.14	.11	.07	.11	.04	.04	.04	.07		
30			.14	.11	.07	.18	.04	.04	.04	.07		
31			.14	---	.04	---	.04	.04	---	.07		
TOTAL			7.07	3.64	2.54	2.34	2.19	1.24	1.23	1.63		
MEAN			.23	.12	.082	.078	.071	.040	.041	.053		
MAX			.46	.25	.14	.18	.14	.04	.07	.07		
MIN			.14	.04	.04	.04	.04	.04	.04	.04		
AC-FT			14	7.2	5.0	4.6	4.3	2.5	2.4	3.2		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1910 - 2000*

MEAN	14.6	39.1	11.9	3.63	1.93	.77	1.04	.47
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	.000	.12	.082	.078	.049	.009	.000	.048
(WY)	1950	2000	2000	2000	1984	1998	1962	1999

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1910 - 2000*	
HIGHEST DAILY MEAN	.46	Mar 23	2560	Apr 15 1952
LOWEST DAILY MEAN	.04	Apr 15	.00	Mar 1 1950
INSTANTANEOUS PEAK FLOW	.85	Mar 22	a4980	Apr 15 1952
INSTANTANEOUS PEAK STAGE	3.66	Mar 22	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.

MILK RIVER BASIN

06144395 MIDDLE CREEK BELOW MIDDLE CREEK RESERVOIR, NEAR GOVENLOCK, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°24'44", long 109°55'06", 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 above sea level, from topographic map. Prior to April 1972, non recording gages at two sites within 2 mi of present site, at different datums.

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.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	6.0	.00	.00	.00	.00		
2			.00	.00	.00	3.2	.00	.00	.00	.00		
3			.00	.00	.00	6.9	.00	.00	.00	.00		
4			.00	.00	.00	7.2	.00	.00	.00	.00		
5			.00	.00	.00	13	.00	.00	.00	.00		
6			.00	.00	.00	4.9	.00	.00	.00	.00		
7			.00	.00	.00	.60	.00	.00	.00	.00		
8			.00	.00	.00	1.3	.00	.00	.00	.00		
9			.00	.00	.00	.28	.00	.00	.00	.00		
10			.00	.00	.00	.07	.00	.00	.00	.00		
11			.00	.00	.00	.04	.00	.00	.00	.00		
12			.00	.00	.00	.00	.00	.00	.00	.00		
13			.00	.00	.00	.00	.00	.00	.00	.00		
14			.00	.00	.00	.00	.00	.00	.00	.00		
15			.00	.00	.00	.00	.00	.00	.00	.00		
16			.00	.00	.00	.00	.00	.00	.00	.00		
17			.00	.00	.00	.00	.00	.00	.00	.00		
18			.00	.00	.00	.00	.00	.00	.00	.00		
19			.00	.00	.00	.00	.00	.00	.00	.00		
20			.00	.00	.00	.00	.00	.00	.00	.00		
21			.00	.00	.00	.00	.00	.00	.00	.00		
22			.00	.00	54	.00	.00	.00	.00	.00		
23			.00	.00	21	.00	.00	.00	.00	.00		
24			.00	.00	.78	.00	.00	.00	.00	.00		
25			.00	.00	2.3	.00	.00	.00	.00	.00		
26			.00	.00	2.9	.00	.00	.00	.00	.00		
27			.00	.00	3.5	.00	.00	.00	.00	.00		
28			.00	.00	3.3	.00	.00	.00	.00	.00		
29			.00	.00	3.6	.00	.00	.00	.00	.00		
30			.00	.00	1.4	.00	.00	.00	.00	.00		
31			.00	---	3.2	---	.00	.00	---	.00		
TOTAL			0.00	0.00	95.98	43.49	0.00	0.00	0.00	0.00		
MEAN			.000	.000	3.10	1.45	.000	.000	.000	.000		
MAX			.00	.00	54	13	.00	.00	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	.00	190	86	.00	.00	.00	.00		

MILK RIVER BASIN

06144440 MIDDLE CREEK NEAR GOVENLOCK, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°13'42", long 109°48'57", in NW$^1/_4$ 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 above sea level, from topographic map.

REMARKS.--Records fair. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.74	1.1	1.3	3.6	.35	.00	.00	.00		
2			.74	1.4	1.7	4.3	.46	.00	.00	.00		
3			1.8	.92	1.6	4.5	.39	.00	.00	.00		
4			1.9	.92	1.6	4.9	.46	.00	.00	.00		
5			2.3	.95	1.5	4.3	.39	.00	.00	.00		
6			2.3	.85	1.4	5.0	.64	.00	.00	.00		
7			2.6	.71	1.3	4.4	.74	.00	.00	.00		
8			2.0	.64	1.4	4.9	.60	.00	.00	.00		
9			1.2	3.8	1.3	6.7	.46	.00	.00	.00		
10			1.1	2.4	1.2	7.2	.39	.00	.00	.00		
11			1.1	.92	1.2	5.7	.28	.00	.00	.00		
12			1.1	.71	.71	4.3	.25	.00	.00	.00		
13			1.2	.71	.85	3.4	.21	.00	.00	.00		
14			1.2	.60	1.3	2.6	.18	.00	.00	.00		
15			1.1	.60	1.1	2.2	.14	.00	.00	.00		
16			.99	.67	.81	1.9	.11	.00	.00	.00		
17			.99	.85	.57	1.7	.07	.00	.00	.00		
18			1.1	1.4	.46	1.5	.07	.00	.00	.00		
19			1.1	1.1	.39	1.4	.04	.00	.00	.00		
20			1.1	1.2	.35	1.2	.04	.00	.00	.00		
21			1.1	.92	.32	1.1	.04	.00	.00	.00		
22			1.2	2.5	.28	.99	.04	.00	.00	.00		
23			1.5	3.5	.21	1.0	.04	.00	.00	.00		
24			1.6	5.6	4.6	1.0	.00	.00	.00	.00		
25			1.6	2.9	17	1.0	.00	.00	.00	.00		
26			1.6	1.8	11	.88	.00	.00	.00	.00		
27			1.9	1.6	6.1	.74	.00	.00	.00	.00		
28			1.5	1.7	6.1	.60	.00	.00	.00	.00		
29			2.8	1.8	5.1	.53	.00	.00	.00	.00		
30			1.2	1.3	3.6	.42	.00	.00	.00	.00		
31			1.1	---	3.0	---	.00	.00	---	.00		
TOTAL			44.76	46.07	79.35	83.96	6.39	0.00	0.00	0.00		
MEAN			1.44	1.54	2.56	2.80	.21	.000	.000	.000		
MAX			2.8	5.6	17	7.2	.74	.00	.00	.00		
MIN			.74	.60	.21	.42	.00	.00	.00	.00		
AC-FT			89	91	157	167	13	.00	.00	.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1986 - 2000

MEAN	12.9	5.69	2.88	3.67	.76	.17	3.89	.67
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	.71	.83	.27	.001	.000	.000	.000	.000
(WY)	1998	1992	1992	1992	1990	1986	1987	1991

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1986 - 2000	
HIGHEST DAILY MEAN	7.2	Jun 10	724	Sep 26 1986
LOWEST DAILY MEAN	.00	Jul 24	.00	Feb 19 1986
INSTANTANEOUS PEAK FLOW	20	May 24	1190	Sep 25 1986
INSTANTANEOUS PEAK STAGE	4.68	May 24	9.81	Sep 25 1986

MILK RIVER BASIN

06144450 MIDDLE CREEK ABOVE LODGE CREEK, NEAR GOVENLOCK, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°06'01", long 109°49'02", in NE$^1/_4$ 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 above sea level, from topographic map. Prior to Mar. 1, 1962, nonrecording gage at site 1,000 ft downstream at different datum.

REMARKS.--Records good. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	.00	.00	.00	.00	.00		
2			.00	.00	.00	.00	.00	.00	.00	.00		
3			.00	.00	.00	.00	.00	.00	.00	.00		
4			.00	1.1	.00	.00	.00	.00	.00	.00		
5			.00	.28	.00	.00	.00	.00	.00	.00		
6			.00	.14	.00	.00	.00	.00	.00	.00		
7			.00	.04	.00	.00	.00	.00	.00	.00		
8			.00	.04	.00	.00	.00	.00	.00	.00		
9			.00	.04	.00	.00	.00	.00	.00	.00		
10			.00	.00	.00	.00	.00	.00	.00	.00		
11			.00	.00	.00	.00	.00	.00	.00	.00		
12			.00	.00	.00	.00	.00	.00	.00	.00		
13			.00	.00	.00	.00	.00	.00	.00	.00		
14			.00	.00	.00	.00	.00	.00	.00	.00		
15			.00	.00	.00	.00	.00	.00	.00	.00		
16			.00	.04	.00	.00	.00	.00	.00	.00		
17			.00	.04	.00	.00	.00	.00	.00	.00		
18			.00	.04	.00	.00	.00	.00	.00	.00		
19			.00	.04	.00	.00	.00	.00	.00	.00		
20			.00	.04	.00	.00	.00	.00	.00	.00		
21			.00	.04	.00	.00	.00	.00	.00	.00		
22			.00	.00	.00	.00	.00	.00	.00	.00		
23			.00	.00	.00	.00	.00	.00	.00	.00		
24			.00	.00	.00	.00	.00	.00	.00	.00		
25			.00	.00	.00	.00	.00	.00	.00	.00		
26			.00	.00	.00	.00	.00	.00	.00	.00		
27			.00	.00	.00	.00	.00	.00	.00	.00		
28			.00	.00	.00	.00	.00	.00	.00	.00		
29			.00	.00	.00	.00	.00	.00	.00	.00		
30			.00	.00	.00	.00	.00	.00	.00	.00		
31			.00		.00		.00	.00		.00		
TOTAL			0.00	1.88	0.00	0.00	0.00	0.00	0.00	0.00		
MEAN			.000	.063	.000	.000	.000	.000	.000	.000		
MAX			.00	1.1	.00	.00	.00	.00	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	3.7	.00	.00	.00	.00	.00	.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1911 - 2000*

MEAN	13.9	57.2	14.1	8.10	4.21	.57	2.80	.62
MAX	71.8	457	222	72.9	35.1	9.76	63.3	8.35
(WY)	1997	1917	1927	1962	1923	1915	1986	1987
MIN	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1919	1991	1989	1926	1914	1911	1912	1913

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1911 - 2000*	
HIGHEST DAILY MEAN	1.1	Apr 4	1330	Jun 14 1962
LOWEST DAILY MEAN	.00	Mar 1	.00	Mar 13 1911
INSTANTANEOUS PEAK FLOW	2.0	Apr 4	738	Sep 26 1986
INSTANTANEOUS PEAK STAGE	4.32	Apr 4	13.84	Sep 16 1986

*--For periods of operation.

MILK RIVER BASIN

06145500 LODGE CREEK BELOW MCRAE CREEK, AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'19", long 109°43'02", 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. Datum of gage is 2,731.0 ft above sea level (International Boundary Survey datum).

REMARKS.--Records excellent. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e.00	.00	.00	.00	.00	.00	.00	.00		
2			e.00	.00	.00	.00	.00	.00	.00	.00		
3			e.00	.00	.00	.00	.00	.00	.00	.00		
4			e.00	.00	.00	.00	.00	.00	.00	.00		
5			e.00	.00	.00	.00	.00	.00	.00	.00		
6			e.00	.00	.00	.00	.00	.00	.00	.00		
7			e.00	.00	.00	.00	.00	.00	.00	.00		
8			e.00	.00	.00	.00	.00	.00	.00	.00		
9			e.00	.00	.00	.00	.00	.00	.00	.00		
10			e.00	.00	.00	.00	.00	.00	.00	.00		
11			e.00	.00	.00	.00	.00	.00	.00	.00		
12			e.00	.00	.00	.00	.00	.00	.00	.00		
13			e.00	.00	.00	.00	.00	.00	.00	.00		
14			e.00	.00	.00	.00	.00	.00	.00	.00		
15			.00	.00	.00	.00	.00	.00	.00	.00		
16			.00	.00	.00	.00	.00	.00	.00	.00		
17			.00	.00	.00	.00	.00	.00	.00	.00		
18			.00	.00	.00	.00	.00	.00	.00	.00		
19			.00	.00	.00	.00	.00	.00	.00	.00		
20			.00	.00	.00	.00	.00	.00	.00	.00		
21			.00	.00	.00	.00	.00	.00	.00	.00		
22			.00	.00	.00	.00	.00	.00	.00	.00		
23			.00	.00	.00	.00	.00	.00	.00	.00		
24			.00	.00	.00	.00	.00	.00	.00	.00		
25			.00	.00	.00	.00	.00	.00	.00	.00		
26			.00	.00	.00	.00	.00	.00	.00	.00		
27			.00	.00	.00	.00	.00	.00	.00	.00		
28			.00	.00	.00	.00	.00	.00	.00	.00		
29			.00	.00	.00	.00	.00	.00	.00	.00		
30			.00	.00	.00	.00	.00	.00	.00	.00		
31			.00	---	.00	---	.00	.00	---	.00		
TOTAL			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
MEAN			.000	.000	.000	.000	.000	.000	.000	.000		
MAX			.00	.00	.00	.00	.00	.00	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	.00	.00	.00	.00	.00	.00	.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1952 - 2000

MEAN	56.6	145	41.8	24.8	10.4	1.86	14.5	1.53
MAX	374	1899	500	294	174	33.1	678	52.3
(WY)	1997	1952	1967	1965	1955	1993	1986	1987
MIN	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1992	1992	1963	1958	1954	1952	1953

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1952 - 2000	
HIGHEST DAILY MEAN	.00	Mar 1	7770	Sep 26 1986
LOWEST DAILY MEAN	.00	Mar 1	.00	Mar 1 1952
INSTANTANEOUS PEAK FLOW			a9890	Sep 25 1986
INSTANTANEOUS PEAK STAGE			16.36	Sep 25 1986

a--From rating curve extended above 4,100 ft^3/s on basis of slope-area measurement of peak flow.
e--Estimated.

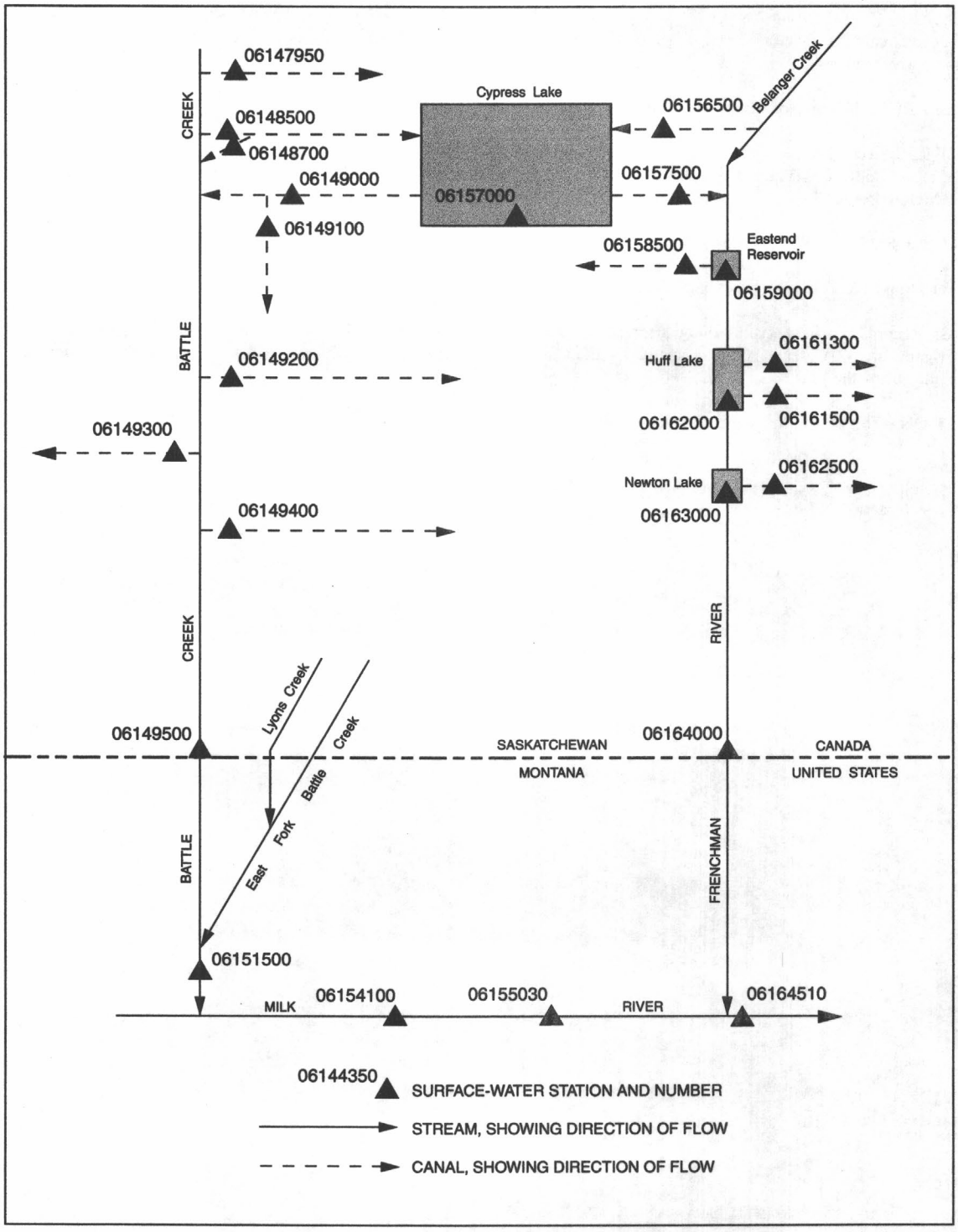


Figure 12. Schematic diagram showing diversions and storage in Battle Creek and Frenchman River Basins.

MILK RIVER BASIN

06147950 GAFF DITCH NEAR MERRYFLAT, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°26'05", long 109°50'07", 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 above sea level, from topographic map.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e.00	e.00	19	.04	.00	.04	.00	.00		
2			e.00	e.00	21	.04	.00	.04	.00	.00		
3			e.00	e.00	19	.04	.00	.04	.00	.00		
4			e.00	e.00	18	.04	.00	.04	.00	.00		
5			e.00	e1.8	16	.04	.00	.04	.00	.00		
6			e.00	e5.0	16	.04	.00	.04	.00	.00		
7			e.00	14	14	.04	.00	.04	.00	.00		
8			e.00	13	14	.04	.00	.04	.00	.00		
9			e.00	11	13	.04	.00	.04	.00	.00		
10			e.00	13	5.7	.04	.00	.04	.00	.00		
11			e.00	13	1.5	.04	.00	.04	.00	.00		
12			e.00	11	11	.04	.00	.04	.00	.00		
13			e.00	12	18	.04	.00	.04	.00	.00		
14			e.00	e12	22	10	.00	.04	.00	.00		
15			e.00	e11	23	14	.00	.04	.00	.00		
16			e.00	e11	23	15	.00	.04	.00	.00		
17			e.00	e11	22	18	.04	.04	.00	.00		
18			e.00	11	21	19	.04	.04	.00	.00		
19			e.00	12	19	17	.04	.00	.00	.00		
20			e.00	13	17	12	.04	.00	.00	.00		
21			e.00	21	16	10	.04	.00	.00	.00		
22			e.00	18	14	9.9	.04	.00	.00	.00		
23			e.00	19	12	8.1	.04	.00	.00	.00		
24			e.00	21	7.9	.74	.04	.00	.00	.00		
25			e.00	19	.88	.07	.04	.00	.00	.00		
26			e.00	18	.64	.04	.04	.00	.00	.00		
27			e.00	17	.42	.00	.04	.00	.00	.00		
28			e.00	22	.28	.00	.04	.00	.00	.00		
29			e.00	20	.14	.00	.04	.00	.00	.00		
30			e.00	19	.11	.00	.04	.00	.00	.00		
31			e.00	---	.04	---	.04	.00	---	.00		
TOTAL			0.00	368.80	385.61	134.37	0.60	0.72	0.00	0.00		
MEAN			.000	12.3	12.4	4.48	.019	.023	.000	.000		
MAX			.00	22	23	19	.04	.04	.00	.00		
MIN			.00	.00	.04	.00	.00	.00	.00	.00		
AC-FT			.00	732	765	267	1.2	1.4	.00	.00		

e--Estimated.

MILK RIVER BASIN

06148500 CYPRESS LAKE WEST INFLOW CANAL NEAR WEST PLAINS, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°28'18", long 109°37'08", 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 above sea level, from topographic map. Prior to Oct. 16, 1956, at site 2.3 mi upstream at different datum.

REMARKS.--Records good. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	.00	.11	.00	.00	.00		
2			.00	.00	.00	.00	.11	.00	.00	.00		
3			.00	.00	.00	.00	.18	.00	.00	.00		
4			.00	.00	.00	.00	.21	.00	.00	.00		
5			.00	.00	.00	.00	.14	.00	.00	.00		
6			.00	.00	.00	.00	.14	.00	.00	.00		
7			.00	.00	.00	.00	.14	.00	.00	.00		
8			.00	.00	.00	.00	.14	.00	.00	.00		
9			.00	.00	.00	.00	.14	.00	.00	.00		
10			.00	.00	.00	.00	.14	.00	.00	.00		
11			.00	.00	.00	.00	.14	.00	.00	.00		
12			.00	.00	.00	.00	.14	.00	.00	.00		
13			.00	.00	.00	.00	.14	.00	.00	.00		
14			.00	.00	.00	.00	.14	.00	.00	.00		
15			.00	.00	.00	.00	.14	.00	.00	.00		
16			.00	.00	.00	.00	.11	.00	.00	.00		
17			.00	.00	.00	.00	.11	.00	.00	.00		
18			.00	.00	.00	.04	.11	.00	.00	.00		
19			.00	.00	.00	.00	.14	.00	.00	.00		
20			.00	.00	.00	.00	.14	.00	.00	.00		
21			.00	.00	.00	.00	.14	.00	.00	.00		
22			.00	.00	.00	.07	.14	.00	.00	.00		
23			.00	.00	.00	.11	.11	.00	.00	.00		
24			.00	.00	.00	.11	.11	.00	.00	.00		
25			.00	.00	.00	.11	.14	.00	.00	.00		
26			.00	.00	.00	.11	.14	.00	.00	.00		
27			.00	.00	.00	.07	.14	.00	.00	.00		
28			.00	.00	.00	.07	.11	.00	.00	.00		
29			.00	.00	.00	.11	.11	.00	.00	.00		
30			.00	.00	.00	.11	.11	.00	.00	.00		
31			.00	---	.00	---	.07	.00	---	.00		
TOTAL			0.00	0.00	0.00	0.91	4.08	0.00	0.00	0.00		
MEAN			.000	.000	.000	.030	.13	.000	.000	.000		
MAX			.00	.00	.00	.11	.21	.00	.00	.00		
MIN			.00	.00	.00	.00	.07	.00	.00	.00		
AC-FT			.00	.00	.00	1.8	8.1	.00	.00	.00		

MILK RIVER BASIN

06148700 CYPRESS LAKE WEST INFLOW CANAL DRAIN NEAR OXARAT, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°28'25", long 109°36'38", 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 above sea level, from topographic map.

REMARKS.--Records fair. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	e.04	.00	.00	.04	.00	.00	.00		
2			.00	e.04	.00	.00	.04	.00	.00	.00		
3			.00	e.00	.00	.00	.04	.00	.00	.00		
4			.00	e.00	.00	.00	.04	.00	.00	.00		
5			.00	e.00	.00	.00	.04	.00	.00	.00		
6			.00	e.00	.00	.00	.04	.00	.00	.00		
7			e.07	e.00	.00	.00	.04	.00	.00	.00		
8			e.07	e.00	.00	.00	.04	.00	.00	.00		
9			e.07	e.00	.00	.00	.04	.00	.00	.00		
10			e.07	e.00	.00	.00	.00	.00	.00	.00		
11			e.07	e.00	.00	.00	.00	.00	.00	.00		
12			e.07	e.00	.00	.00	.00	.04	.00	.00		
13			e.07	e.00	.00	.00	.00	.04	.00	.00		
14			e.07	e.00	.00	.00	.00	.04	.00	.00		
15			e.04	e.00	.00	.00	.00	.04	.00	.00		
16			e.04	e.00	.00	.00	.00	.00	.00	.00		
17			e.04	e.00	.00	.00	.00	.00	.00	.00		
18			e.04	e.00	.00	.00	.00	.00	.00	.00		
19			e.07	.00	.00	.00	.00	.00	.00	.00		
20			e.07	.00	.00	.00	.00	.00	.00	.00		
21			e.04	.00	.00	.00	.00	.00	.00	.00		
22			e.04	.00	.00	.00	.00	.00	.00	.00		
23			e.07	.00	.00	.07	.00	.00	.00	.00		
24			e.07	.00	.00	.07	.00	.00	.00	.00		
25			e.07	.00	.00	.07	.00	.00	.00	.00		
26			e.11	.00	.00	.04	.00	.00	.00	.00		
27			e.11	.00	.00	.04	.00	.00	.00	.00		
28			e.07	.00	.00	.04	.00	.00	.00	.00		
29			e.07	.00	.00	.04	.00	.00	.00	.00		
30			e.04	.00	.00	.04	.00	.00	.00	.00		
31			e.04	---	.00	---	.00	.00	---	.00		
TOTAL			1.59	0.08	0.00	0.41	0.36	0.16	0.00	0.00		
MEAN			.051	.003	.000	.014	.012	.005	.000	.000		
MAX			.11	.04	.00	.07	.04	.04	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			3.2	.2	.00	.8	.7	.3	.00	.00		

e--Estimated.

MILK RIVER BASIN

06149000 CYPRESS LAKE WEST OUTFLOW CANAL NEAR WEST PLAINS, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°28'14", long 109°35'18", 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 above sea level, from topographic map. Prior to Sept. 18, 1952, at site 1 mi upstream and 300 ft downstream from Cypress Lake West Dam at different datum.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e.00	e.00	.00	61	.04	.00	.00	.00		
2			e.00	e.00	.00	49	.04	.00	.00	.00		
3			e.00	e.00	.00	50	.14	.00	.00	.00		
4			e.00	.00	.00	50	.11	.00	.00	.00		
5			e.00	.00	.00	50	.04	.00	.00	.00		
6			e.00	.00	.00	50	.07	.00	.00	.00		
7			e.00	.00	.00	38	.07	.00	.00	.00		
8			e.00	.00	.00	29	.04	.00	.00	.00		
9			e.00	.00	69	15	.07	.00	.00	.00		
10			e.00	.00	152	.49	3.3	.00	.00	.00		
11			e.00	.00	143	.07	3.5	.00	.00	.00		
12			e.00	.00	2.1	.00	3.4	.00	.00	.00		
13			e.00	.00	.49	.00	3.2	.00	.00	.00		
14			e.00	.00	.39	.00	3.0	.00	.00	.00		
15			e.00	.00	101	.00	2.1	.00	.00	.00		
16			e.00	.00	173	.00	.21	.00	.00	.00		
17			e.04	.00	167	.00	.00	.00	.00	.00		
18			e.04	.00	161	.00	.00	.00	.00	.00		
19			e.07	.00	158	.00	.00	.00	.00	.00		
20			e.07	.00	151	.00	.00	.00	.00	.00		
21			e.39	.00	146	.00	.00	.00	.00	.00		
22			e.42	.00	139	.00	.00	.00	.00	.00		
23			e.42	.00	138	.00	.00	.00	.00	.00		
24			e.35	.00	138	.00	.00	.00	.00	.00		
25			e.28	.00	135	.00	.00	.00	.00	.00		
26			e.18	.00	130	.00	.00	.00	.00	.00		
27			e.14	.00	122	.00	.00	.00	.00	.00		
28			e.14	.00	116	.00	.00	.00	.00	.00		
29			e.11	.00	123	.00	.00	.00	.00	.00		
30			e.07	.00	116	.00	.00	.00	.00	.00		
31			e.04		82		.00	.00		.00		
TOTAL			2.76	0.00	2662.98	392.56	19.33	0.00	0.00	0.00		
MEAN			.089	.000	85.9	13.1	.62	.000	.000	.000		
MAX			.42	.00	173	61	3.5	.00	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			5.5	.00	5280	779	38	.00	.00	.00		

e--Estimated.

MILK RIVER BASIN

06149100 VIDORA DITCH NEAR CONSUL, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°27'27", long 109°35'30", in SW$^1/_4$ 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 above sea level, from topographic map. Prior to Aug. 1, 1963, at datum 1.0 ft higher.

REMARKS.--Records fair. Canal diverts water from Cypress Lake west outflow canal in NE$^1/_4$ 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.

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 ft^3/s, May 26, 1988; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	47	.00	.00	.00	.00		
2			.00	.00	.00	50	.00	.00	.00	.00		
3			.00	.00	.00	53	.00	.00	.00	.00		
4			.00	.00	.00	52	.00	.00	.00	.00		
5			.00	.00	.00	52	.00	.00	.00	.00		
6			.00	.00	.00	50	.00	.00	.00	.00		
7			.00	.00	.00	38	.00	.00	.00	.00		
8			.00	.00	.00	29	.00	.00	.00	.00		
9			.00	.00	22	13	.00	.00	.00	.00		
10			.00	.00	52	.57	.21	.00	.00	.00		
11			.00	.00	49	.21	.60	.00	.00	.00		
12			.00	.00	1.8	.07	.49	.00	.00	.00		
13			.00	.00	.14	.00	.46	.00	.00	.00		
14			.00	.00	.04	.00	.46	.00	.00	.00		
15			.00	.00	32	.00	.42	.00	.00	.00		
16			.00	.00	58	.00	.32	.00	.00	.00		
17			.00	.00	56	.00	.07	.00	.00	.00		
18			.00	.00	56	.00	.00	.00	.00	.00		
19			.00	.00	57	.00	.00	.00	.00	.00		
20			.00	.00	54	.00	.00	.00	.00	.00		
21			.00	.00	51	.00	.00	.00	.00	.00		
22			.00	.00	49	.00	.00	.00	.00	.00		
23			.00	.00	50	.00	.00	.00	.00	.00		
24			.00	.00	50	.00	.00	.00	.00	.00		
25			.00	.00	49	.00	.00	.00	.00	.00		
26			.00	.00	48	.00	.00	.00	.00	.00		
27			.00	.00	45	.00	.00	.00	.00	.00		
28			.00	.00	43	.00	.00	.00	.00	.00		
29			.00	.00	46	.00	.00	.00	.00	.00		
30			.00	.00	49	.00	.00	.00	.00	.00		
31			.00	---	50	---	.00	.00	---	.00		
TOTAL			0.00	0.00	967.98	384.85	3.03	0.00	0.00	0.00		
MEAN			.000	.000	31.2	12.8	.098	.000	.000	.000		
MAX			.00	.00	58	53	.60	.00	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	.00	1920	763	6.0	.00	.00	.00		

MILK RIVER BASIN

06149200 RICHARDSON DITCH NEAR CONSUL, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°21'50", long 109°32'12", 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 datums. June 26, 1949, to Aug. 28, 1963, water-stage recorder at present site at datum 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.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	13	.00	.00	.00	.00		
2			.00	.00	.00	1.4	.00	.00	.00	.00		
3			.00	.00	.00	1.2	.00	.00	.00	.00		
4			.00	.00	.00	.92	.00	.00	.00	.00		
5			.00	.00	.00	.32	.00	.00	.00	.00		
6			.00	.00	.00	.00	.00	.00	.00	.00		
7			.00	.00	.00	.00	.00	.00	.00	.00		
8			.00	.00	.00	.71	.00	.00	.00	.00		
9			.00	.00	.00	.21	.00	.00	.00	.00		
10			.00	.00	45	.00	.00	.00	.00	.00		
11			.00	.00	50	.00	.00	.00	.00	.00		
12			.00	.00	2.3	.00	.00	.00	.00	.00		
13			.00	.00	1.4	.00	.00	.00	.00	.00		
14			.00	.00	1.2	.00	.00	.00	.00	.00		
15			.00	.00	1.2	.00	.00	.00	.00	.00		
16			.00	.00	47	.00	.00	.00	.00	.00		
17			.00	.00	58	.00	.00	.00	.00	.00		
18			.00	.00	65	.00	.00	.00	.00	.00		
19			.00	.00	65	.00	.00	.00	.00	.00		
20			.00	.00	64	.00	.00	.00	.00	.00		
21			.00	.00	62	.00	.00	.00	.00	.00		
22			.00	.00	53	.00	.00	.00	.00	.00		
23			.00	.00	51	.00	.00	.00	.00	.00		
24			.00	.00	50	.00	.00	.00	.00	.00		
25			.00	.00	51	.00	.00	.00	.00	.00		
26			.00	.00	50	.00	.00	.00	.00	.00		
27			.00	.00	48	.00	.00	.00	.00	.00		
28			.00	.00	38	.00	.00	.00	.00	.00		
29			.00	.00	36	.00	.00	.00	.00	.00		
30			.00	.00	27	.00	.00	.00	.00	.00		
31			.00	---	17	---	.00	.00	---	.00		
TOTAL			0.00	0.00	883.10	17.76	0.00	0.00	0.00	0.00		
MEAN			.000	.000	28.5	.59	.000	.000	.000	.000		
MAX			.00	.00	65	13	.00	.00	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	.00	1750	35	.00	.00	.00	.00		

MILK RIVER BASIN

06149300 MCKINNON DITCH NEAR CONSUL, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°20'00", long 109°29'40", in NW$^1/_4$ 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 datums. Sept. 4, 1949, to Aug. 29, 1963, water-stage recorder at present site at datum 1.00 ft higher.

REMARKS.--Records fair. Ditch diverts from right bank of Battle Creek in NE$^1/_4$ sec.30, T.4, R.26 W., third meridian, for irrigation of about 1,320 acres along Battle Creek.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	19	.00	.00	.00	.00		
2			.00	.00	.00	7.7	.00	.00	.00	.00		
3			.00	.00	.00	.28	.00	.00	.00	.00		
4			.00	.00	.00	.14	.00	.00	.00	.00		
5			.00	.00	.00	.04	.00	.00	.00	.00		
6			.00	.00	.00	.00	.00	.00	.00	.00		
7			.00	.00	.00	.00	.00	.00	.00	.00		
8			.00	.00	.00	.00	.00	.00	.00	.00		
9			.00	.00	.00	.00	.00	.00	.00	.00		
10			.00	.00	.00	.00	.00	.00	.00	.00		
11			.00	.00	28	.00	.00	.00	.00	.00		
12			.00	.00	2.7	.00	.00	.00	.00	.00		
13			.00	.00	.21	.00	.00	.00	.00	.00		
14			.00	.00	.00	.00	.00	.00	.00	.00		
15			.00	.00	.00	.00	.00	.00	.00	.00		
16			.00	.00	32	.00	.00	.00	.00	.00		
17			.00	.00	47	.00	.00	.00	.00	.00		
18			.00	.00	44	.00	.00	.00	.00	.00		
19			.00	.00	41	.00	.00	.00	.00	.00		
20			.00	.00	39	.00	.00	.00	.00	.00		
21			.00	.00	38	.00	.00	.00	.00	.00		
22			.00	.00	38	.00	.00	.00	.00	.00		
23			.00	.00	42	.00	.00	.00	.00	.00		
24			.00	.00	44	.00	.00	.00	.00	.00		
25			.00	.00	44	.00	.00	.00	.00	.00		
26			.00	.00	41	.00	.00	.00	.00	.00		
27			.00	.00	36	.00	.00	.00	.00	.00		
28			.00	.00	36	.00	.00	.00	.00	.00		
29			.00	.00	37	.00	.00	.00	.00	.00		
30			.00	.00	36	.00	.00	.00	.00	.00		
31			.00	---	32	---	.00	.00	---	.00		
TOTAL			0.00	0.00	657.91	27.16	0.00	0.00	0.00	0.00		
MEAN			.000	.000	21.2	.91	.000	.000	.000	.000		
MAX			.00	.00	47	19	.00	.00	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	.00	1300	54	.00	.00	.00	.00		

MILK RIVER BASIN

06149400 NASHLYN CANAL NEAR CONSUL, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°13'57", long 109°33'27", 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 datums.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			6.7	20	.25	.04	.00	.00	.00	.00		
2			8.9	20	.11	.00	.00	.00	.00	.00		
3			8.8	20	.07	.00	.00	.00	.00	.00		
4			9.6	21	.04	.00	.00	.00	.00	.00		
5			15	20	.00	.00	.00	.00	.00	.00		
6			18	19	.00	.00	.00	.00	.00	.00		
7			18	17	.00	.00	.00	.00	.00	.00		
8			18	16	.00	.00	.00	.00	.00	.00		
9			20	16	.00	.00	.00	.00	.00	.00		
10			18	17	.00	.00	.00	.00	.00	.00		
11			17	15	.00	.00	.00	.00	.00	.00		
12			17	10	11	.00	.00	.00	.00	.00		
13			17	4.9	29	.00	.00	.00	.00	.00		
14			e15	3.3	16	.00	.00	.00	.00	.00		
15			e14	2.9	6.2	.00	.00	.00	.00	.00		
16			e15	2.6	5.1	.00	.00	.00	.00	.00		
17			15	4.8	11	.00	.00	.00	.00	.00		
18			15	14	9.4	.00	.00	.00	.00	.00		
19			15	9.5	11	.00	.00	.00	.00	.00		
20			16	11	9.8	.00	.00	.00	.00	.00		
21			16	12	14	.00	.00	.00	.00	.00		
22			16	16	22	.00	.00	.00	.00	.00		
23			17	16	36	.00	.00	.00	.00	.00		
24			19	15	34	.00	.00	.00	.00	.00		
25			18	15	30	.00	.00	.00	.00	.00		
26			18	12	3.8	.00	.00	.00	.00	.00		
27			19	10	.46	.00	.00	.00	.00	.00		
28			22	6.5	.25	.00	.00	.00	.00	.00		
29			22	1.4	.11	.00	.00	.00	.00	.00		
30			21	.49	.04	.00	.00	.00	.00	.00		
31			20	---	.04	---	.00	.00	---	.00		
TOTAL			505.0	368.39	249.67	0.04	0.00	0.00	0.00	0.00		
MEAN			16.3	12.3	8.05	.001	.000	.000	.000	.000		
MAX			22	21	36	.04	.00	.00	.00	.00		
MIN			6.7	.49	.00	.00	.00	.00	.00	.00		
AC-FT			1000	731	495	.08	.00	.00	.00	.00		

e--Estimated.

MILK RIVER BASIN

06149500 BATTLE CREEK AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'07", long 109°25'18", in SE$^1/_4$ 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. Datum of gage is 2,729.8 ft above sea level (International Boundary Survey datum, adjustment of 1928).

REMARKS.--Records good. 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, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			15	11	1.3	48	.88	1.2	.00	.00		
2			14	9.9	.95	44	1.6	1.5	.00	.00		
3			9.7	6.1	.78	41	3.1	1.6	.00	.00		
4			8.1	5.9	.78	31	4.0	1.3	.00	.00		
5			8.3	4.7	1.6	25	3.2	1.2	.00	.00		
6			8.1	6.3	5.5	26	3.0	.92	.00	.00		
7			6.8	4.6	4.9	22	2.9	.71	.00	.00		
8			5.5	3.5	4.3	19	6.1	.57	.00	.00		
9			4.2	2.8	4.5	17	9.5	.46	.00	.00		
10			4.2	2.6	4.1	14	9.9	.39	.00	.00		
11			3.4	3.2	4.8	19	7.9	.32	.00	.00		
12			3.2	11	6.8	17	6.5	.28	.00	.00		
13			3.1	10	7.6	14	5.0	.21	.00	.00		
14			2.8	7.7	18	16	5.0	.18	.00	.00		
15			2.6	6.2	11	13	4.0	.14	.00	.00		
16			2.7	4.9	10	11	4.4	.11	.00	.00		
17			2.2	3.7	5.6	13	5.4	.07	.00	.00		
18			2.5	3.8	3.5	13	7.0	.04	.00	.00		
19			3.5	3.6	2.6	11	9.0	.04	.00	.00		
20			2.9	3.4	1.8	9.7	12	.00	.00	.00		
21			2.9	3.4	1.1	8.8	10	.00	.00	.00		
22			3.6	3.2	.81	8.1	6.5	.00	.00	.00		
23			4.9	3.2	.57	8.1	5.5	.00	.00	.00		
24			5.3	4.0	.46	5.8	4.6	.00	.00	.00		
25			5.5	3.1	13	4.2	3.7	.00	.00	.00		
26			e7.8	2.1	13	3.5	2.6	.00	.00	.00		
27			9.4	1.4	9.1	3.0	1.6	.00	.00	.00		
28			e8.8	1.8	19	2.5	1.2	.00	.00	.00		
29			9.7	2.6	23	1.8	.85	.00	.00	.00		
30			9.7	1.8	30	1.2	.74	.00	.00	.00		
31			8.5	---	43	---	.88	.00	---	4.6		
TOTAL			188.9	141.5	253.45	470.7	148.55	11.24	0.00	4.60		
MEAN			6.09	4.72	8.18	15.7	4.79	.36	.000	.15		
MAX			15	11	43	48	12	1.6	.00	4.6		
MIN			2.2	1.4	.46	1.2	.74	.00	.00	.00		
AC-FT			375	281	503	934	295	22	.00	9.1		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1917 - 2000

MEAN	50.7	130	59.2	32.4	17.0	6.98	7.89	8.00
MAX	353	1526	538	261	250	50.7	332	57.7
(WY)	1997	1952	1927	1927	1955	1975	1986	1987
MIN	.000	4.34	.77	.000	.000	.000	.000	.000
(WY)	1936	1981	1937	1937	1919	1919	1919	1920

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1917 - 2000	
HIGHEST DAILY MEAN	48	Jun 1	5590	1952
LOWEST DAILY MEAN	.00	Aug 20	.00	Mar 1 1918
INSTANTANEOUS PEAK FLOW	53	Jun 1	a9780	Sep 25 1986
INSTANTANEOUS PEAK STAGE	4.19	Jun 1	11.57	Sep 25 1986

a--From rating table extended above 4,400 ft^3/s on basis of slope-area measurement of peak flow.
e--Estimated.

MILK RIVER BASIN

06151500 BATTLE CREEK NEAR CHINOOK, MT

LOCATION.--Lat 48°39'05", long 109°13'47", in NW$^1/_4$SW$^1/_4$NE$^1/_4$ 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 above sea level, from topographic map. 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 datum but different from present datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e3.0	7.4	.05	.23	8.4	6.1	.22			
2			e3.0	8.6	.05	.18	8.2	10	.26			
3			e3.0	8.5	.03	17	8.3	8.1	.26			
4			e3.0	8.9	.03	13	475	4.2	.25			
5			e3.0	8.6	.36	7.8	260	.40	.29			
6			e3.0	6.9	12	4.4	313	.29	.32			
7			e3.0	4.1	2.6	2.4	347	.28	.24			
8			e3.0	1.5	2.6	6.7	99	.28	.22			
9			e3.0	.82	3.1	11	56	.25	.21			
10			e3.0	.49	4.5	5.4	32	.24	.21			
11			e3.0	.49	5.7	14	19	.26	.23			
12			e3.0	.40	.18	12	15	.25	.24			
13			e3.0	.27	.08	8.8	9.1	.24	.25			
14			e3.5	.29	.00	1.8	8.3	.24	.24			
15			e4.0	.24	.00	1.9	14	.24	.23			
16			e4.0	.20	.00	2.2	9.1	.23	.24			
17			e4.0	6.5	.00	1.9	7.0	.22	.23			
18			e4.0	5.2	.00	1.8	6.6	.21	.23			
19			e4.0	3.5	.00	2.7	6.4	.21	.28			
20			e4.0	1.8	.15	2.6	15	.21	.28			
21			e4.5	.88	1.6	4.0	11	.21	.41			
22			e5.0	.52	2.7	8.6	5.6	.21	.32			
23			e5.0	.47	5.6	7.0	9.2	.20	.31			
24			e5.0	.27	8.0	9.9	8.8	.21	.31			
25			e5.0	.21	7.1	12	7.5	.24	.32			
26			e5.0	.18	.47	13	5.1	.27	.32			
27			e5.0	.15	.42	12	4.7	.27	.28			
28			4.8	.14	1.3	8.7	4.4	.27	1.1			
29			4.6	.11	4.9	7.2	4.2	.27	18			
30			5.1	.09	.30	8.4	4.0	.27	4.3			
31			7.5	---	.16	---	3.9	.24	---			
TOTAL			123.0	77.72	63.98	208.61	1784.8	35.11	30.60			
MEAN			3.97	2.59	2.06	6.95	57.6	1.13	1.02			
MAX			7.5	8.9	12	17	475	10	18			
MIN			3.0	.09	.00	.18	3.9	.20	.21			
AC-FT			244	154	127	414	3540	70	61			

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1984 - 2000

MEAN	15.4	67.9	26.8	20.5	13.3	2.07	56.4
MAX	54.8	539	101	43.7	57.6	10.6	910
(WY)	1999	1996	1986	1996	2000	1993	1986
MIN	3.97	.49	2.06	.085	.016	.000	.000
(WY)	2000	1985	2000	1984	1984	1984	1984

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1984 - 2000	
HIGHEST DAILY MEAN	475	Jul 4	12000	Sep 26 1986
LOWEST DAILY MEAN	.00	May 14	.00	Jul 12 1984
INSTANTANEOUS PEAK FLOW	975	Jul 4	19400	Sep 26 1986
INSTANTANEOUS PEAK STAGE	6.46	Jul 4	22.91	Sep 26 1986

e--Estimated.

MILK RIVER BASIN

06154100 MILK RIVER NEAR HARLEM, MT

LOCATION.--Lat 48°29'22", long 108°45'28", in $NE^1/_4SE^1/_4NE^1/_4$ 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. Datum of gage is 2,319.48 ft above sea level. Apr. 3-25, 1952, nonrecording gage on old bridge 200 ft downstream at different datum. 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 datum.

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 datum.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e100	84	78	562	307	359	44	55		
2			e100	86	189	647	388	333	40	55		
3			e100	82	225	562	405	350	36	55		
4			e100	81	321	430	610	381	63	52		
5			e100	79	463	408	853	382	76	50		
6			e100	78	539	400	1040	402	78	51		
7			e100	78	546	388	1100	414	88	53		
8			e100	77	491	369	808	408	89	55		
9			e100	66	454	383	384	381	71	56		
10			e110	68	453	394	281	363	62	58		
11			e120	68	486	405	270	358	58	61		
12			e120	66	591	371	196	308	57	63		
13			e120	65	673	360	169	245	55	64		
14			e120	68	613	346	187	151	53	64		
15			109	69	518	348	189	82	56	67		
16			118	69	483	357	219	73	55	161		
17			e120	72	419	364	321	65	57	246		
18			e120	77	392	320	297	45	58	261		
19			e115	82	397	284	254	39	57	268		
20			e105	77	369	257	351	39	57	255		
21			102	76	376	255	309	39	61	262		
22			98	76	412	254	368	56	64	272		
23			95	79	405	259	395	59	66	272		
24			92	75	380	261	377	61	69	270		
25			90	71	352	241	359	61	71	271		
26			88	68	348	245	331	58	65	272		
27			85	67	435	236	415	52	62	277		
28			83	63	494	253	521	48	60	274		
29			83	63	489	256	506	47	59	234		
30			84	61	499	247	447	46	58	183		
31			83	---	487	---	383	45	---	117		
TOTAL			3160	2191	13377	10462	13040	5750	1845	4754		
MEAN			102	73.0	432	349	421	185	61.5	153		
MAX			120	86	673	647	1100	414	89	277		
MIN			83	61	78	236	169	39	36	50		
AC-FT			6270	4350	26530	20750	25860	11410	3660	9430		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1993 AND SEASONS 1994-2000*

MEAN	216	94.4	71.8	69.4	84.5	463	608	693	589	591	405	361
MAX	949	289	198	139	200	2287	2935	3506	1506	2484	726	1913
(WY)	1987	1987	1987	1990	1987	1996	1965	1967	1965	1965	1965	1986
MIN	37.4	31.2	25.9	19.0	26.5	46.8	54.4	278	232	165	10.3	20.9
(WY)	1989	1964	1985	1985	1985	1964	1961	1963	1985	1984	1988	1988

SUMMARY STATISTICS	FOR 2000 SEASON		WATER YEARS 1960 - 1993*		SEASONS 1994 - 2000*	
ANNUAL MEAN			349			
HIGHEST ANNUAL MEAN			857	1965		
LOWEST ANNUAL MEAN			139	1984		
HIGHEST DAILY MEAN	1100	Jul 7	12900	Sep 29 1986	6190	Mar 18 1996
LOWEST DAILY MEAN	36	Sep 3	a.00	Aug 10 1988	20	Oct 22 1999
ANNUAL SEVEN-DAY MINIMUM			.00	Aug 28 1988		
INSTANTANEOUS PEAK FLOW	1360	Jul 6	13900	Sep 29 1986	6450	Mar 18 1996
INSTANTANEOUS PEAK STAGE	11.82	Jul 6	25.73	Sep 29 1986	23.88	Mar 18 1996
INSTANTANEOUS LOW FLOW			.00	Aug 1 1988		
ANNUAL RUNOFF (AC-FT)			253200			
10 PERCENT EXCEEDS			682			
50 PERCENT EXCEEDS			180			
90 PERCENT EXCEEDS			39			

*--During period of operation (1960-69, 1983 to current year. Seasonal record station beginning 1994 water year).
a--No flow on many days in August and September 1988.
e--Estimated.

MILK RIVER BASIN

06154400 PEOPLES CREEK NEAR HAYS, MT

LOCATION.--Lat 48°13'25", long 108°42'48", 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. Datum of gage is 2,714.10 ft above sea level.
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 of station. Bureau of Indian Affairs 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.05	e1.0	e.75	e.20	e5.0	e2.0	.56	.62	.12	.02	.09
2	.04	.05	e1.0	e.50	e.20	e6.0	e2.0	.33	.84	.15	.05	.08
3	.04	.05	e1.0	e.40	e.20	e7.0	e2.0	.40	1.1	.18	.07	.05
4	.05	.04	e1.0	e.40	e.20	e6.0	e2.0	.60	1.6	.10	.09	.06
5	.05	.06	e1.0	e.50	e.20	e6.0	2.0	.96	2.3	.10	.10	.04
6	.05	.05	e1.0	e.50	e.20	e4.5	2.3	1.5	2.0	.14	.11	.04
7	.04	.06	e1.0	e.50	e.20	e3.5	1.8	1.2	1.6	.11	.11	.03
8	.04	.05	e1.0	e.50	e.20	e3.5	1.7	1.1	2.0	.10	.10	.01
9	.04	.06	e1.0	e.50	e.20	e3.5	1.3	.57	1.2	.10	.10	.01
10	.04	.06	e1.0	e.50	e.20	e2.5	1.0	.74	.55	.06	.11	.00
11	.04	.06	e1.0	e.40	e.20	e2.5	.71	4.2	.34	.06	.10	.01
12	.03	.05	e1.0	e.30	e.20	2.2	.85	9.2	.21	.03	.13	.01
13	.02	.06	e1.0	e.30	e.20	2.1	.79	12	.13	.04	.13	.01
14	.02	.06	e.75	e.30	e.20	2.1	1.2	10	.08	.03	.16	.00
15	.02	.06	e.75	e.30	e.20	1.5	1.7	14	.07	.03	.16	.00
16	.02	.06	e.75	e.30	e.20	1.0	2.2	11	.08	.03	.16	.00
17	.02	.07	e.75	e.30	e.20	1.5	2.0	8.7	.12	.04	.17	.00
18	.02	.06	e.65	e.30	e.20	1.9	2.3	7.8	.05	.03	.20	.00
19	.02	.06	e.65	e.30	e.20	2.3	1.5	7.3	.06	9.3	.18	.00
20	.02	.05	e.75	e.30	e.50	2.5	.92	6.1	.05	6.1	.19	.00
21	.03	.05	e.75	e.30	e1.0	2.4	.76	4.7	.06	.08	.20	.01
22	.03	.06	e.75	e.30	e1.5	1.8	.72	3.5	.06	.01	.18	.00
23	.03	.05	e.75	e.20	e1.0	1.8	2.3	2.2	.06	.00	.18	.00
24	.03	.05	e.75	e.20	e2.0	1.6	1.9	1.4	.07	.00	.19	.00
25	.03	e.03	e.75	e.10	e1.5	1.5	1.8	.93	.09	.00	.17	.01
26	.02	e.05	e.75	e.20	e1.0	1.3	1.6	.86	.11	.00	.15	.00
27	.03	e.10	e1.0	e.20	e2.0	1.9	1.4	.74	.10	.00	.16	.00
28	.03	e.10	e1.0	e.20	e3.0	1.8	1.1	.41	.09	.00	.14	.00
29	.02	e.50	e1.0	e.20	e4.5	2.0	.89	.24	.09	.00	.12	.00
30	.03	e1.0	e.75	e.20	---	2.1	.96	.16	.10	.00	.11	.00
31	.02	---	e.75	e.20	---	e2.0	---	.23	---	.00	.11	---
TOTAL	0.96	3.11	27.05	10.45	21.80	87.3	45.70	113.63	15.83	16.94	4.15	0.46
MEAN	.031	.10	.87	.34	.75	2.82	1.52	3.67	.53	.55	.13	.015
MAX	.05	1.0	1.0	.75	4.5	7.0	2.3	14	2.3	9.3	.20	.09
MIN	.02	.03	.65	.10	.20	1.0	.71	.16	.05	.00	.02	.00
AC-FT	1.9	6.2	54	21	43	173	91	225	31	34	8.2	.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2000, BY WATER YEAR (WY)

MEAN	3.73	3.62	2.95	3.77	9.81	30.5	19.0	32.4	22.4	8.92	2.56	3.92
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	.000	.000	.000	.000	.000	.51	.48	.019	.040	.000	.000	.000
(WY)	1972	1972	1972	1972	1998	1998	1991	1998	1988	1972	1967	1969

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1967 - 2000	
ANNUAL TOTAL	764.87		347.38			
ANNUAL MEAN	2.10		.95		11.8*	
HIGHEST ANNUAL MEAN					47.8	1979
LOWEST ANNUAL MEAN					.46	1998
HIGHEST DAILY MEAN	37	Jun 10	14	May 15	1000	Mar 7 1979
LOWEST DAILY MEAN	.00	Jul 16	.00	Jul 23	.00	Dec 1 1966
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 25	.00	Jul 23	.00	Dec 1 1966
INSTANTANEOUS PEAK FLOW			146	Jul 19	a8460	Jun 8 1972
INSTANTANEOUS PEAK STAGE			5.39	Jul 19	15.03	Jun 8 1972
INSTANTANEOUS LOW FLOW					b.00	Jan 2 1995
ANNUAL RUNOFF (AC-FT)	1520		689		8560	
10 PERCENT EXCEEDS	5.4		2.2		24	
50 PERCENT EXCEEDS	.70		.20		1.8	
90 PERCENT EXCEEDS	.02		.02		.00	

*--Median of yearly mean discharge, 6.17 ft^3/s, 4,850 ac-ft/yr.
a--From floodmark, from rating curve extended above 490 ft^3/s, on basis of slope-area measurement of peak flow.
b--No flow at times most years.
e--Estimated.

MILK RIVER BASIN

06154410 LITTLE PEOPLES CREEK NEAR HAYS, MT

LOCATION.--Lat 47°57'58", long 108°39'36", in $SE^1/_4SE^1/_4NW^1/_4$ 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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1972 to current year.
REVISED RECORDS.--WDR MT-81-1: Drainage area.
GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3,769.72 ft above sea level. August 1972 to June 24, 1976, gage at former site at datum 10.00 ft higher. Prior to Apr. 22, 1987, gage located 330 ft downstream.
REMARKS.--Water-discharge records fair. No known regulation or diversion upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.6	1.6	1.4	1.5	1.4	1.5	1.4	2.3	1.7	1.2	1.3
2	1.8	1.6	1.6	1.4	1.5	1.4	1.5	1.4	2.2	1.7	1.2	1.3
3	1.8	1.6	1.6	1.4	1.5	1.4	1.5	1.4	2.2	1.8	1.2	1.3
4	1.8	1.6	1.6	1.4	1.5	1.4	1.6	1.4	2.2	1.7	1.2	1.4
5	1.8	1.6	1.6	1.4	1.5	1.5	1.5	1.4	2.1	1.6	1.2	1.3
6	1.8	1.6	1.6	1.4	1.5	1.5	1.4	1.4	2.1	1.6	1.2	1.3
7	1.8	1.6	1.6	1.5	1.5	1.5	1.4	1.4	2.1	1.5	1.2	1.3
8	1.8	1.6	1.6	1.5	1.5	1.5	1.5	1.3	2.2	1.5	1.3	1.3
9	1.8	1.6	1.6	1.5	1.5	1.5	1.5	1.4	2.2	1.5	1.3	1.3
10	1.8	1.6	1.5	1.4	1.5	1.5	1.4	1.4	2.2	1.6	1.3	1.3
11	1.8	1.6	1.5	1.4	1.5	1.6	1.5	1.7	2.1	1.5	1.3	1.3
12	1.8	1.6	1.5	1.4	1.5	1.6	1.5	1.7	2.1	1.5	1.2	1.3
13	1.9	1.6	1.5	1.4	1.5	1.6	1.5	1.7	2.1	1.4	1.2	1.3
14	1.8	1.6	1.5	1.4	1.5	1.6	1.5	1.7	2.0	1.4	1.2	1.3
15	1.8	1.6	1.5	1.4	1.5	1.6	1.5	1.5	2.0	1.4	1.2	1.3
16	1.8	1.7	1.6	1.4	1.5	1.6	1.6	1.5	2.0	1.4	1.2	1.3
17	1.8	1.7	1.5	1.4	1.5	1.6	1.6	1.5	1.9	1.4	1.2	1.3
18	1.8	1.7	1.5	1.4	1.5	1.6	1.5	1.6	1.8	1.3	1.2	1.3
19	1.8	1.6	1.5	1.5	1.5	1.6	1.5	1.7	1.8	1.3	1.2	1.3
20	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.8	1.8	1.3	1.2	1.3
21	1.7	1.6	1.5	1.5	1.4	1.6	1.5	2.0	1.8	1.3	1.2	1.5
22	1.6	1.6	1.5	1.5	1.4	1.6	1.4	2.4	1.8	1.3	1.2	1.7
23	1.6	1.6	1.5	1.5	1.4	1.6	1.5	2.7	1.9	1.3	1.2	1.8
24	1.6	1.6	1.5	1.5	1.4	1.6	1.4	2.8	1.8	1.2	1.2	1.6
25	1.6	1.6	1.5	1.5	1.4	1.6	1.4	2.8	1.8	1.2	1.2	1.4
26	1.6	1.6	1.4	1.5	1.4	1.5	1.4	2.6	1.8	1.2	1.2	1.4
27	1.6	1.6	1.4	1.5	1.4	1.5	1.4	2.4	1.8	1.2	1.2	1.4
28	1.7	1.5	1.4	1.5	1.4	1.5	1.4	2.4	1.8	1.2	1.2	1.3
29	1.6	1.6	1.4	1.5	1.4	1.5	1.5	2.3	1.7	1.2	1.2	1.4
30	1.6	1.6	1.4	1.5	---	1.5	1.4	2.3	1.7	1.2	1.3	1.5
31	1.7	---	1.4	1.5	---	1.5	---	2.3	---	1.3	1.3	---
TOTAL	53.9	48.2	46.9	45.0	42.6	47.5	44.3	57.3	59.3	43.7	37.8	41.1
MEAN	1.74	1.61	1.51	1.45	1.47	1.53	1.48	1.85	1.98	1.41	1.22	1.37
MAX	1.9	1.7	1.6	1.5	1.5	1.6	1.6	2.8	2.3	1.8	1.3	1.8
MIN	1.6	1.5	1.4	1.4	1.4	1.4	1.4	1.3	1.7	1.2	1.2	1.3
AC-FT	107	96	93	89	84	94	88	114	118	87	75	82

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2000, BY WATER YEAR (WY)

MEAN	2.46	2.26	2.09	1.97	1.86	2.41	4.79	12.9	8.59	5.61	3.01	2.68
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	1.43	1.31	1.12	1.00	.95	1.09	1.48	1.62	1.98	1.41	1.22	1.37
(WY)	1985	1997	1998	1998	1997	1985	2000	1992	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1972 - 2000	
ANNUAL TOTAL	1167.4		567.6			
ANNUAL MEAN	3.20		1.55		4.23*	
HIGHEST ANNUAL MEAN					11.6	1974
LOWEST ANNUAL MEAN					1.55	2000
HIGHEST DAILY MEAN	27	May 15	2.8	May 24	500	May 25 1974
LOWEST DAILY MEAN	1.1	Feb 12	1.2	Jul 24	.67	May 21 1997
ANNUAL SEVEN-DAY MINIMUM	1.1	Feb 17	1.2	Jul 24	.76	May 18 1997
INSTANTANEOUS PEAK FLOW			4.4	Jul 3	a576	May 25 1974
INSTANTANEOUS PEAK STAGE			.64	Jul 3	b4.57	May 25 1974
ANNUAL RUNOFF (AC-FT)	2320		1130		3070	
10 PERCENT EXCEEDS	7.7		1.8		7.0	
50 PERCENT EXCEEDS	1.6		1.5		2.3	
90 PERCENT EXCEEDS	1.2		1.3		1.4	

*--Median of yearly mean discharge, 3.36 ft^3/s.
a--From rating curve extended above 44 ft^3/s, on basis of slope-area measurement of peak flow.
b--From floodmark, at site and datum then in use.

MILK RIVER BASIN

06154410 LITTLE PEOPLES CREEK NEAR HAYS, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance for many days are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT 1999												
07...	1030	1.8	8.3	466	8.0	9.0	250	63	22	1.6	.1	2.9
MAR 2000												
28...	1015	1.3	8.4	469	8.0	7.0	240	60	22	1.4	.1	3.1
MAY												
15...	1030	1.5	8.4	479	17.0	11.0	250	65	22	1.7	.1	3.4
AUG												
15...	1145	1.2	8.4	475	25.0	13.5	250	63	22	1.7	.1	2.9

DATE	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 1999												
07...	231	.5	.3	11	32	272	.37	1.28	<.01	<.05	<.02	<.01
MAR 2000												
28...	223	.7	.3	11	33	266	.36	.93	<.01	<.05	<.02	<.01
MAY												
15...	223	1	.4	10	42	280	.38	1.13	<.01	<.05	<.02	<.01
AUG												
15...	212	.5	.3	11	39	267	.36	.84	<.01	<.05	<.02	<.01

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999											
07...	E1	<.1	E1	E1	E16	<1	<2	<31	5	.02	59
MAR 2000											
28...	E2	<.1	<1	<1	24	<1	<2	<31	44	.15	61
MAY											
15...	<3	<.1	<1	<1	25	<1	<2	<31	26	.11	73
AUG											
15...	E1	<.1	<1	<1	<21	<1	<2	<31	22	.07	60

E--Estimated.

MILK RIVER BASIN

06154430 LODGE POLE CREEK AT LODGE POLE, MT

LOCATION.--Lat 48°01'52", long 108°31'55", in $SE^1/_4SE^1/_4SW^1/_4$ sec. 5, T.26 N., R.25 E., Blaine County, Hydrologic Unit 10050009, Fort Belknap Indian Reservation, 10 ft upstream of culvert in county road just south of Lodge Pole and 8 mi northeast of Hays.
DRAINAGE AREA.--19.5 mi^2.
PERIOD OF RECORD.--March 1987 to October 2000 (discontinued).
GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,420 ft above sea level, from topographic map.
REMARKS.--Records poor. No known diversion for irrigation upstream of station. Several observations of water temperature and specific conductance were made during the year.
EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 390 ft^3/s, Sept. 25, 1986, gage height, 6.84 ft, from floodmark, by computation of peak flow through culvert.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.2	.96	.75	e.70	.48	e.30	e.30	e.30	e.30	e.30	e.30
2	1.1	1.2	.96	.68	e.70	.31	e.30	e.30	e.30	e.30	e.30	e.30
3	1.0	1.2	.96	.68	e.70	.30	e.30	e.30	e.30	e.30	e.30	e.30
4	1.1	1.2	.96	.71	e.70	.32	e.30	e.30	e.30	e.30	e.30	e.30
5	1.5	1.2	.94	.75	e.70	e.30	e.30	e.30	e.30	e.30	e.30	e.30
6	1.5	1.2	.92	.75	e.65	e.20	e.30	e.30	e.30	e.30	e.30	e.30
7	1.4	1.2	.96	.76	e.65	e.15	e.25	e.30	e.30	e.30	e.30	e.30
8	1.3	1.3	.96	.76	e.65	e.20	e.20	e.30	e.30	e.30	e.30	e.30
9	1.2	1.3	.96	.75	e.65	e.30	e.25	e.30	e.30	e.30	e.30	e.30
10	1.2	1.3	.90	.71	e.65	e.30	e.30	e.30	e.30	e.30	e.30	e.30
11	1.2	1.3	.85	.68	e.65	e.30	e.30	e.30	e.30	e.30	e.30	e.30
12	1.2	1.3	.85	.68	e.65	e.30	e.30	e.30	e.30	e.30	e.30	e.30
13	1.2	1.3	.85	.68	e.65	e.30	e.30	e.30	e.30	e.30	e.30	e.30
14	1.2	1.2	.85	.68	e.65	e.30	e.30	e.30	e.30	e.30	e.30	e.30
15	1.2	1.1	.85	.68	e.65	e.30	e.30	e.30	e.30	e.30	e.30	e.30
16	1.1	1.1	.85	.69	e.65	e.30	e.30	e.30	e.30	e.30	e.30	e.30
17	1.1	1.1	.83	.76	e.65	e.30	e.30	e.30	e.30	e.30	e.30	e.30
18	1.1	1.1	.76	e.75	e.65	e.30	e.30	e1.0	e.30	e.30	e.30	e.30
19	1.1	1.1	.76	e.70	e.65	e.30	e.30	.32	e.30	e.30	e.30	e.30
20	1.1	1.1	.76	e.70	e.60	e.30	e.30	.33	e.25	e.30	e.30	e.30
21	1.1	.99	.76	e.70	e.60	e.30	e.30	.32	e.20	e.30	e.30	e.30
22	1.1	.99	.76	e.70	e.55	e.30	e.30	.32	e.25	e.30	e.20	e.30
23	1.1	1.1	.76	e.70	e.50	e.30	e.30	.32	e.30	e.30	e.20	e.30
24	1.1	1.0	.76	e.70	e.50	e.30	e.30	.32	e.30	e.30	e.25	e.30
25	1.1	.97	.76	e.70	e.50	e.30	e.30	.32	e.30	e.30	e.25	e.30
26	1.1	.96	.76	e.70	e.50	e.30	e.30	e.25	e.30	e.30	e.25	e.30
27	1.1	.96	.76	e.70	e.50	e.30	e.30	e.20	e.30	e.30	e.30	e.30
28	1.1	.97	.73	e.70	e.50	e.30	e.30	e.20	e.30	e.30	e.30	e.30
29	1.1	1.0	.76	e.70	e.50	e.30	e.30	e.25	e.30	e.30	e.30	e.30
30	1.2	.96	.76	e.70	---	e.30	e.30	e.25	e.30	e.30	e.30	e.30
31	1.2	---	.76	e.70	---	e.30	---	e.30	---	e.30	e.30	---
TOTAL	36.4	33.90	26.02	22.00	17.85	9.16	8.80	9.80	8.80	9.30	8.95	9.00
MEAN	1.17	1.13	.84	.71	.62	.30	.29	.32	.29	.30	.29	.30
MAX	1.5	1.3	.96	.76	.70	.48	.30	1.0	.30	.30	.30	.30
MIN	1.0	.96	.73	.68	.50	.15	.20	.20	.20	.30	.20	.30
AC-FT	72	67	52	44	35	18	17	19	17	18	18	18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2000, BY WATER YEAR (WY)

MEAN	1.92	1.59	1.10	1.00	.82	1.15	1.50	5.25	7.44	5.52	2.49	1.85
MAX	2.85	2.34	1.84	1.79	1.60	4.60	5.79	18.0	21.1	29.4	8.11	3.57
(WY)	1994	1994	1994	1996	1994	1996	1990	1990	1991	1993	1993	1989
MIN	.23	.21	.14	.098	.069	.073	.039	.32	.29	.30	.12	.18
(WY)	1989	1989	1989	1989	1989	1989	1989	2000	2000	2000	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1987 - 2000	
ANNUAL TOTAL	660.87		199.98			
ANNUAL MEAN	1.81		.55		2.67	
HIGHEST ANNUAL MEAN					4.55	1991
LOWEST ANNUAL MEAN					.55	2000
HIGHEST DAILY MEAN	14	Jun 8	1.5	Oct 5	238	May 26 1997
LOWEST DAILY MEAN	.23	Mar 28	.15	Mar 7	.02	Apr 22 1989
ANNUAL SEVEN-DAY MINIMUM	.29	Mar 26	.25	Mar 5	.03	Apr 17 1989
INSTANTANEOUS PEAK FLOW			1.5	Oct 5	b306	May 26 1997
INSTANTANEOUS PEAK STAGE			a5.68	May 17	a8.66	May 6 1994
INSTANTANEOUS LOW FLOW			.10	Aug 23	.01	Jan 13 1989
ANNUAL RUNOFF (AC-FT)	1310		397		1940	
10 PERCENT EXCEEDS	3.2		1.1		4.5	
50 PERCENT EXCEEDS	1.2		.30		1.3	
90 PERCENT EXCEEDS	.51		.30		.30	

a--Backwater from beaver dam.
b--Gage height, 6.02 ft.
e--Estimated.

MILK RIVER BASIN

06154550 PEOPLES CREEK BELOW KUHR COULEE, NEAR DODSON, MT

LOCATION.--Lat 48°21'49", long 108°21'16", in $NW^1/_4NW^1/_4NE^1/_4$ 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 of Kuhr Coulee, 5.5 mi southwest of Dodson, and at river mile 7.8.
DRAINAGE AREA.--675 mi^2.

WATER-DISCHARGE RECORDS

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. Datum of gage is 2,309.18 ft above sea level (levels by Bureau of Indian Affairs). Prior to June 1951, nonrecording gage at site 0.5 mi upstream at different datum. June 1, 1951 to Sept. 30, 1988, water-stage recorder at sites 2.5 mi upstream at different datum.
REMARKS.--Water-discharge records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 3,300 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	e.04	e.70	e1.0	e.50	e5.0	3.0	1.6	3.6	.00	.00	.00
2	.00	e.03	e.70	e1.0	e.50	e6.0	2.9	1.5	3.9	.00	.00	.00
3	.01	e.03	e.70	e.90	e.50	e7.5	2.5	1.5	4.9	17	.00	.00
4	.01	e.03	e.70	e.80	e.50	e8.0	2.5	1.3	4.9	71	.01	.00
5	.01	e.04	e.70	e.70	e.50	e10	2.8	1.2	4.3	e20	.01	.00
6	.01	e.06	e.70	e.70	e.50	e9.0	2.5	1.0	3.6	6.0	.01	.00
7	.00	e.06	e.70	e.70	e.50	e8.0	2.6	1.0	3.0	5.0	.01	.00
8	.00	e.06	e.70	e.70	e.50	e6.0	2.7	.99	2.4	4.2	.01	.00
9	.00	e.06	e.70	e.70	e.50	e6.0	2.6	1.1	2.1	3.6	.01	.00
10	.00	e.06	e.70	e.70	e.50	e6.0	2.4	1.3	2.3	3.6	.01	.00
11	.01	e.06	e.70	e.70	e.50	e6.0	2.1	2.4	2.4	4.6	.02	.00
12	.02	e.06	e.70	e.70	e.40	6.1	1.7	7.5	2.5	4.8	.01	.00
13	.03	e.06	e.70	e.70	e.40	6.3	1.5	29	2.3	4.1	.01	.00
14	.02	e.06	e.70	e.70	e.40	5.7	1.5	16	2.0	3.6	.01	.00
15	e.01	e.05	e.70	e.70	e.40	5.5	1.5	16	1.7	2.9	.01	.00
16	e.02	e.05	e.70	e.70	e.40	4.9	1.7	12	1.5	2.2	.00	.00
17	e.02	e.05	e.80	e.70	e.40	6.0	1.5	11	1.3	1.6	.00	.00
18	e.02	e.05	e.80	e.70	e.40	5.3	1.6	8.1	1.1	1.3	.00	.00
19	e.02	e.05	e.80	e.70	e.40	5.7	1.6	6.6	.90	1.1	.00	.00
20	e.02	e.06	e.80	e.70	e.50	5.4	1.6	5.6	.72	1.3	.00	.00
21	e.03	e.06	e.80	e.70	e1.0	4.5	1.4	4.7	.55	1.1	.00	.00
22	e.04	e.06	e.80	e.70	e1.5	4.5	1.4	4.4	.40	.69	.00	.00
23	e.04	e.06	e.80	e.70	e1.5	4.4	1.7	3.8	.26	.35	.00	.00
24	e.04	e.06	e.80	e.70	e2.5	4.4	1.6	3.6	.13	.12	.00	.00
25	e.04	e.06	e.80	e.70	e3.5	4.1	1.4	3.6	.05	.04	.00	.00
26	e.04	e.06	e.90	e.70	e3.0	3.8	1.6	3.3	.02	.02	.00	.00
27	e.04	e.10	e1.0	e.60	e2.5	3.5	1.6	3.5	.00	.02	.00	.00
28	e.04	e.10	e1.0	e.50	e3.0	3.4	1.5	3.6	.00	.01	.00	.00
29	e.04	e.70	e1.0	e.50	e4.0	3.5	1.6	3.3	.02	.01	.00	.00
30	e.04	e.70	e1.0	e.50	---	3.2	1.6	3.2	.01	.01	.00	.00
31	e.04	---	e1.0	e.50	---	3.0	---	3.0	---	.00	.00	---
TOTAL	0.66	2.98	24.30	21.70	31.70	170.7	58.2	166.69	52.86	160.27	0.13	0.00
MEAN	.021	.099	.78	.70	1.09	5.51	1.94	5.38	1.76	5.17	.004	.000
MAX	.04	.70	1.0	1.0	4.0	10	3.0	29	4.9	71	.02	.00
MIN	.00	.03	.70	.50	.40	3.0	1.4	.99	.00	.00	.00	.00
AC-FT	1.3	5.9	48	43	63	339	115	331	105	318	.3	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 2000, BY WATER YEAR (WY)*

MEAN	8.96	6.08	4.80	5.57	32.2	82.6	57.4	56.8	43.8	23.3	3.39	13.6
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	.000	.000	.000	.000	.000	.76	.57	.094	.030	.000	.000	.000
(WY)	1959	1957	1953	1956	1956	1964	1962	1998	1958	1918	1919	1918

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1918 - 2000*	
ANNUAL TOTAL	3796.58		690.19			
ANNUAL MEAN	10.4		1.89		28.7	
HIGHEST ANNUAL MEAN					131	1986
LOWEST ANNUAL MEAN					1.18	1961
HIGHEST DAILY MEAN	114	Jun 5	71	Jul 4	5070	Sep 25 1986
LOWEST DAILY MEAN	.00	Aug 22	.00	Oct 1	.00	Jun 11 1918
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 22	.00	Aug 16	.00	Jun 11 1918
INSTANTANEOUS PEAK FLOW			109	Jul 3	b7590	Sep 25 1986
INSTANTANEOUS PEAK STAGE			a5.06	Jul 3	c17.05	Mar 29 1952
INSTANTANEOUS LOW FLOW					.00	Jul 8 1996
ANNUAL RUNOFF (AC-FT)	7530		1370		20790	
10 PERCENT EXCEEDS	32		4.8		48	
50 PERCENT EXCEEDS	3.2		.70		3.3	
90 PERCENT EXCEEDS	.01		.00		.00	

*--During period of operation (1918-21 (fragmentary), 1951-73, 1982 to current year).
a--May have been higher during period of no gage-height record, July 5.
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.

MILK RIVER BASIN

06154550 PEOPLES CREEK BELOW KUHR COULEE, NEAR DODSON, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1989-92, 1994, May 1999 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
07...	1230	.01	8.7	1850	10.0	12.5	.001
MAR 2000							
28...	1200	3.5	8.7	1170	10.0	9.5	<.001
MAY							
15...	1215	16	8.4	927	20.0	15.0	<.001
AUG							
15...	1345	.01	9.2	4850	30.0	24.0	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
07...	<.005	.53	.002	.044	47	0.00	98
MAR 2000							
28...	<.005	.46	.003	.020	65	.62	80
MAY							
15...	<.005	.64	.003	.079	78	3.4	99
AUG							
15...	<.005	2.5	.127	.509	56	0.00	58

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT 1999											
07...	1230	260	44	37	6.8	8	310	395	22	.7	6.9
MAY 2000											
15...	1215	200	39	24	5.8	4	120	183	9.8	.4	5.6

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT 1999											
07...	560	1220	1.66	.03	4	<.1	E.8	E1	<1	E1	<31
MAY 2000											
15...	270	589	.80	25.9	E2	<.1	2	6	2	5	8

E--Estimated.

MILK RIVER BASIN

06155030 MILK RIVER NEAR DODSON, MT

LOCATION.--Lat 48°24'11", long 108°17'35", in NE$^1/_4$SE$^1/_4$NW$^1/_4$ 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 above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Numerous 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.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e120	8.3	3.9	46	15	5.8	.80	.97		
2			e120	6.3	3.9	38	15	5.6	.72	.98		
3			e120	9.2	3.8	62	18	5.5	.63	.95		
4			e120	8.0	4.9	91	20	5.2	.60	.95		
5			e120	6.7	7.9	53	31	5.0	.56	1.0		
6			e120	6.5	13	34	191	4.9	.58	.95		
7			e120	6.0	72	26	446	5.1	.59	.86		
8			e120	5.9	150	24	591	5.6	.72	.82		
9			e130	5.3	62	22	468	6.2	.85	.77		
10			e140	5.3	36	20	168	7.6	.98	.77		
11			143	5.3	36	19	53	12	1.0	.81		
12			139	5.1	34	18	38	23	.99	1.0		
13			136	6.2	54	17	33	32	.96	1.3		
14			136	4.8	134	17	30	27	.88	2.2		
15			135	4.9	167	16	27	15	.83	2.4		
16			134	4.8	108	16	26	8.7	.72	3.1		
17			132	5.0	56	17	26	7.3	.67	3.6		
18			132	5.0	35	17	26	5.9	.74	5.1		
19			135	5.1	25	19	27	4.5	.67	9.2		
20			136	6.1	20	17	28	3.4	.47	11		
21			91	7.3	20	17	29	2.1	.65	13		
22			15	6.4	18	17	32	1.7	.48	11		
23			18	6.9	19	17	32	1.3	.50	13		
24			13	4.5	19	18	33	1.1	.53	13		
25			11	4.5	18	17	20	.96	.57	13		
26			9.2	5.3	18	17	3.8	.84	.60	12		
27			8.4	4.5	18	17	3.8	.80	.69	13		
28			9.0	5.0	18	17	4.0	.72	.72	13		
29			7.9	4.4	19	16	5.4	.75	.84	13		
30			7.5	3.9	26	15	7.0	.73	.88	13		
31			8.2	---	39	---	6.7	.82	---	12		
TOTAL			2786.2	172.5	1258.4	757	2453.7	207.12	21.42	187.73		
MEAN			89.9	5.75	40.6	25.2	79.2	6.68	.71	6.06		
MAX			143	9.2	167	91	591	32	1.0	13		
MIN			7.5	3.9	3.8	15	3.8	.72	.47	.77		
AC-FT			5530	342	2500	1500	4870	411	42	372		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1993 AND SEASONS 1994 - 2000*

MEAN	83.2	129	496	218	211	245	194	69.5	148	225	106	77.8
MAX	230	526	2252	1691	1685	655	599	362	1727	2688	421	275
(WY)	1990	1986	1996	1996	1986	1995	1991	1993	1986	1987	1987	1987
MIN	18.2	20.3	15.9	2.35	11.4	16.4	30.8	6.68	.71	5.07	25.3	17.3
(WY)	1985	1985	1985	1999	1995	1983	1984	2000	2000	1991	1985	1985

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1994 - 2000*		WATER YEARS 1982 - 2000*	
ANNUAL MEAN					163	
HIGHEST ANNUAL MEAN					524	1986
LOWEST ANNUAL MEAN					36.6	1985
HIGHEST DAILY MEAN	591	Jul 8	5000	Mar 20 1996	11500	Sep 26 1986
LOWEST DAILY MEAN	.47	Sep 20	.47	Sep 20 2000	c.00	Sep 16 1983
ANNUAL SEVEN-DAY MINIMUM					.00	Sep 16 1983
INSTANTANEOUS PEAK FLOW	616	Jul 8	a5200	Mar 17 1994	13200	Sep 26 1986
INSTANTANEOUS PEAK STAGE	7.97	Jul 8	b24.51	Mar 14 1996	29.79	Sep 26 1986
INSTANTANEOUS LOW FLOW					.00	Oct 6 1990
ANNUAL RUNOFF (AC-FT)					118200	
10 PERCENT EXCEEDS					430	
50 PERCENT EXCEEDS					55	
90 PERCENT EXCEEDS					6.5	

*--Seasonal record beginning water year 1994.
a--Gage height, 22.71 ft.
b--Backwater from ice.
c--No flow at times most years.
e--Estimated.

MILK RIVER BASIN

06155900 MILK RIVER AT CREE CROSSING, NEAR SACO, MT

LOCATION.--Lat 48°32'25", long 107°31'10", in $NW^1/_4SE^1/_4SE^1/_4$ 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 273.2.

DRAINAGE AREA.--13,118 mi^2.

PERIOD OF RECORD.--May to October 2000 (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 2,188 ft above sea level, from topographic map.

REMARKS.--Seasonal records good. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					25	151	64	81	19	18		
2					25	190	72	87	20	18		
3					23	256	96	91	20	23		
4					21	204	121	102	20	27		
5					18	161	123	121	22	20		
6					17	192	142	120	22	18		
7					14	202	130	121	20	18		
8					9.3	162	125	122	18	18		
9					15	154	431	124	17	19		
10					40	162	646	141	15	19		
11					160	144	628	121	13	19		
12					117	131	409	110	14	21		
13					87	119	227	111	16	23		
14					102	112	168	107	17	24		
15					114	111	158	121	16	24		
16					162	95	136	134	15	24		
17					231	98	114	122	15	23		
18					198	104	105	113	17	22		
19					159	103	96	106	19	24		
20					137	100	86	99	19	24		
21					143	96	82	90	21	23		
22					128	100	89	83	23	22		
23					124	86	95	71	21	22		
24					123	71	93	60	23	30		
25					112	61	92	58	22	38		
26					108	55	83	53	19	39		
27					113	53	64	43	19	41		
28					107	50	61	31	19	48		
29					107	55	61	30	19	47		
30					115	64	73	25	18	44		
31					112	---	74	20	---	42		
TOTAL					2966.3	3642	4944	2818	558	822		
MEAN					95.7	121	159	90.9	18.6	26.5		
MAX					231	256	646	141	23	48		
MIN					9.3	50	61	20	13	18		
AC-FT					5880	7220	9810	5590	1110	1630		

STATISTICS OF MONTHLY MEAN DATA FOR SEASON 2000

MEAN	95.7	121	159	90.9	18.6	26.5
MAX	95.7	121	159	90.9	18.6	26.5
(WY)	2000	2000	2000	2000	2000	2001
MIN	95.7	121	159	90.9	18.6	26.5
(WY)	2000	2000	2000	2000	2000	2001

SUMMARY STATISTICS FOR 2000 SEASON

HIGHEST DAILY MEAN	646	Jul 10
LOWEST DAILY MEAN	9.3	May 8
INSTANTANEOUS PEAK FLOW	683	Jul 10
INSTANTANEOUS PEAK STAGE	4.23	Jul 10

MILK RIVER BASIN

06156500 BELANGER CREEK DIVERSION CANAL NEAR VIDORA, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°29'39", long 109°21'54", 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 above sea level, from Cypress Lake elevation.

REMARKS.--Records fair. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	2.8	4.7	.00	.00	.00	.00		
2			.00	.00	2.5	.00	.00	.00	.00	.00		
3			.00	.00	2.9	.00	.00	.00	.00	.00		
4			.00	.00	2.8	.00	.00	.00	.00	.00		
5			.00	.00	2.5	.00	.00	.00	.00	.00		
6			.00	.00	2.7	.00	.00	.00	.00	.00		
7			.00	.00	2.5	.00	.00	.00	.00	.00		
8			.00	.00	4.1	.00	.00	.00	.00	.00		
9			.00	.00	6.2	.00	.00	.00	.00	.00		
10			.00	.00	6.1	.00	.00	.00	.00	.00		
11			.00	.00	8.6	.00	.00	.00	.00	.00		
12			.00	.00	9.9	.00	.00	.00	.00	.00		
13			.00	.00	11	.00	.00	.00	.00	.00		
14			.00	.00	9.4	.00	.00	.00	.00	.00		
15			.00	.00	13	.00	.00	.00	.00	.00		
16			.00	.00	15	.00	.00	.00	.00	.00		
17			.00	1.6	11	.00	.00	.00	.00	.00		
18			.00	1.2	7.4	.00	.00	.00	.00	.00		
19			.00	2.6	7.0	.00	.00	.00	.00	.00		
20			.00	2.4	6.5	.00	.00	.00	.00	.00		
21			.00	2.6	6.0	.00	.00	.00	.00	.00		
22			.00	2.9	5.8	.00	.00	.00	.00	.00		
23			.00	3.4	5.3	.00	.00	.00	.00	.00		
24			.00	2.8	5.1	.00	.00	.00	.00	.00		
25			.00	2.6	5.2	.00	.00	.00	.00	.00		
26			.00	2.5	5.4	.00	.00	.00	.00	.00		
27			.00	2.5	5.8	.00	.00	.00	.00	.00		
28			.04	2.6	5.7	.00	.00	.00	.00	.00		
29			.00	2.9	6.2	.00	.00	.00	.00	.00		
30			.00	2.6	6.6	.00	.00	.00	.00	.00		
31			.00	---	6.7	---	.00	.00	---	.00		
TOTAL			0.04	35.20	197.7	4.70	0.00	0.00	0.00	0.00		
MEAN			.001	1.17	6.38	.16	.000	.000	.000	.000		
MAX			.04	3.4	15	4.7	.00	.00	.00	.00		
MIN			.00	.00	2.5	.00	.00	.00	.00	.00		
AC-FT			.08	70	392	9.3	.00	.00	.00	.00		

MILK RIVER BASIN

06157500 CYPRESS LAKE EAST OUTFLOW CANAL NEAR VIDORA, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°29'12", long 109°21'08", 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 above sea level, from topographic map. Prior to Sept. 26, 1946, at datum 2.24 ft higher and Sept. 26, 1946, to May 18, 1950, at datum 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e2.0	2.2	.00	1.5	5.5	.07	.00	.46		
2			e2.0	2.6	.11	1.2	5.0	.04	.00	.49		
3			e2.2	2.0	.04	1.2	4.5	.04	.00	.04		
4			e2.3	2.1	.00	1.2	5.7	.04	.00	.00		
5			e2.4	2.2	.00	.99	5.0	.04	.00	.21		
6			e2.1	2.3	.00	1.0	4.0	.04	.00	2.9		
7			e1.8	2.9	.00	.85	4.5	.00	.00	1.9		
8			e1.6	2.9	.00	.78	4.3	.00	.28	1.3		
9			e1.6	1.8	.00	1.1	3.1	.00	.49	.92		
10			e1.6	1.5	.00	.92	4.4	.00	.28	1.1		
11			e1.7	1.3	18	.88	3.1	.00	.28	1.4		
12			e1.7	1.3	63	.78	2.4	.00	.39	1.1		
13			e1.7	1.1	5.3	1.9	2.5	.00	.42	.95		
14			e1.6	1.1	2.3	.78	2.0	.00	.46	.60		
15			e1.4	1.0	2.0	.95	1.4	.00	.39	.42		
16			e1.3	.78	1.9	4.1	1.0	.00	.32	.32		
17			e1.4	.92	2.2	4.7	.81	.00	.35	.21		
18			e1.4	.67	2.2	5.4	.71	.00	.28	.92		
19			e1.6	.64	2.2	4.9	.60	.00	.49	.35		
20			e1.7	.49	2.2	4.2	.53	.00	.64	.71		
21			e1.8	.28	1.9	3.7	.49	.00	.95	2.3		
22			e3.0	.14	1.7	5.0	.49	.00	1.4	.95		
23			e4.3	.18	1.4	7.4	.42	.00	1.3	1.6		
24			e3.5	.11	3.2	7.0	.39	.00	.92	1.2		
25			e2.2	.88	2.7	7.3	.32	.00	.85	1.2		
26			e2.3	.78	2.0	8.1	.25	.00	.64	1.3		
27			e3.1	.32	1.5	6.8	.21	.00	.71	1.6		
28			e4.7	.11	1.2	5.8	.18	.00	.71	1.7		
29			e4.2	.00	1.0	5.1	.14	.00	.57	1.7		
30			e3.0	.00	1.1	5.0	.11	.00	.57	1.5		
31			2.4	---	1.2	---	.07	.00	---	e1.4		
TOTAL			69.6	34.60	120.35	100.53	64.12	0.27	13.69	32.75		
MEAN			2.25	1.15	3.88	3.35	2.07	.009	.46	1.06		
MAX			4.7	2.9	63	8.1	5.7	.07	1.4	2.9		
MIN			1.3	.00	.00	.78	.07	.00	.00	.00		
AC-FT			138	69	239	199	127	.5	27	65		

e--Estimated.

MILK RIVER BASIN

06158500 EASTEND CANAL AT EASTEND, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°30'21", long 108°50'54", in NW$^1/_4$ 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. Datum of gage is 2,998.58 ft above sea level (Geodetic Survey of Canada datum). Prior to June 1973, at sites within 1 mi, at different datums.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Canal diverts water from Eastend Reservoir in NW$^1/_4$ 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 ft^3/s, May 18, 1993; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	e26	15	.00	52	.00	.00		
2			.00	.00	46	3.2	.00	50	.00	.00		
3			.00	.00	63	.00	.00	41	.00	.00		
4			.00	.00	68	.00	.00	33	.00	.00		
5			.00	.00	73	.00	.00	20	.00	.00		
6			.00	.00	79	.00	.00	11	.00	.00		
7			.00	.00	78	.00	.00	.00	.00	.00		
8			.00	.00	82	.00	.00	.00	.00	.00		
9			.00	.00	82	.00	.00	.00	.00	.00		
10			.00	.00	86	.00	.00	.00	.00	.00		
11			.00	.00	75	.00	.00	.00	.00	.00		
12			.00	.00	21	.00	.00	.00	.00	.00		
13			.00	.00	.00	.00	e.00	.00	.00	.00		
14			.00	.00	.00	.00	e.00	.00	.00	.00		
15			.00	.00	.00	.00	e.00	.00	.00	.00		
16			.00	.00	.00	.00	e.00	.00	.00	.00		
17			.00	.00	.00	.00	e.00	.00	.00	.00		
18			.00	.00	54	.00	e.00	.00	.00	.00		
19			.00	.00	87	.00	e.00	.00	.00	.00		
20			.00	.00	85	.00	e.00	.00	.00	.00		
21			.00	.00	83	.00	e.00	.00	.00	.00		
22			.00	.00	80	.00	e.00	.00	.00	.00		
23			.00	.00	77	.00	e.00	.00	.00	.00		
24			.00	.00	77	.00	.00	.00	.00	.00		
25			.00	.00	77	.00	.00	.00	.00	.00		
26			.00	.00	70	.00	41	.00	.00	.00		
27			.00	.00	68	.00	73	.00	.00	.00		
28			.00	.00	73	.00	72	.00	.00	.00		
29			.00	.00	73	.00	59	.00	.00	.00		
30			.00	.00	66	.00	57	.00	.00	.00		
31			.00	---	42	---	52	.00	---	.00		
TOTAL			0.00	0.00	1791.00	18.20	354.00	207.00	0.00	0.00		
MEAN			.000	.000	57.8	.61	11.4	6.68	.000	.000		
MAX			.00	.00	87	15	73	52	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	.00	3550	36	702	411	.00	.00		

e--Estimated.

MILK RIVER BASIN

06161300 HUFF LAKE PUMPING CANAL NEAR VAL MARIE, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°22'20", long 107°53'05", 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 poor. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	14	.00	.00	.00	.00		
2			.00	.00	.00	12	.00	.00	.00	.00		
3			.00	.00	.00	21	.00	.00	.00	.00		
4			.00	.00	.00	25	.00	.00	.00	.00		
5			.00	.00	.00	26	.00	.00	.00	.00		
6			.00	.00	.00	26	.00	.00	.00	.00		
7			.00	.00	.00	26	.00	.00	.00	.00		
8			.00	.00	.00	16	.00	.00	.00	.00		
9			.00	.00	.00	.00	.00	.00	.00	.00		
10			.00	.00	11	.00	.00	.00	.00	.00		
11			.00	.00	11	.00	.00	.00	.00	.00		
12			.00	.00	.00	.00	.00	.00	.00	.00		
13			.00	.00	.00	.00	.00	2.4	.00	.00		
14			.00	.00	.00	.00	.00	28	.00	.00		
15			.00	.00	.00	.00	.00	27	.00	.00		
16			.00	.00	20	.00	.00	28	.00	.00		
17			.00	.00	26	.00	.00	27	.00	.00		
18			.00	.00	26	.00	.00	27	.00	.00		
19			.00	.00	24	.00	.00	26	.00	.00		
20			.00	.00	24	.00	.00	26	.00	.00		
21			.00	.00	24	.00	.00	25	.00	.00		
22			.00	.00	23	.00	.00	25	.00	.00		
23			.00	.00	22	.00	.00	23	.00	.00		
24			.00	.00	22	.00	.00	23	.00	.00		
25			.00	.00	21	.00	.00	23	.00	.00		
26			.00	.00	21	.00	.00	23	.00	.00		
27			.00	.00	21	.00	.00	10	.00	.00		
28			.00	.00	14	.00	.00	7.1	.00	.00		
29			.00	.00	11	.00	.00	3.6	.00	.00		
30			.00	.00	18	.00	.00	.00	.00	.00		
31			.00	---	22	---	.00	.00	---	.00		
TOTAL			0.00	0.00	361.00	166.00	0.00	354.10	0.00	0.00		
MEAN			.000	.000	11.6	5.53	.000	11.4	.000	.000		
MAX			.00	.00	26	26	.00	28	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	.00	716	329	.00	702	.00	.00		

MILK RIVER BASIN

06161500 HUFF LAKE GRAVITY CANAL NEAR VAL MARIE, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°22'10", long 107°53'06", 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 Marie West 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. Datum of gage is 2,662.88 ft above sea level (Geodetic Survey of Canada datum). 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 about 1,900 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	39	.00	.00	9.7	.00		
2			.00	.00	.00	36	.00	.00	9.7	.00		
3			.00	.00	.00	35	.00	.00	9.6	.00		
4			.00	.00	.00	32	.00	.00	9.5	.00		
5			.00	.00	.00	26	.00	.00	9.4	.00		
6			.00	.00	.00	22	.00	.00	9.4	.00		
7			.00	.00	.00	18	.00	.00	1.6	.00		
8			.00	.00	.00	13	.00	.00	.00	.00		
9			.00	.00	.00	11	.00	.00	.00	.00		
10			.00	.00	25	11	.00	.00	.00	.00		
11			.00	.00	20	3.5	.00	.00	.00	.00		
12			.00	.00	.00	.00	.00	.00	.00	.00		
13			.00	.00	.00	.00	.00	.64	.00	.00		
14			.00	.00	.00	.00	.00	20	.00	.00		
15			.00	.00	.00	.00	.00	23	.00	.00		
16			.00	.00	23	.00	.00	23	.00	.00		
17			.00	.00	23	.00	.00	25	.00	.00		
18			.00	.00	19	.00	.00	29	.00	.00		
19			.00	.00	26	.00	.00	30	.00	.00		
20			.00	.00	30	.00	.00	30	.00	.00		
21			.00	.00	32	.00	.00	38	.00	.00		
22			.00	.00	35	.00	.00	40	.00	.00		
23			.00	.00	40	.00	.00	33	.00	.00		
24			.00	.00	39	.00	.00	36	.00	.00		
25			.00	.00	37	.00	.00	36	.00	.00		
26			.00	.00	37	.00	.00	37	.00	.00		
27			.00	.00	39	.00	.00	32	.00	.00		
28			.00	.00	44	.00	.00	22	.00	.00		
29			.00	.00	44	.00	.00	16	.00	.00		
30			.00	.00	45	.00	.00	11	.00	.00		
31			.00	---	46	---	.00	9.9	---	.00		
TOTAL			0.00	0.00	604.00	246.50	0.00	491.54	58.90	0.00		
MEAN			.000	.000	19.5	8.22	.000	15.9	1.96	.000		
MAX			.00	.00	46	39	.00	40	9.7	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	.00	1200	489	.00	975	117	.00		

MILK RIVER BASIN

06162500 NEWTON LAKE MAIN CANAL NEAR VAL MARIE, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°18'18", long 107°48'05", 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. Datum of gage is 2,622.03 ft above sea level (Geodetic Surveys of Canada datum). Prior to May 21, 1963, at several sites within 2 mi of present site at different datums.

REMARKS.--Records fair. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	83	.00	.00	.00	.00		
2			.00	.00	.00	64	.00	.00	.00	.00		
3			.00	.00	.00	62	.00	.00	.00	.00		
4			.00	.00	.00	48	.00	.00	.00	.00		
5			.00	.00	.00	41	.00	.00	.00	.00		
6			.00	.00	.00	36	.00	.00	.00	.00		
7			.00	.00	.00	29	.00	2.5	.00	.00		
8			.00	.00	.00	21	.00	67	.00	.00		
9			.00	.00	.00	e.18	.00	95	.00	.00		
10			.00	.00	.00	e.18	.00	100	.00	.00		
11			.00	.00	.00	e.18	.00	90	.00	.00		
12			.00	.00	.00	e.18	.00	87	.00	.00		
13			.00	.00	.00	e.18	.00	85	.00	.00		
14			.00	.00	.00	e.18	.00	79	.00	.00		
15			.00	.00	.00	e.18	.00	67	.00	.00		
16			.00	.00	.00	e.18	.00	54	.00	.00		
17			.00	.00	76	e.18	.00	52	.00	.00		
18			.00	.00	93	e.14	.00	44	.00	.00		
19			.00	.00	97	e.14	.00	29	.00	.00		
20			.00	.00	96	e.14	.00	7.8	.00	.00		
21			.00	.00	93	e.11	.00	.00	.00	.00		
22			.00	.00	90	e.11	.00	.00	.00	.00		
23			.00	.00	88	e.07	.00	.00	.00	.00		
24			.00	.00	93	e.07	.00	.00	.00	.00		
25			.00	.00	90	e.04	.00	.00	.00	.00		
26			.00	.00	90	e.04	.00	.00	.00	.00		
27			.00	.00	90	.00	.00	.00	.00	.00		
28			.00	.00	88	.00	.00	.00	.00	.00		
29			.00	.00	85	.00	.00	.00	.00	.00		
30			.00	.00	91	.00	.00	.00	.00	.00		
31			.00	---	89	---	.00	.00	---	.00		
TOTAL			0.00	0.00	1349.00	386.48	0.00	859.30	0.00	0.00		
MEAN			.000	.000	43.5	12.9	.000	27.7	.000	.000		
MAX			.00	.00	97	83	.00	100	.00	.00		
MIN			.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT			.00	.00	2680	767	.00	1700	.00	.00		

e--Estimated.

MILK RIVER BASIN

06164000 FRENCHMAN RIVER AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'00", long 107°18'06", in SE$^1/_4$ 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 above sea level, from topographic map. Prior to June 23, 1937, water-stage recorder at site 0.5 mi upstream at different datum. June 23, 1937, to October 1952, water-stage recorder at site 100 ft downstream at present datum.
REMARKS.--Seasonal records good. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			5.3	.81	.04	196	48	35	.39	.00		
2			5.3	.81	.04	222	47	47	.57	.00		
3			5.3	.92	.04	162	35	38	.67	.00		
4			5.3	.81	.04	196	38	30	.67	.00		
5			5.3	.71	.04	110	37	44	.64	.00		
6			5.3	.67	.04	86	209	18	.60	.00		
7			5.8	.71	.04	64	427	7.9	.60	.00		
8			4.5	.53	.04	35	306	6.9	.53	.00		
9			3.6	.46	.00	21	175	3.2	.42	.00		
10			3.0	.39	.00	36	940	1.6	.35	.00		
11			2.4	.32	.04	20	438	.99	.32	.04		
12			1.9	.28	.04	28	95	.60	.28	.04		
13			1.8	.28	.04	13	56	.39	.25	.04		
14			1.7	.32	.04	8.2	39	.25	.21	.00		
15			1.4	.32	.04	5.6	30	18	.18	.00		
16			1.2	.32	.04	4.6	23	17	.18	.00		
17			1.3	.28	.04	4.5	18	24	.14	.00		
18			1.5	.25	.00	33	14	24	.14	.00		
19			1.5	.21	.00	57	11	22	.14	.00		
20			1.5	.21	.00	55	8.0	18	.14	.00		
21			1.4	.18	.00	54	5.8	16	.14	.00		
22			1.5	.14	.00	54	4.6	18	.14	.00		
23			1.6	.11	.00	61	3.0	14	.11	.00		
24			1.5	.11	.00	59	2.0	10	.11	1.7		
25			1.3	.11	.00	59	1.7	6.5	.11	56		
26			1.3	.07	1.2	55	1.2	5.1	.07	61		
27			1.2	.07	30	52	.85	2.8	.07	61		
28			1.0	.04	78	51	15	1.4	.07	41		
29			1.1	.04	70	50	36	.85	.04	17		
30			1.1	.04	62	49	35	.57	.04	7.0		
31			.92	---	60	---	35	.39	---	3.8		
TOTAL			78.82	10.52	301.80	1900.9	3134.15	432.44	8.32	248.62		
MEAN			2.54	.35	9.74	63.4	101	13.9	.28	8.02		
MAX			5.8	.92	78	222	940	47	.67	61		
MIN			.92	.04	.00	4.5	.85	.25	.04	.00		
AC-FT			156	21	599	3770	6220	858	17	493		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1917 - 2000*

MEAN	.000	.22	182	414	142	85.3	53.8	15.3	6.70	10.7	14.2	.000
MAX	.000	.68	1490	5313	1051	886	602	99.5	65.9	77.7	33.8	.000
(WY)	1936	1950	1997	1952	1927	1923	1955	1954	1951	1966	1918	1936
MIN	.000	.000	.27	.35	2.54	.39	.021	.000	.000	.000	.000	.000
(WY)	1936	1936	1937	2000	1937	1937	1984	1934	1919	1932	1936	1936

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1917 - 2000*	
HIGHEST DAILY MEAN	940	Jul 10	19200	Apr 15 1952
LOWEST DAILY MEAN	.00	May 9	.00	Jul 28 1919
INSTANTANEOUS PEAK FLOW	1090	Jul 10	a22700	Apr 15 1952
INSTANTANEOUS PEAK STAGE	8.39	Jul 10	b19.90	Apr 15 1952

*--Seasonal records 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.

RESERVOIRS IN FRENCHMAN RIVER BASIN IN SASKATCHEWAN

(International gaging stations)

06157000 CYPRESS LAKE.--Lat 49°27'30", long 109°30'25", 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. Datum 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, 52,440 acre-ft, Apr. 13, elevation, 3,192.66 ft; minimum, 35,720 acre-ft, Oct. 18, elevation, 3,189.38 ft.

06159000 EASTEND RESERVOIR.--Lat 49°30'26", long 108°51'08", 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. Datum 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 revised 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, 2,420 acre-ft, Apr. 30, elevation, 3,013.77 ft; minimum, 470 acre-ft, Oct 21, elevation, 3,007.54 ft.

06162000 HUFF LAKE.--Lat 49°22'16", long 107°53'07", 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. Datum 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, Reservoir is formed by earthfill dam with concrete control works completed in 1939. The following capacity figures are from revised capacity table effective February 1983. Usable capacity, 3,610 acre-ft between elevation 2,663.2 ft, bottom of outlet works, and 2,676.5 ft, maximum design level. Dead storage, 11 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 and Aug. 6 to Sept. 14, 1985.

EXTREMES FOR CURRENT SEASON: Maximum contents, 4,770 acre-ft, July 4, elevation, 2,678.32 ft; minimum, 1,230 acre-ft, Sept. 21 elevation, 2,671.47ft.

06163000 NEWTON LAKE.--Lat 49°18'12", long 107°48'20", 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. Datum 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 revised 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, 7,700 acre-ft, July 21, elevation, 2,633.71 ft; minimum, 983 acre-ft, July 3, elevation, 2,625.42 ft.

RESERVOIRS IN FRENCHMAN RIVER BASIN IN SASKATCHEWAN--Continued

Seasonal monthend contents, in acre-feet, February 2000 to October 2000

Date		Cypress Lake	Eastend Reservoir	Huff Lake	Newton Lake
Feb.	29.....	51,370	490	2,390	4,440
Mar.	31.....	51,650	1,190	3,670	4,620
Apr.	30.....	51,360	2,410	3,560	6,140
May	31.....	44,640	712	1,750	3,240
June	30.....	42,320	2,000	1,770	1,020
July	31.....	40,320	1,580	3,310	6,840
Aug.	31.....	37,880	980	1,400	5,360
Sept.	30.....	36,860	871	1,300	5,310
Oct.	31.....	36,110	477	2,240	4,250

MILK RIVER BASIN

06164510 MILK RIVER AT JUNEBERG BRIDGE, NEAR SACO, MT

LOCATION.--Lat 48°30'32", long 107°13'02", in $NE^1/_4NE^1/_4$ 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 above sea level, from topographic map.

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	176	179	156	e115	e150	e140	61	36	198	91	214	57
2	176	180	143	e115	e145	e130	61	37	165	91	217	40
3	174	180	166	e90	e140	e130	57	35	220	104	194	39
4	174	180	e110	e90	e140	e130	55	34	231	156	191	38
5	178	177	e130	e105	e140	e140	55	29	171	164	209	39
6	183	182	e130	e110	e130	e150	51	76	157	161	207	39
7	187	181	e130	e120	e130	e150	51	95	207	157	201	40
8	177	179	e130	e110	e125	e150	52	88	218	140	160	40
9	170	177	e125	e105	e120	e140	51	103	190	464	160	38
10	166	176	e130	e105	e120	e150	50	121	184	884	164	37
11	156	174	e130	e100	e115	e150	50	215	173	934	171	36
12	158	173	e130	e100	e115	e160	52	271	151	1150	143	35
13	158	173	e130	e100	e115	173	52	151	128	922	131	35
14	147	174	e120	e100	e110	172	55	135	112	325	126	33
15	134	172	e120	e105	e110	163	52	144	118	207	108	34
16	128	169	e120	e100	e110	175	53	156	103	177	121	33
17	120	166	e120	e100	e110	182	55	236	99	137	128	33
18	100	165	e110	e100	e115	173	53	257	105	121	117	34
19	86	163	e95	e100	e120	183	51	212	116	110	122	36
20	78	163	e100	e100	e120	172	51	150	110	96	136	34
21	115	165	e120	e95	e120	172	51	141	111	213	124	33
22	244	169	e120	e90	e120	165	49	136	110	234	124	37
23	222	170	e120	e90	e120	166	45	117	114	237	123	38
24	203	167	e120	e95	e120	157	43	155	96	224	139	37
25	193	164	e120	e100	e120	107	43	161	65	223	140	35
26	188	160	e120	e100	e120	77	42	182	56	213	143	32
27	185	161	e115	e110	e135	66	41	193	82	192	132	31
28	183	160	e115	e115	e150	63	37	194	87	168	121	31
29	183	155	e115	e130	e140	68	35	177	85	206	111	31
30	181	154	e115	e140	---	65	36	184	87	210	106	30
31	182	---	e115	e145	---	63	---	172	---	210	104	---
TOTAL	5105	5108	3820	3280	3625	4282	1490	4393	4049	8921	4587	1085
MEAN	165	170	123	106	125	138	49.7	142	135	288	148	36.2
MAX	244	182	166	145	150	183	61	271	231	1150	217	57
MIN	78	154	95	90	110	63	35	29	56	91	104	30
AC-FT	10130	10130	7580	6510	7190	8490	2960	8710	8030	17690	9100	2150

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2000, BY WATER YEAR (WY)

MEAN	319	162	127	124	238	1094	842	503	494	444	238	254
MAX	4043	597	406	271	1758	4075	6221	2545	2258	1844	693	1517
(WY)	1987	1987	1987	1987	1996	1979	1978	1986	1982	1991	1993	1986
MIN	46.0	60.1	44.8	33.1	54.8	73.1	42.9	56.4	135	29.6	9.35	22.7
(WY)	1985	1978	1986	1985	1989	1985	1981	1989	2000	1984	1984	1984

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1978 - 2000	
ANNUAL TOTAL	112742		49745			
ANNUAL MEAN	309		136		404*	
HIGHEST ANNUAL MEAN					1042	1978
LOWEST ANNUAL MEAN					87.0	1984
HIGHEST DAILY MEAN	2230	Mar 27	1150	Jul 12	12300	Apr 3 1978
LOWEST DAILY MEAN	78	Oct 20	29	May 5	2.1	Aug 20 1984
ANNUAL SEVEN-DAY MINIMUM	96	Jan 1	32	Sep 24	4.0	Jul 27 1984
INSTANTANEOUS PEAK FLOW			1180	Jul 12	a12400	Apr 3 1978
INSTANTANEOUS PEAK STAGE			5.36	Jul 12	b26.70	Mar 4 1986
ANNUAL RUNOFF (AC-FT)	223600		98670		292600	
10 PERCENT EXCEEDS	668		193		772	
50 PERCENT EXCEEDS	179		125		154	
90 PERCENT EXCEEDS	100		40		55	

*--Median of yearly mean discharge, 263 ft^3/s.
a--Gage height, 24.20 ft.
b--Backwater from ice.
e--Estimated.

MILK RIVER BASIN

06166000 BEAVER CREEK BELOW GUSTON COULEE, NEAR SACO, MT

LOCATION.--Lat 48°21'25", long 107°34'48", in $SE^1/_4SW^1/_4NW^1/_4$ 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 above sea level, from topographic map.

REMARKS.--Seasonal records fair except those for estimated daily discharges, which are poor. 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, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.00	.00	.00	.00	.40	.09	.00	.00		
2			.00	.00	.00	.17	.38	.09	.00	.00		
3			.00	.00	.00	.54	.39	.09	.00	.00		
4			.00	.00	.00	.81	.40	.09	.00	.00		
5			.00	.00	.00	2.6	.41	.12	.00	.00		
6			.00	.00	.00	6.2	.46	.13	.00	.00		
7			.00	.00	.00	15	.49	.14	.00	.00		
8			.00	.00	.00	12	.70	.19	.00	.00		
9			.00	.00	.00	11	1.5	.22	.00	.00		
10			.00	.00	.00	8.9	2.7	.31	.00	.00		
11			.00	.00	.00	6.1	2.0	.42	.00	.00		
12			.00	.00	.00	4.0	2.0	.48	.00	.00		
13			.00	.00	.00	4.5	1.4	.48	.00	.00		
14			.00	.00	.00	5.5	1.4	.50	.00	.00		
15			.00	.00	.00	12	2.2	.61	.00	.00		
16			.00	.00	.00	15	2.1	.98	.00	.00		
17			.00	.00	.00	13	1.5	1.1	.00	.00		
18			.00	.00	.00	5.2	7.4	1.0	.00	.00		
19			.00	.00	.00	2.7	14	1.2	.00	.00		
20			.00	.00	.00	1.8	8.3	1.0	.00	.00		
21			.00	.00	.00	1.3	3.0	.86	.00	.00		
22			.00	.00	.00	1.1	1.7	.79	.00	.00		
23			.00	.00	.00	.97	1.0	.73	.00	.00		
24			.00	.00	.00	.81	.59	.86	.00	.00		
25			.00	.00	.00	.71	.09	1.4	.00	.00		
26			.00	.00	.00	.64	.09	.33	.00	.00		
27			.00	.00	.00	.57	.09	.09	.00	.00		
28			.00	.00	.00	.50	.09	.00	.00	.00		
29			.00	.00	.00	.46	.09	.00	.00	.00		
30			.00	.00	.00	.43	.09	.00	.00	.00		
31			.00	---	.00	---	.09	.00	---	.00		
TOTAL			0.00	0.00	0.00	134.51	57.05	14.30	0.00	0.00		
MEAN			.000	.000	.000	4.48	1.84	.46	.000	.000		
MAX			.00	.00	.00	15	14	1.4	.00	.00		
MIN			.00	.00	.00	.00	.09	.00	.00	.00		
AC-FT			.00	.00	.00	267	113	28	.00	.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1981 - 2000*

MEAN	57.5	22.4	66.5	37.8	50.4	6.99	67.1	26.0
MAX	204	140	718	315	223	40.7	1187	342
(WY)	1986	1987	1986	1982	1998	1993	1986	1987
MIN	.000	.000	.000	.32	.021	.26	.000	.000
(WY)	1995	1995	1984	1992	1985	1984	1984	1985

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1981 - 2000*	
HIGHEST DAILY MEAN	15	Jun 7	11900	Sep 27 1986
LOWEST DAILY MEAN	.00	Oct 11	a.00	Apr 5 1981
INSTANTANEOUS PEAK FLOW	19	Jul 19	b23500	Sep 26 1986
INSTANTANEOUS PEAK STAGE	2.81	Jul 19	14.68	Sep 26 1986

*--During period of operation (1981 to current year).
a--No flow at times each year.
b--From slope-area measurement of peak flow.
e--Estimated.

06169500 ROCK CREEK BELOW HORSE CREEK, NEAR INTERNATIONAL BOUNDARY
(Hydrologic bench-mark station)

LOCATION.--Lat 48°58'10", long 106°50'20", in NE$^1/_4$NW$^1/_4$ 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 above sea level, from topographic map. March 1916 to October 1926, nonrecording gages at several sites within 500 ft upstream at different datum.

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.

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	2.0	1.9	e.85	e.25	e3.5	6.3	3.3	13	6.0	3.2	.82
2	1.1	2.1	2.1	e.90	e.25	e3.0	6.8	3.2	73	5.1	3.0	1.0
3	1.1	2.1	2.1	e.90	e.25	e3.5	7.6	3.0	60	4.9	2.8	1.5
4	1.1	2.0	2.1	e.80	e.25	e4.5	6.3	3.0	95	29	2.6	2.2
5	1.2	2.0	1.9	e.70	e.25	e6.0	7.2	2.8	75	125	3.3	1.9
6	1.2	2.1	1.7	e.60	e.25	e7.0	7.0	2.8	42	59	3.6	1.8
7	1.2	2.3	1.7	e.60	e.25	e9.0	7.0	2.5	33	45	3.2	1.7
8	1.3	2.2	1.7	e.60	e.20	e7.0	6.3	2.4	24	35	3.2	1.7
9	1.3	2.2	1.5	e.60	e.25	e6.0	5.9	2.3	26	24	2.6	1.5
10	1.3	2.4	1.3	e.60	e.30	e6.0	5.3	2.2	328	39	2.1	1.2
11	1.3	2.4	1.3	e.50	e.30	e5.0	5.2	3.5	150	375	2.1	1.1
12	1.5	2.3	1.2	e.50	e.30	e5.0	4.9	3.7	55	151	1.9	1.1
13	1.8	2.3	1.2	e.50	e.30	e4.5	4.7	5.3	35	91	1.7	1.1
14	1.8	2.4	1.3	e.40	e.30	e4.0	4.8	5.9	31	59	1.6	.98
15	1.7	2.4	1.1	e.40	e.30	e3.0	4.3	5.0	30	45	1.4	.89
16	1.6	2.4	.94	e.40	e.30	e2.0	4.2	5.1	32	31	1.1	.88
17	1.7	2.5	.97	e.40	e.30	e2.5	5.1	6.3	92	22	1.1	.81
18	1.9	2.6	e.85	e.40	e.30	e2.5	5.1	5.9	56	16	1.0	.84
19	1.9	2.5	e.70	e.40	e.30	e3.0	5.1	5.5	36	13	.95	.91
20	1.7	2.4	e.85	e.40	e.30	e3.0	4.7	4.5	26	10	.94	.90
21	1.7	2.6	e1.0	e.40	e.30	e4.0	4.4	3.7	20	8.9	.92	1.1
22	1.8	2.6	e1.0	e.30	e.30	e4.5	4.5	2.9	16	9.8	.90	1.1
23	1.9	2.4	e1.0	e.30	e.50	e5.0	4.9	2.4	14	7.4	.89	1.2
24	1.9	2.2	e1.2	e.30	e.60	e6.5	4.6	2.0	12	6.7	.92	1.4
25	1.9	2.2	e1.2	e.30	e.60	6.9	4.2	1.8	13	6.1	1.1	1.6
26	1.9	2.3	e1.2	e.30	e1.0	8.7	4.0	1.7	12	5.7	1.0	1.6
27	2.1	2.5	e1.2	e.30	e1.5	9.1	3.7	1.7	11	5.0	.95	1.5
28	2.2	2.4	e1.2	e.30	e2.0	10	3.7	1.4	11	4.6	.96	1.6
29	2.3	2.1	e1.2	e.30	e3.0	11	3.6	1.3	9.3	4.3	.89	1.6
30	2.2	1.9	e1.2	e.30	---	11	3.5	1.3	7.2	3.8	.83	1.5
31	2.2	---	e1.0	e.30	---	8.6	---	1.7	---	3.5	.81	---
TOTAL	50.8	68.8	40.81	14.85	15.30	175.3	154.9	100.1	1437.5	1250.8	53.56	39.03
MEAN	1.64	2.29	1.32	.48	.53	5.65	5.16	3.23	47.9	40.3	1.73	1.30
MAX	2.3	2.6	2.1	.90	3.0	11	7.6	6.3	328	375	3.6	2.2
MIN	1.0	1.9	.70	.30	.20	2.0	3.5	1.3	7.2	3.5	.81	.81
AC-FT	101	136	81	29	30	348	307	199	2850	2480	106	77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2000, BY WATER YEAR (WY)*

MEAN	1.87	1.53	.78	.32	6.73	83.7	87.1	15.8	12.4	10.1	1.29	1.09
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	.001	.10	.026	.000	.000	.000	3.97	1.46	.17	.004	.000	.000
(WY)	1989	1989	1996	1984	1980	1965	1992	1992	1988	1988	1959	1958

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1956 - 2000**	
ANNUAL TOTAL	13661.04		3401.75			
ANNUAL MEAN	37.4		9.29		15.0***	
HIGHEST ANNUAL MEAN					37.4	1999
LOWEST ANNUAL MEAN					1.88	1998
HIGHEST DAILY MEAN	2350	Mar 25	375	Jul 11	3460	Apr 7 1969
LOWEST DAILY MEAN	.00	Jan 1	.20	Feb 8	.00	Mar 1 1957
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.24	Feb 2	.00	Mar 1 1957
INSTANTANEOUS PEAK FLOW			733	Jul 11	a4420	Apr 7 1969
INSTANTANEOUS PEAK STAGE			6.34	Jul 11	b13.40	Mar 29 1978
INSTANTANEOUS LOW FLOW					c.00	Mar 1 1957
ANNUAL RUNOFF (AC-FT)	27100		6750		10900	
10 PERCENT EXCEEDS	23		15		23	
50 PERCENT EXCEEDS	1.7		2.1		1.5	
90 PERCENT EXCEEDS	.00		.40		.00	

*--During period of operation (September 1956 to current year).
**--Seasonal records only prior to October 1978.
***--Median of yearly discharges,10.7 ft^3/s, 7,750 acre-ft/yr (October 1978 to current year).
a--At times most years.
e--Estimated.

MILK RIVER BASIN

06172310 MILK RIVER AT TAMPICO, MT

LOCATION.--Lat 48°18'29", long 106°49'19", in $SW^1/_4SW^1/_4SW^1/_4$ 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 above sea level, from topographic map.

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. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e160	15	15	119	58	24	17	42		
2			e150	15	15	250	36	24	22	41		
3			e150	14	14	470	33	25	21	41		
4			e150	14	14	460	55	26	21	42		
5			e160	13	14	469	304	27	98	45		
6			e170	10	15	452	372	27	362	47		
7			e170	11	14	400	522	27	255	49		
8			e170	11	14	410	555	28	158	47		
9			e160	11	15	396	371	29	67	46		
10			e170	14	16	474	744	35	54	46		
11			e180	14	17	979	1510	65	47	46		
12			e180	15	18	899	2290	100	45	48		
13			e190	15	20	649	1880	71	44	47		
14			e190	15	33	530	1250	41	43	48		
15			e130	14	37	399	646	32	41	48		
16			e200	14	34	277	359	29	42	53		
17			e220	15	31	213	244	27	43	51		
18			223	14	32	255	160	25	43	49		
19			210	15	61	266	86	25	45	48		
20			210	15	104	263	45	23	45	48		
21			200	16	90	254	35	22	44	46		
22			195	16	80	213	32	22	47	48		
23			191	17	55	179	40	21	44	46		
24			201	16	38	166	105	20	45	46		
25			186	15	33	153	118	20	48	50		
26			167	15	33	114	93	19	48	60		
27			125	15	27	91	63	19	47	60		
28			37	14	24	92	43	19	45	67		
29			17	17	26	103	31	17	44	47		
30			14	15	26	104	26	17	43	e45		
31			14	---	36	---	24	16	---	e45		
TOTAL			4890	430	1001	10099	12130	922	1968	1492		
MEAN			158	14.3	32.3	337	391	29.7	65.6	48.1		
MAX			223	17	104	979	2290	100	362	67		
MIN			14	10	14	91	24	16	17	41		
AC-FT			9700	853	1990	20030	24060	1830	3900	2960		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1994, AND SEASONS 1995-2000*

MEAN	211	178	1136	878	616	602	571	217	181	197	216	152
MAX	791	433	3809	2285	4555	1852	2515	769	903	906	710	363
(WY)	1974	1974	1994	1975	1975	1974	1991	1993	1993	1994	1976	1976
MIN	55.2	49.3	89.4	3.35	15.0	11.7	8.35	4.63	6.52	50.3	90.0	66.9
(WY)	1989	1989	1988	1992	1992	1977	1977	1988	1988	1974	1989	1989

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1995-2000*		WATER YEARS 1974 - 1994*	
ANNUAL MEAN					400	
HIGHEST ANNUAL MEAN					998	1975
LOWEST ANNUAL MEAN					84.6	1988
HIGHEST DAILY MEAN	2290	Jul 12	a11000	Mar 27 1997	8180	May 26 1974
LOWEST DAILY MEAN	10	Apr 6	9.1	Apr 19 1998	.00	Aug 28 1988
ANNUAL SEVEN-DAY MINIMUM					.00	Sep 7 1988
INSTANTANEOUS PEAK FLOW	2410	Jul 12	a11000	Mar 27 1997	c8210	May 26 1974
INSTANTANEOUS PEAK STAGE	12.06	Jul 12	b27.64	Mar 27 1997	25.40	Jul 4 1991
INSTANTANEOUS LOW FLOW					.00	Aug 28 1988
ANNUAL RUNOFF (AC-FT)					289400	
10 PERCENT EXCEEDS					920	
50 PERCENT EXCEEDS					128	
90 PERCENT EXCEEDS					13	

*--During period of operation (1947-1977, 1987 to current year. Seasonal records beginning 1995 water year).
a--Estimated daily discharge, ungaged bypass flow.
b--Backwater from ice.
c--Gage height, 23.65 ft.
e--Estimated.

MILK RIVER BASIN

06174500 MILK RIVER AT NASHUA, MT

LOCATION.--Lat 48°07'47", long 106°21'50", in NE$^1/_4$NE$^1/_4$ 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.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 2,027.75 ft above sea level.
REMARKS.--Water-discharge 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	355	224	205	e130	e140	e130	40	29	101	94	92	73
2	344	220	203	e130	e150	e150	33	29	136	111	100	79
3	407	226	205	e130	e150	e150	31	30	217	149	104	71
4	357	204	e170	e130	e160	e150	30	31	369	161	88	68
5	302	202	e160	e130	e170	e150	30	30	499	619	80	75
6	284	215	e150	e130	e170	e150	25	28	546	1340	81	103
7	267	217	e175	e120	e170	e140	24	27	526	1610	79	147
8	258	211	e130	e100	e170	e140	23	30	453	1900	89	321
9	263	215	e150	e120	e160	e150	21	29	415	1510	104	281
10	263	221	e150	e140	e150	e160	20	33	452	1110	100	203
11	263	223	e150	e140	e140	e160	18	43	874	895	64	117
12	261	223	e150	e130	e140	e160	19	40	1290	1040	45	87
13	254	227	e150	e130	e130	e160	19	52	1360	1740	55	75
14	248	229	e150	e130	e130	e170	25	88	1130	2150	88	71
15	253	228	e160	e130	e120	e180	64	94	775	2030	80	72
16	264	227	e160	e130	e120	e180	66	89	566	1510	67	74
17	257	226	e160	e130	e120	e180	54	82	465	830	60	73
18	234	229	e160	e130	e120	e180	50	63	361	449	54	73
19	217	226	e150	e130	e120	e180	50	65	305	310	50	72
20	200	220	e150	e130	e120	e180	48	77	311	227	42	68
21	181	216	e150	e130	e130	e190	42	77	321	168	38	68
22	129	213	e150	e130	e130	e200	37	139	319	136	34	69
23	69	215	e150	e130	e130	e220	64	146	300	98	36	66
24	40	211	e150	e130	e130	224	72	109	250	87	46	65
25	166	212	e150	e130	e130	220	80	90	203	83	46	65
26	283	214	e150	e130	e130	225	48	74	179	103	48	64
27	281	215	e150	e130	e130	215	34	63	160	129	45	65
28	257	213	e150	e130	e130	195	28	74	129	118	41	66
29	244	209	e140	e130	e130	164	29	109	104	103	47	67
30	232	206	e140	e140	---	115	28	105	91	114	56	65
31	231	---	e130	e140	---	64	---	96	---	109	76	---
TOTAL	7664	6537	4848	4020	4020	5232	1152	2071	13207	21033	2035	2863
MEAN	247	218	156	130	139	169	38.4	66.8	440	678	65.6	95.4
MAX	407	229	205	140	170	225	80	146	1360	2150	104	321
MIN	40	202	130	100	120	64	18	27	91	83	34	64
AC-FT	15200	12970	9620	7970	7970	10380	2280	4110	26200	41720	4040	5680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2000, BY WATER YEAR (WY)

MEAN	316	218	161	149	247	1308	2285	1026	960	681	308	281
MAX	6837	768	487	843	2337	6678	20930	5207	6611	3578	1754	2138
(WY)	1987	1987	1987	1974	1996	1986	1952	1975	1953	1962	1993	1978
MIN	45.8	68.5	39.7	36.0	38.9	86.7	15.1	10.5	28.0	3.56	3.42	12.6
(WY)	1985	1985	1984	1950	1949	1995	1981	1992	1984	1984	1984	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1940 - 2000	
ANNUAL TOTAL	278044		74682			
ANNUAL MEAN	762		204		662*	
HIGHEST ANNUAL MEAN					2359	1952
LOWEST ANNUAL MEAN					57.7	1984
HIGHEST DAILY MEAN	6970	Mar 27	2150	Jul 14	44200	Apr 18 1952
LOWEST DAILY MEAN	40	Oct 24	18	Apr 11	.00	Jul 14 1984
ANNUAL SEVEN-DAY MINIMUM	96	Jul 31	21	Apr 7	.00	Jul 17 1984
INSTANTANEOUS PEAK FLOW			2180	Jul 14	45300	Apr 18 1952
INSTANTANEOUS PEAK STAGE			6.72	Jul 14	31.38	Apr 18 1952
INSTANTANEOUS LOW FLOW					.00	Jul 14 1984
ANNUAL RUNOFF (AC-FT)	551500		148100		479400	
10 PERCENT EXCEEDS	2310		313		1300	
50 PERCENT EXCEEDS	233		133		180	
90 PERCENT EXCEEDS	140		42		60	

*--Median of yearly discharge, 568 ft^3/s.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-53, October 1959 to August 1994, May 1999 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
08...	0930	257	8.4	996	6.0	10.0	.004
MAR 2000							
27...	1115	215	8.7	1240	10.0	6.5	<.001
MAY							
11...	0815	43	8.4	1560	7.0	14.5	.001
AUG							
16...	1315	69	8.4	1140	29.0	23.5	<.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
08...	.024	.95	.010	.121	115	80	98
MAR 2000							
27...	<.005	.69	.001	.063	91	53	95
MAY							
11...	<.005	.74	.007	.069	136	16	69
AUG							
16...	<.005	.88	.038	.157	103	19	97

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT 1999											
08...	0930	270	58	29	5.1	3	110	247	17	.3	5.6
MAY 2000											
11...	0815	440	92	52	7.3	6	270	372	69	.5	4.3

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT 1999											
08...	260	634	.86	440	3	<.1	2.5	5	2	5	<31
MAY 2000											
11...	580	1300	1.77	151	E2	<.1	E.9	6	1	6	7

E--Estimated.

MISSOURI RIVER MAIN STEM

06177000 MISSOURI RIVER NEAR WOLF POINT, MT

LOCATION.--Lat 48°04'00", long 105°31'55", in SW$^1/_4$NW$^1/_4$ 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.
PERIOD OF RECORD.--September 1928 to current year.
REVISED RECORDS.--WSP 1146: 1931. WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 1,958.57 ft above sea level. Prior to Apr. 13, 1930, nonrecording gages at Wolf Point ferry landing 5.5 mi upstream at different datum.
REMARKS.-- 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. Several observations of water temperature and specific conductance were made during the year.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 14, 1908, reached a stage of about 20 ft, present site and datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5060	5060	6820	9790	e9400	e8400	5070	9400	9980	8990	8560	8820
2	5190	5040	7350	9870	e9400	e8600	5090	9290	9870	9080	9210	8950
3	5200	5250	7280	9780	e9000	8660	5060	9210	9770	9260	8980	8950
4	5190	5120	7190	9760	e8200	8580	5080	9360	9690	9680	8790	8900
5	5150	5010	7180	10400	e8200	8220	5780	9540	9760	9550	8770	8840
6	5160	5230	7220	10800	e8000	7620	5960	9380	9880	9540	8830	8790
7	5210	5010	7830	9860	e8000	7060	5920	9380	10200	10300	8850	8970
8	5100	5030	8650	9850	e8200	6220	6030	9170	10500	10700	8830	8860
9	5120	5090	8870	9750	e8400	5900	6110	8760	10500	11200	8820	9000
10	5180	4990	8790	9800	e8200	6060	6100	9070	10700	12100	8920	8250
11	5260	4980	8760	9930	e8400	5820	6050	9070	10300	11000	8910	6440
12	5120	4960	8850	10400	e8200	5720	6060	9380	10400	10200	8740	5390
13	4900	4980	8880	e9500	e8000	5710	5710	9270	11000	10100	8820	5160
14	5160	4940	9240	e10000	e8200	5650	5760	9250	11300	10400	8660	5040
15	5060	4920	9710	e10200	e8200	5570	5980	9370	11100	10800	8810	5060
16	5070	4930	9930	e10200	e7800	5460	6130	9440	11000	10900	8760	5130
17	5150	5050	9830	e10200	e8200	5390	6550	9380	10100	10500	8870	5180
18	5210	5070	9730	e10200	e8200	5420	6760	9290	9620	10000	8710	5720
19	5160	5080	9970	e10200	e8200	5530	7320	9560	9560	9620	8890	5510
20	5120	5030	9940	e10200	e8200	5450	7420	9340	9560	9380	8900	5630
21	5090	5020	10300	e10200	e8200	5350	7570	9380	9400	9260	8700	5560
22	5060	5030	9990	e9000	e8200	5360	7470	9390	9290	9200	8710	5470
23	5050	5010	10000	e9200	e8000	5240	7250	9340	9180	9080	8830	5500
24	5060	5030	9810	e9200	e8000	5510	7360	9340	9270	9090	8800	5360
25	5080	5050	9860	e9200	e7800	5350	7090	9330	9270	9010	8730	5290
26	5070	5030	9650	e9200	e8200	5300	7210	9350	9080	8890	8990	5370
27	5190	5010	9640	e9200	e8200	5330	6860	9170	9050	8670	8850	5360
28	5180	5030	9650	e9200	e8200	5190	6920	9670	9060	8800	8630	5420
29	5140	5030	9620	e9200	e8200	5300	8510	9740	9030	8870	8940	5330
30	5190	5810	9610	e9600	---	5290	9450	9850	8890	8660	8580	5370
31	5140	---	9650	e9400	---	5180	---	9700	---	8470	8690	---
TOTAL	159020	151820	279800	303290	239600	189440	195630	290170	296310	301300	273080	196620
MEAN	5130	5061	9026	9784	8262	6111	6521	9360	9877	9719	8809	6554
MAX	5260	5810	10300	10800	9400	8660	9450	9850	11300	12100	9210	9000
MIN	4900	4920	6820	9000	7800	5180	5060	8760	8890	8470	8560	5040
AC-FT	315400	301100	555000	601600	475200	375800	388000	575600	587700	597600	541700	390000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2000, BY WATER YEAR (WY)*

MEAN	11770	9345	9062	9757	9998	9059	9749	9324	9460	10400	12250	12050
MAX	29130	22210	13420	14270	15820	16750	27180	21800	26040	36270	27110	27150
(WY)	1956	1998	1944	1971	1976	1976	1952	1979	1975	1975	1955	1955
MIN	3151	2328	1338	995	1195	2301	1470	1182	1268	1171	3515	3274
(WY)	1993	1947	1943	1943	1943	1945	1945	1945	1945	1945	1963	1992

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1943 - 2000*	
ANNUAL TOTAL	3384130		2876080			
ANNUAL MEAN	9272		7858		10190	
HIGHEST ANNUAL MEAN					15850	1955
LOWEST ANNUAL MEAN					5607	1963
HIGHEST DAILY MEAN	16500	Mar 30	12100	Jul 10	45100	Apr 19 1952
LOWEST DAILY MEAN	4900	Oct 13	4900	Oct 13	680	Dec 5 1942
ANNUAL SEVEN-DAY MINIMUM	4960	Nov 10	4960	Nov 10	906	Jan 12 1943
INSTANTANEOUS PEAK FLOW			a13400	Jul 9	c46800	Apr 19 1952
INSTANTANEOUS PEAK STAGE			b9.54	Jan 18	b15.64	Mar 27 1960
INSTANTANEOUS LOW FLOW					d320	Dec 10 1941
ANNUAL RUNOFF (AC-FT)	6712000		5705000		7380000	
10 PERCENT EXCEEDS	12200		9990		15900	
50 PERCENT EXCEEDS	9640		8680		9200	
90 PERCENT EXCEEDS	5100		5080		4650	

06177000 MISSOURI RIVER NEAR WOLF POINT, MT--Continued

SUMMARY STATISTICS	WATER YEARS 1929-1939**	
ANNUAL TOTAL		
ANNUAL MEAN	7183	
HIGHEST ANNUAL MEAN	10300	1939
LOWEST ANNUAL MEAN	4891	1937
HIGHEST DAILY MEAN	56700	Mar 25 1939
LOWEST DAILY MEAN	840	Nov 29 1937
ANNUAL SEVEN-DAY MINIMUM	910	Feb 10 1938
INSTANTANEOUS PEAK FLOW	f66800	Mar 25 1939
INSTANTANEOUS PEAK STAGE	b14.40	Mar 25 1939
INSTANTANEOUS LOW FLOW		
ANNUAL FUNOFF (AC-FT)	5204000	
10 PERCENT EXCEEDS	14800	
50 PERCENT EXCEEDS	5060	
90 PERCENT EXCEEDS	2600	

*--After Fort Peck Lake reached operational level (1943 to current year).
**--Prior to Fort Peck Lake reaching operational level (1929-1939).
a--Gage height, 4.04 ft.
b--Backwater from ice.
c--Gage height, 9.98 ft.
d--Occurred outside period of record, during filling of Fort Peck Lake.
e--Estimated.
f--From rating curve extended above 39,000 ft^3/s.

06177500 REDWATER RIVER AT CIRCLE, MT

LOCATION.--Lat 47°24'51", long 105°34'30", in $SW^1/_4SW^1/_4$ 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 current year. 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. Datum of gage is 2,394.32 ft above sea level (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 datum. June 1, 1941, to Mar. 22, 1943, nonrecording gage at site 200 ft upstream at datum 2.8 ft lower. Feb. 26, 1948, to May 7, 1950, nonrecording gage at site 200 ft upstream at present datum.

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.12	.10	e.06	e.05	e.15	1.3	.70	.33	.19	.68	e.30	e.10
2	.09	.13	e.06	e.05	e.15	1.2	.79	.31	.17	.65	e.30	e.10
3	.11	.13	e.06	e.05	e.15	1.2	.93	.27	.14	.83	e.30	e.05
4	.08	.14	e.06	e.05	e.15	1.1	.85	.25	.13	1.2	e.30	e.05
5	.10	.19	e.06	e.05	e.15	1.1	.81	.23	.11	4.2	e.30	e.05
6	.07	.19	e.06	e.05	e.15	.93	.72	.22	.12	2.2	e.30	e.05
7	.10	.26	e.06	e.05	e.15	.66	.61	.22	.13	1.3	e.30	e.05
8	.10	.25	e.06	e.05	e.15	.70	.56	.21	.11	.98	e.30	e.05
9	.11	.25	e.06	e.10	e.15	.74	.51	.21	.12	6.2	e.20	e.05
10	.07	.24	e.06	e.10	e.15	.76	.48	.20	.21	6.3	e.20	e.05
11	.06	.23	e.06	e.15	e.15	.80	.48	.23	.18	11	e.20	e.05
12	.19	.25	e.06	e.15	e.15	.84	.47	.26	.17	8.4	e.20	e.05
13	.14	.25	e.06	e.15	e.15	.87	.46	.29	.17	5.9	e.20	e.05
14	.13	.27	e.06	e.15	e.15	.84	.53	.27	.17	3.5	e.20	e.05
15	.12	.28	e.06	e.15	e.15	.84	.59	.24	.21	2.0	e.20	e.05
16	.12	e.15	e.05	e.15	e.15	.77	.64	.21	.53	1.2	e.20	e.05
17	.12	e.20	e.05	e.15	e.15	.69	.63	.18	.89	.96	e.20	e.05
18	.14	e.20	e.05	e.15	e.15	.67	.57	.17	.82	.84	e.20	e.05
19	.15	e.20	e.05	e.15	e.15	.69	.51	.15	.53	e.50	e.20	e.05
20	.13	e.20	e.05	e.15	e.15	.77	.51	.15	.38	e.30	e.20	e.05
21	.13	e.20	e.05	e.15	e.15	.75	.50	.14	.32	e.20	e.20	e.05
22	.13	e.20	e.05	e.15	e.15	.70	.45	.13	.37	e.30	e.20	e.05
23	.13	e.20	e.05	e.15	e.30	.63	.39	.13	.51	e.30	e.20	e.05
24	.13	e.20	e.05	e.15	e.30	.61	.39	.12	.64	e.30	e.20	e.05
25	.13	e.20	e.05	e.15	e.50	.60	.38	.13	.71	e.30	e.20	e.05
26	.13	e.15	e.05	e.15	e.50	.58	.34	.16	.76	e.30	e.20	e.05
27	.13	e.06	e.10	e.15	e.60	.58	.37	.16	.77	e.30	e.20	e.05
28	.12	e.06	e.10	e.15	e1.0	.55	.34	.14	.77	e.30	e.20	e.05
29	.13	e.06	e.10	e.15	e1.2	.63	.30	.15	.73	e.30	e.20	e.05
30	.14	e.06	e.10	e.15	---	.72	.31	.15	.71	e.30	e.20	e.05
31	.13	---	e.05	e.15	---	.75	---	.17	---	e.30	e.20	---
TOTAL	3.68	5.50	1.90	3.75	7.70	24.57	16.12	6.18	11.77	62.34	7.00	1.60
MEAN	.12	.18	.061	.12	.27	.79	.54	.20	.39	2.01	.23	.053
MAX	.19	.28	.10	.15	1.2	1.3	.93	.33	.89	11	.30	.10
MIN	.06	.06	.05	.05	.15	.55	.30	.12	.11	.20	.20	.05
AC-FT	7.3	11	3.8	7.4	15	49	32	12	23	124	14	3.2

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2000, BY WATER YEAR (WY)*

MEAN	.52	.38	.45	.37	15.6	74.9	17.7	3.79	15.1	11.5	2.04	2.47
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	.000	.000	.000	.000	.000	.045	.070	.023	.003	.000	.000	.000
(WY)	1941	1931	1936	1936	1939	1941	1961	1961	1961	1939	1939	1940

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1929 - 2000*	
ANNUAL TOTAL	734.44		152.11			
ANNUAL MEAN	2.01		.42		12.0**	
HIGHEST ANNUAL MEAN					61.6	1952
LOWEST ANNUAL MEAN					.038	1941
HIGHEST DAILY MEAN	23	Feb 28	11	Jul 11	4510	Mar 31 1952
LOWEST DAILY MEAN	.01	Jul 29	e.05	Dec 16	.00	Oct 8 1929
ANNUAL SEVEN-DAY MINIMUM	.02	Jul 27	.05	Dec 16	.00	Nov 20 1929
INSTANTANEOUS PEAK FLOW			19	Jul 9	a6960	Jun 29 1986
INSTANTANEOUS PEAK STAGE			4.55	Jul 9	12.93	Mar 4 1994
INSTANTANEOUS LOW FLOW					b.00	
ANNUAL RUNOFF (AC-FT)	1460		302		8660	
10 PERCENT EXCEEDS	6.0		.77		7.2	
50 PERCENT EXCEEDS	.25		.19		.20	
90 PERCENT EXCEEDS	.03		.05		.00	

*--During period of operation (1932, 1936, 1938-71, 1975 to current year).
**--Median of yearly discharges, 7.07 ft^3/s.
a--From rating curve extended above 3,500 ft^3/s, gage height, 12.85 ft, from floodmark.
b--No flow at times most years.
e--Estimated.

POPLAR RIVER BASIN

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 48°59'25", long 105°41'46", in $NE^1/_4NE^1/_4SE^1/_4$ 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 above sea level, from topographic map.
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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e10	10	6.9	15	12	4.3	.91	3.0		
2			e11	12	6.6	22	9.9	4.0	1.2	4.0		
3			e11	13	6.2	25	9.9	3.5	1.6	8.8		
4			e11	12	6.1	23	18	3.2	2.1	7.4		
5			e12	13	6.1	22	22	3.7	2.4	5.5		
6			e13	13	6.5	20	28	3.7	2.9	5.0		
7			e12	12	6.6	17	23	4.1	3.3	4.4		
8			e10	11	6.2	15	23	3.6	3.5	4.4		
9			e9.0	10	5.9	14	20	3.0	2.9	4.4		
10			e8.5	10	6.6	16	49	2.8	2.4	4.4		
11			e9.0	10	7.9	17	218	2.6	2.2	4.6		
12			e9.0	10	10	19	134	2.4	1.9	4.6		
13			e9.0	11	12	23	74	2.4	1.8	5.0		
14			e8.5	11	12	26	55	2.1	1.8	5.0		
15			e8.0	11	13	28	42	1.8	1.7	5.0		
16			e8.5	11	13	42	29	1.6	1.6	4.9		
17			e8.5	11	12	41	24	1.4	1.5	5.1		
18			e9.0	11	9.8	47	20	1.3	1.5	4.9		
19			9.9	10	8.5	41	17	1.1	1.7	4.9		
20			9.7	10	7.9	40	15	1.2	1.7	5.0		
21			9.6	10	7.1	33	14	1.2	1.9	5.0		
22			11	10	6.3	30	14	1.2	2.9	5.0		
23			11	10	5.6	27	14	1.1	3.6	4.8		
24			11	11	4.9	24	14	1.1	3.8	5.0		
25			11	11	4.4	22	14	1.0	3.7	5.8		
26			11	10	4.4	21	14	1.0	3.8	8.6		
27			10	10	4.8	18	11	.87	3.9	10		
28			9.8	8.7	4.5	16	8.6	.91	3.8	7.9		
29			10	8.3	4.0	15	7.3	.90	3.8	7.9		
30			10	7.9	3.2	13	5.9	.82	3.9	7.3		
31			10	---	3.8	---	4.9	.83	---	6.6		
TOTAL			311.0	318.9	231.1	732	964.5	64.73	75.71	174.2		
MEAN			10.0	10.6	7.45	24.4	31.1	2.09	2.52	5.62		
MAX			13	13	12	47	218	4.3	3.9	10		
MIN			8.0	7.9	4.2	13	4.9	.82	.91	3.0		
AC-FT			617	633	458	1450	1910	128	150	346		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1931 - 2000*

MEAN	.000	20.2	70.7	84.0	17.3	14.5	8.88	1.57	1.45	2.65	4.90	.000
MAX	.000	61.3	418	699	86.2	191	120	19.4	15.3	11.8	9.35	.000
(WY)	1936	1981	1999	1952	1982	1963	1993	1940	1954	1955	1955	1936
MIN	.000	.000	.000	5.52	3.05	.16	.041	.000	.007	.039	.12	.000
(WY)	1936	1936	1950	1988	1992	1988	1988	1967	1988	1989	1937	1936

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1931 - 2000*	
HIGHEST DAILY MEAN	218	Jul 11	5000	Apr 6 1954
LOWEST DAILY MEAN	.82	Aug 30	.00	Jun 30 1932
INSTANTANEOUS PEAK FLOW	242	Jul 11	a12700	Apr 6 1954
INSTANTANEOUS PEAK STAGE	4.26	Jul 11	10.25	Apr 6 1954

*--Seasonal record most years.
a--From rating curve extended above 2,500 ft^3/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.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	TUR-BID-ITY (NTU) (00076)
OCT 1999												
13...	1215	3.3	699	8.6	1290	3.0	7.5	25	11.3	103	330	2.0
DEC												
20...	1000	E2.0	705	8.0	1420	-14.0	0.0	20	11.5	85	440	2.5
APR 2000												
04...	1530	12	693	8.7	1180	23.0	9.0	40	12.8	122	310	3.0
JUN												
12...	1215	20	700	8.5	1280	22.0	18.5	70	9.6	112	350	--
AUG												
09...	1000	3.2	706	8.7	1140	24.0	20.0	55	7.5	90	270	2.3

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT 1999												
13...	48.4	50.8	7.9	172	4	489	7.9	.5	239	9.2	829	1.13
DEC												
20...	73.7	61.2	8.0	173	4	588	6.9	.5	226	17.1	920	1.25
APR 2000												
04...	50.7	43.4	6.8	151	4	442	6.1	.4	212	9.5	746	1.01
JUN												
12...	46.0	57.7	8.8	181	4	526	5.0	.4	203	3.1	821	1.12
AUG												
09...	32.7	46.8	10.2	158	4	472	6.3	.4	172	1.4	712	0.97

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999												
13...	7.36	<.01	<.05	<.02	.39	<.01	E.03	1190	E10	51	.45	92
DEC												
20...	4.97	<.01	<.05	.04	.28	<.01	<.05	1070	10	75	E.41	83
APR 2000												
04...	24.0	<.01	<.05	<.02	.51	<.01	E.03	831	20	31	1.0	83
JUN												
12...	43.5	<.01	<.05	<.02	.97	.01	<.05	1230	50	260	14	36
AUG												
09...	6.19	<.01	<.05	<.02	.82	.03	.07	1180	20	9	.08	65

E--Estimated.

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)
APR 2000									
04...	1530	11	<15	E1	E2	<1.6	<5	<.1	<.1
AUG									
09...	1000	13	<15	--	6	--	E5	--	<.1

DATE	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
APR 2000									
04...	<.8	<1	<1	E.9	288	<2	<1	9	11
AUG									
09...	--	<1	--	<1	99	--	<1	--	18

DATE	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL (UG/L AS SE) (01147)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
APR 2000								
04...	<.2	<.3	<1	<2	<2	<3	<20	<31
AUG								
09...	--	<.3	--	<2	--	<3	--	<31

E--Estimated.

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 48°59'58", long 105°24'32", in $SW^1/_4SW^1/_4$ 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. Datum of gage is 2,410.92 ft above sea level (International Boundary Survey datum). Prior to Oct. 5, 1953, water-stage recorder at site 80 ft upstream at same datum.

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.0	2.4	2.5	2.5	2.1	2.7	2.5	9.7	17	1.9	2.2	e2.5
2	e3.0	2.2	2.5	2.5	2.2	2.7	2.9	15	4.4	2.1	2.2	e3.0
3	e3.0	2.3	2.5	2.5	2.2	2.7	2.5	17	3.3	2.7	2.4	e3.6
4	e3.5	2.4	2.4	2.4	2.2	2.8	2.5	18	3.0	5.1	2.3	e3.4
5	3.4	2.4	2.4	2.4	2.2	2.9	3.1	18	2.9	2.8	e2.3	e3.0
6	3.1	2.4	2.4	2.4	2.2	3.0	2.4	18	3.7	2.5	2.5	e3.2
7	2.9	2.4	2.4	2.3	2.1	3.0	2.5	18	2.3	2.5	2.3	e3.8
8	2.8	2.4	2.3	2.3	2.2	2.8	2.6	18	1.8	2.4	e2.3	e3.6
9	2.7	2.4	2.3	2.3	2.3	2.6	2.5	17	2.8	3.0	e2.4	3.4
10	2.6	2.4	2.3	2.3	2.2	2.6	2.6	17	3.3	4.4	2.1	e3.0
11	2.6	2.4	2.3	2.2	2.1	2.6	2.6	18	2.9	3.0	2.3	e2.7
12	2.6	2.4	2.3	2.1	2.1	2.6	2.6	18	2.5	2.8	2.1	e2.9
13	2.7	2.4	2.3	2.1	2.1	2.5	2.6	17	4.0	2.4	2.0	e2.9
14	2.8	2.4	2.4	2.1	2.1	2.6	2.5	17	3.3	2.4	2.2	e2.8
15	2.7	2.4	2.3	2.1	2.1	2.5	2.5	18	3.9	2.4	2.2	2.8
16	2.6	2.5	2.3	2.1	2.1	2.4	2.5	18	3.7	2.1	2.3	2.6
17	2.5	2.5	2.3	2.1	2.3	2.5	2.4	18	3.1	2.1	2.3	2.6
18	2.5	2.5	2.4	2.2	2.2	2.6	2.4	18	2.7	2.3	2.1	2.6
19	2.5	2.5	2.4	2.2	2.2	2.6	2.5	18	3.0	2.3	e2.4	2.7
20	2.5	2.5	2.2	2.1	2.2	2.6	2.4	18	4.0	2.6	2.5	2.4
21	2.5	2.5	2.2	2.1	2.2	2.5	2.4	18	2.5	2.7	2.5	2.5
22	2.5	2.4	2.2	2.1	2.8	2.5	2.2	18	2.5	2.6	2.4	2.4
23	2.5	2.4	2.3	2.1	2.9	2.6	2.3	18	4.4	2.2	2.3	2.4
24	2.5	2.5	2.3	2.1	2.8	3.2	2.4	18	2.7	2.5	e2.3	2.7
25	2.5	2.5	2.3	2.0	2.9	3.5	2.4	18	2.7	2.0	2.3	2.5
26	2.5	2.5	2.3	2.0	2.7	2.9	2.4	19	2.7	2.1	2.3	2.7
27	2.6	2.5	2.4	2.1	2.7	2.5	2.4	18	2.5	2.3	2.3	2.5
28	2.5	2.5	2.5	2.2	2.8	2.4	1.8	18	2.3	2.4	e2.2	2.5
29	2.6	2.4	2.5	2.2	2.9	2.5	2.2	18	2.3	1.9	e2.4	2.5
30	2.5	2.5	2.5	2.2	---	2.7	2.3	18	2.2	2.3	e2.8	2.4
31	2.6	---	2.5	2.1	---	2.5	---	19	---	2.5	e2.6	---
TOTAL	83.8	72.9	73.2	68.4	68.1	83.1	73.9	543.7	104.4	79.3	71.8	84.6
MEAN	2.70	2.43	2.36	2.21	2.35	2.68	2.46	17.5	3.48	2.56	2.32	2.82
MAX	3.5	2.5	2.5	2.5	2.9	3.5	3.1	19	17	5.1	2.8	3.8
MIN	2.5	2.2	2.2	2.0	2.1	2.4	1.8	9.7	1.8	1.9	2.0	2.4
AC-FT	166	145	145	136	135	165	147	1080	207	157	142	168
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2000, BY WATER YEAR (WY)												
MEAN	2.61	2.47	2.28	2.21	2.73	23.9	25.3	11.9	5.59	2.91	2.41	2.52
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	.93	1.91	1.80	2.98	1.72	1.79	1.58	1.53
(WY)	1993	1993	1993	1982	1982	1992	1992	1978	1992	1977	1992	1992

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1977 - 2000	
ANNUAL TOTAL	11032.9		1407.2			
ANNUAL MEAN	30.2		3.84		7.25	
HIGHEST ANNUAL MEAN					32.3	1982
LOWEST ANNUAL MEAN					2.13	1992
HIGHEST DAILY MEAN	1710	Mar 24	19	May 26	2930	Apr 15 1982
LOWEST DAILY MEAN	1.8	Jan 3	1.8	Apr 28	a.70	Feb 28 1998
ANNUAL SEVEN-DAY MINIMUM	1.9	Jan 2	2.1	Jan 20	.80	Jan 16 1982
INSTANTANEOUS PEAK FLOW			26	Jun 1	b4020	Apr 23 1975
INSTANTANEOUS PEAK STAGE			6.21	Jun 1	12.80	Mar 25 1943
ANNUAL RUNOFF (AC-FT)	21880		2790		5250	
10 PERCENT EXCEEDS	21		4.1		6.9	
50 PERCENT EXCEEDS	2.8		2.5		2.6	
90 PERCENT EXCEEDS	2.2		2.2		1.7	

*--Since initial filling of Cookson Reservoir.
a--No flow at times prior to filling of Cookson Reservoir.
b--Gage height, 12.01 ft.
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: Water-quality monitor installed April 1995.
REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office. Missing conductivity data for Apr. 5, 6, 10-17 due equipment malfunction.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily observed, 2,040 microsiemens per centimeter (µS/cm) at 25.0°C, Feb. 10-12, 1997; minimum daily observed, 363 microsiemens per centimeter (µS/cm) at 25.0°C, July 2, 1991.
WATER TEMPERATURE (water years 1975-83): 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, 1,650 microsiemens per centimeter (µS/cm) at 25.0°C, Dec. 5; minimum daily, 1,070 µS/cm at 25.0°C, May 5.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT 1999												
13...	1515	2.7	699	100	11.1	8.4	1560	7.0	7.0	410	80.2	50.1
DEC												
20...	1200	2.3	705	39	5.3	7.6	1610	-13.0	0.0	420	83.7	52.3
FEB 2000												
24...	1015	2.6	694	98	13.0	7.9	1340	4.5	0.0	340	67.8	41.9
APR												
04...	1130	2.6	697	110	12.8	8.6	1460	13.0	5.0	350	64.3	46.7
JUN												
12...	1000	2.6	702	83	7.2	8.4	1520	21.0	18.0	370	59.9	53.0
JUL												
10...	1105	4.5	706	68	5.6	8.2	1450	30.0	21.0	330	55.2	45.5

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999												
13...	8.5	4	207	580	6.9	.4	12.5	307	1.6	.85	.09	.02
DEC												
20...	8.4	5	214	608	6.3	.4	15.7	307	1.1	.85	.09	<.01
FEB 2000												
24...	7.7	4	181	498	5.8	.3	12.7	263	1.1	.54	.12	<.01
APR												
04...	8.1	5	204	495	6.5	.3	9.8	296	.53	.06	<.05	<.01
JUN												
12...	9.0	5	233	541	6.1	.3	10.0	307	.98	<.02	<.05	<.01
JUL												
10...	7.8	5	209	520	6.5	.3	10.6	287	.91	.11	<.05	<.01

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	TUR-BID-ITY (NTU) (00076)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999												
13...	<.01	<.05	18	1.39	7.41	1020	3.2	1810	<10	65	.47	60
DEC												
20...	<.01	<.05	20	1.44	6.42	1050	3.5	1860	10	110	.67	66
FEB 2000												
24...	<.01	E.04	25	1.20	6.42	879	4.0	1550	30	77	.55	69
APR												
04...	<.01	E.04	30	1.27	6.46	934	9.0	1740	E10	48	.33	98
JUN												
12...	.02	.06	55	1.37	7.13	1000	22	2010	<10	106	.75	94
JUL												
10...	<.01	.07	39	1.27	11.4	935	9.4	1880	<10	78	.95	92

DATE	TIME	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
APR 2000										
04...	1130	8.0	<15	E2	3	<2	<5	<.1	<.1	<.8
JUL										
10...	1105	8.6	<15	5	7	--	<5	--	<.1	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
APR 2000									
04...	<1	--	<1	<1	589	<2	<1	77	96
JUL									
10...	<1	<2	--	E.9	509	--	<1	--	53

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
APR 2000									
04...	<.2	<.3	--	<1	E1	<2	<3	<20	E15
JUL									
10...	--	<.3	1.7	--	E1	<2	<3	--	<31

DATE	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
OCT 01 1999-SEP 30 2000	2.1

E--Estimated.

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1490	1580	1590	1560	1460	1370	1460	1620	1360	1460	1440	1490
2	1500	1570	1580	1560	1450	1370	1460	1540	1360	1460	1450	1490
3	1510	1570	1590	1560	1440	1370	1460	1230	1360	1450	1450	1490
4	1510	1570	1590	1560	1440	1370	1460	1110	1370	1450	1450	1500
5	1520	1580	1590	1560	1440	1380	---	1090	1370	1450	1450	1500
6	1520	1570	1590	1550	1430	1380	---	1080	1370	1450	1450	1500
7	1530	1570	1590	1540	1430	1380	1480	1100	1380	1450	1450	1500
8	1540	1570	1590	1540	1420	1380	1490	1110	1380	1440	1450	1500
9	1540	1570	1590	1540	1420	1390	1510	1140	1390	1440	1450	1500
10	1540	1580	1590	1540	1420	1390	---	1130	1390	1440	1450	1510
11	1550	1570	1590	1540	1420	1400	---	1140	1390	1440	1450	1520
12	1550	1570	1590	1530	1410	1400	---	1150	1480	1440	1460	1520
13	1550	1580	1600	1520	1410	1400	---	1160	1520	1440	1460	1530
14	1550	1580	1600	1520	1410	1410	---	1180	1510	1440	1460	1530
15	1560	1570	1600	1520	1400	1410	---	1190	1510	1440	1460	1530
16	1560	1580	1600	1510	1400	1410	---	1190	1500	1440	1460	1540
17	1560	1580	1600	1510	1400	1420	---	1210	1500	1440	1460	1540
18	1560	1580	1600	1510	1390	1420	1520	1220	1490	1440	1460	1540
19	1560	1580	1610	1500	1390	1420	1530	1230	1490	1440	1460	1540
20	1560	1580	1610	1500	1380	1430	1540	1230	1490	1440	1470	1540
21	1560	1580	1610	1500	1370	1430	1540	1250	1480	1430	1460	1530
22	1560	1580	1600	1490	1370	1430	1550	1260	1480	1430	1460	1540
23	1560	1580	1600	1490	1360	1430	1560	1270	1480	1440	1470	1550
24	1560	1580	1600	1480	1340	1440	1560	1280	1480	1440	1470	1550
25	1570	1580	1590	1480	1350	1430	1570	1290	1480	1440	1480	1550
26	1570	1590	1590	1480	1350	1430	1580	1300	1470	1440	1490	1550
27	1570	1590	1580	1470	1360	1440	1590	1310	1470	1440	1480	1550
28	1570	1590	1580	1460	1360	1440	1600	1330	1480	1440	1480	1560
29	1570	1580	1570	1470	1370	1440	1610	1340	1470	1440	1480	1530
30	1570	1580	1570	1460	---	1450	1620	1350	1470	1440	1480	1510
31	1570	---	1570	1460	---	1450	---	1360	---	1440	1480	---
MEAN	1550	1580	1590	1510	1400	1410	---	1240	1450	1440	1460	1520
MAX	1570	1590	1610	1560	1460	1450	---	1620	1520	1460	1490	1560
MIN	1490	1570	1570	1460	1340	1370	---	1080	1360	1430	1440	1490

POPLAR RIVER BASIN

06181000 POPLAR RIVER NEAR POPLAR, MT

LOCATION.--Lat 48°10'15", long 105°10'42", in $NE^1/_4NE^1/_4$ 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. Datum of gage is 1,953.16 ft above sea level. Prior to May 1, 1911, nonrecording gage at site 4.2 mi upstream at different datum. May 1, 1911, to Oct. 4, 1913, nonrecording gage at site 14 mi upstream at different datum. Oct. 5, 1913, to Oct. 31, 1924, nonrecording gage at site 2.2 mi upstream at different datum. Aug. 10, 1947, to Sept. 30, 1969, water-stage recorder at present site and datum.

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	41	e34	e10	e10	e70	57	40	42	81	43	19
2	21	42	e34	e10	e10	e75	61	39	52	72	40	e19
3	21	40	e34	e10	e10	e75	57	37	51	88	39	e20
4	22	42	e34	e10	e10	e80	56	36	72	322	36	e21
5	22	44	e34	e10	e10	e85	54	36	79	271	42	e22
6	22	43	e34	e10	e10	e90	53	36	86	189	38	e21
7	22	46	e34	e10	e11	e85	51	37	87	134	34	e20
8	22	48	e34	e10	e12	e80	52	36	79	115	31	19
9	23	48	e34	e10	e11	e80	50	35	80	117	30	21
10	24	47	e34	e10	e10	e80	48	36	122	162	28	24
11	24	47	e34	e10	e10	e80	48	41	122	152	27	24
12	26	47	e34	e10	e10	e80	48	45	127	123	26	22
13	28	47	e34	e10	e10	e80	50	45	125	132	24	22
14	29	46	e34	e10	e10	e85	52	43	144	251	23	22
15	29	45	e32	e10	e10	e90	52	43	136	222	21	21
16	30	45	e32	e10	e10	e85	50	43	128	212	20	20
17	32	47	e30	e10	e10	e80	53	43	133	207	20	19
18	35	47	e28	e10	e10	77	54	40	160	181	21	19
19	36	48	e15	e10	e10	77	50	42	164	159	20	19
20	36	49	e13	e10	e10	78	48	46	157	138	21	19
21	37	49	e10	e10	e10	72	47	45	174	122	18	20
22	36	49	e11	e10	e10	63	45	41	166	108	18	19
23	36	e34	e11	e10	e10	65	43	38	144	98	18	19
24	36	e32	e11	e10	e15	65	43	35	133	87	17	19
25	36	e36	e11	e10	e30	66	42	32	124	82	17	20
26	36	e36	e11	e10	e60	62	43	33	113	77	16	21
27	37	e36	e11	e10	e70	61	43	36	106	69	16	22
28	37	e30	e10	e10	e70	57	41	34	100	62	17	24
29	38	e32	e10	e10	e70	56	40	31	92	58	19	24
30	39	e34	e10	e10	---	58	41	31	86	52	19	23
31	40	---	e10	e10	---	58	---	32	---	47	22	---
TOTAL	932	1277	742	310	549	2295	1472	1187	3384	4190	781	624
MEAN	30.1	42.6	23.9	10.0	18.9	74.0	49.1	38.3	113	135	25.2	20.8
MAX	40	49	34	10	70	90	61	46	174	322	43	24
MIN	20	30	10	10	10	56	40	31	42	47	16	19
AC-FT	1850	2530	1470	615	1090	4550	2920	2350	6710	8310	1550	1240
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 2000, BY WATER YEAR (WY)												
MEAN	28.3	26.5	16.4	8.46	27.9	336	691	125	86.5	78.8	27.8	24.5
MAX	81.5	93.5	50.0	30.0	743	2445	4918	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	.013	.10	.18	37.3	17.4	2.77	.68	.043	.15
(WY)	1959	1959	1986	1950	1959	1965	1992	1992	1988	1984	1988	1988

06181000 POPLAR RIVER NEAR POPLAR, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1908 - 2000*	
ANNUAL TOTAL	88893.5		17743			
ANNUAL MEAN	244		48.5		123**	
HIGHEST ANNUAL MEAN					435	1952
LOWEST ANNUAL MEAN					13.7	1988
HIGHEST DAILY MEAN	6510	Mar 27	322	Jul 4	34200	Apr 7 1954
LOWEST DAILY MEAN	3.0	Jan 24	10	Dec 21	a.00	Dec 16 1917
ANNUAL SEVEN-DAY MINIMUM	3.1	Jan 23	10	Dec 28	.00	Jan 4 1950
INSTANTANEOUS PEAK FLOW			575	Jul 4	37400	Apr 6 1954
INSTANTANEOUS PEAK STAGE			4.66	Jul 4	b17.86	Apr 6 1954
ANNUAL RUNOFF (AC-FT)	176300		35190		88780	
10 PERCENT EXCEEDS	290		107		180	
50 PERCENT EXCEEDS	35		36		23	
90 PERCENT EXCEEDS	4.5		10		2.5	

*--During period of operation (1908-24, 1947-69, 1975-79, 1982 to current year).
**--Median of yearly mean discharge, 84.9 ft^3/s.
a--No flow at times.
b--From floodmark, from slope-area measurement of peak flow.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-81, 1987-94, May 1999 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Seasonal operation from April to September 2000.

INSTRUMENTATION.--Temperature recorder installed Sept. 27, 1999.

REMARKS.--Missing data from Sept. 2-7 due to equipment failure. Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 30.0°C, July 29, 2000; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of seasonal operation, maximum, 30.0°C, July 29; minimum, 0.5°C, Apr. 14.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
13...	0900	28	8.8	1720	2.0	9.0	<.001
MAR 2000							
23...	1030	72	8.8	1170	6.0	4.5	<.001
MAY							
11...	1045	43	8.7	1490	8.0	14.0	<.001
AUG							
16...	0945	22	8.8	1650	23.0	19.0	<.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
13...	.007	.75	.003	.014	65	4.8	88
MAR 2000							
23...	<.005	.37	.001	.020	67	13	96
MAY							
11...	<.005	.55	<.001	.026	78	9.1	98
AUG							
16...	<.005	.98	.003	.085	125	7.5	99

06181000 POPLAR RIVER NEAR POPLAR, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT 1999											
13...	0900	230	32	38	6.5	9	300	521	94	.5	6.1
MAY 2000											
11...	1045	210	27	34	6.0	8	270	496	67	.5	4.4

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
OCT 1999											
13...	270	1060	1.45	79.2	E2	<.1	E.5	2	<1	E2	<31
MAY 2000											
11...	260	966	1.31	112	E2	<.1	E.5	3	<1	4	4

E--Estimated.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1							7.0	3.5	5.5	19.0	11.5	15.5
2							5.5	3.5	4.5	19.5	14.0	17.0
3							7.0	2.0	4.5	20.0	14.0	17.0
4							10.5	4.0	7.0	19.5	15.0	17.5
5							9.5	6.0	7.5	17.5	13.5	15.5
6							6.0	4.0	5.0	18.0	12.0	15.0
7							7.0	3.5	5.0	15.5	13.0	14.5
8							9.5	3.0	6.0	16.5	10.5	13.5
9							9.5	5.0	7.0	16.5	11.5	14.0
10							7.5	4.5	6.0	18.5	12.5	15.5
11							9.5	3.0	6.0	15.5	12.5	14.0
12							11.0	6.0	8.0	12.5	7.5	9.5
13							9.5	3.0	6.5	12.0	6.5	9.5
14							4.5	.5	2.5	16.0	8.0	12.0
15							7.0	1.0	4.0	18.0	12.0	14.5
16							9.5	2.5	6.0	19.5	12.5	16.0
17							13.0	6.0	9.5	19.0	13.0	16.0
18							14.0	9.0	11.0	19.5	13.0	16.0
19							14.0	8.0	11.0	19.5	14.5	17.0
20							15.5	8.5	12.0	21.5	15.5	18.0
21							17.0	11.5	14.0	21.5	16.5	19.0
22							18.0	11.5	14.5	20.0	17.0	18.5
23							15.0	12.5	13.5	20.5	16.0	18.0
24							15.0	11.5	13.5	20.0	13.5	17.0
25							16.0	10.5	13.5	23.0	14.5	17.0
26							14.5	12.0	13.0	18.0	15.5	17.0
27							17.0	9.5	13.5	21.5	14.0	17.5
28							16.5	11.5	14.0	22.0	17.0	19.5
29							14.0	12.0	13.0	19.5	16.5	17.5
30							16.5	10.0	13.5	22.0	16.0	19.0
31							---	---	---	19.0	12.0	14.5
MONTH							18.0	0.5	9.0	23.0	6.5	16.0

POPLAR RIVER BASIN

06181000 POPLAR RIVER NEAR POPLAR, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.5	11.0	12.0	26.5	23.0	24.5	27.5	23.5	25.5	16.5	14.5	15.5
2	18.5	10.5	14.5	26.5	23.5	25.0	25.5	23.0	24.5	---	---	---
3	17.5	14.5	16.0	25.5	22.5	23.5	26.0	21.5	23.5	---	---	---
4	20.5	13.5	17.0	23.5	21.0	22.5	27.0	22.0	24.5	---	---	---
5	23.5	16.0	19.5	24.5	21.0	22.5	25.5	22.5	24.0	---	---	---
6	24.0	18.5	21.0	25.0	22.5	23.5	26.0	21.0	23.5	---	---	---
7	26.5	20.5	23.5	26.0	22.5	24.5	25.0	21.5	23.5	---	---	---
8	25.5	21.0	23.0	27.5	23.5	25.5	24.5	20.5	22.5	21.0	15.0	18.0
9	21.5	19.0	20.0	26.5	24.0	25.0	25.5	20.5	23.0	18.0	14.0	15.5
10	23.0	18.5	20.5	26.0	22.5	24.0	26.0	21.5	24.0	16.5	12.0	14.5
11	23.5	19.5	21.5	26.5	23.5	25.0	26.5	22.0	24.0	17.0	12.0	14.5
12	22.5	19.5	21.0	27.5	23.5	25.5	26.0	21.0	23.5	18.5	12.5	15.5
13	20.5	18.5	19.5	29.5	25.0	27.0	26.0	21.0	23.5	20.0	15.5	17.5
14	21.5	17.0	19.0	29.0	26.5	28.0	24.5	21.0	23.0	19.5	13.5	16.5
15	20.0	18.0	19.0	28.5	25.5	27.5	23.5	18.5	21.0	20.5	14.5	17.5
16	18.0	17.0	17.5	25.5	23.0	24.5	23.5	19.0	21.0	21.0	16.0	18.5
17	19.0	17.0	17.5	24.0	20.5	22.0	23.5	18.5	21.0	22.0	16.5	19.0
18	21.0	17.0	19.0	23.0	19.5	21.0	23.0	18.5	20.5	20.0	17.0	18.0
19	20.5	19.0	19.5	23.0	20.5	22.0	21.5	19.5	20.5	17.0	13.0	15.0
20	19.0	17.0	18.0	22.0	20.0	21.0	20.5	18.0	19.5	14.0	11.0	12.5
21	20.0	15.0	17.5	24.5	19.5	22.0	21.0	15.5	18.0	12.5	8.0	10.5
22	21.5	18.5	20.0	26.5	22.0	24.0	22.0	16.5	19.0	9.0	6.5	7.5
23	22.5	19.5	21.0	27.0	23.5	25.0	22.0	17.5	20.0	11.5	6.5	8.5
24	22.5	19.5	21.0	25.5	23.0	24.0	21.0	17.5	19.5	12.5	6.5	9.5
25	22.0	19.0	20.5	26.0	21.0	23.5	23.5	18.5	21.0	14.0	8.0	11.0
26	21.0	19.0	20.0	26.5	22.5	24.5	23.0	19.0	21.0	15.5	10.0	12.5
27	21.5	17.5	19.5	26.5	22.5	24.5	22.5	18.0	20.5	16.5	11.0	13.5
28	23.0	18.0	20.5	28.5	23.0	25.5	21.5	18.0	19.5	16.0	11.5	14.0
29	24.0	19.5	22.0	30.0	24.5	27.0	21.5	16.5	19.0	16.5	11.5	14.0
30	25.5	21.0	23.0	28.5	25.0	27.0	19.5	15.5	17.0	17.0	12.5	15.0
31	---	---	---	28.0	24.5	26.5	19.0	14.5	16.5	---	---	---
MONTH	26.5	10.5	19.5	30.0	19.5	24.5	27.5	14.5	21.5	---	---	---

BIG MUDDY CREEK BASIN

06183450 BIG MUDDY CREEK NEAR ANTELOPE, MT

LOCATION.--Lat 48°40'22", long 104°30'42", in $SW^1/_4SW^1/_4NW^1/_4$ 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 above sea level, from topographic map.
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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	6.8	7.1	e3.5	e1.5	e5.0	29	13	6.9	15	2.8	1.8
2	4.3	6.7	7.1	e3.5	e1.5	e15	29	12	8.7	13	3.6	2.0
3	4.4	7.0	7.1	e3.5	e1.5	e14	28	12	16	12	4.2	2.2
4	4.3	7.2	6.2	e3.0	e1.5	14	29	12	13	23	3.9	2.4
5	4.9	7.0	7.4	e3.0	e1.5	14	30	11	15	33	3.7	2.6
6	5.4	6.5	7.1	e3.5	e1.5	17	29	11	34	39	3.8	2.7
7	5.8	6.9	7.2	e3.5	e1.4	24	29	10	25	78	13	2.8
8	5.8	7.0	7.0	e3.5	e1.3	25	29	9.8	22	76	25	2.8
9	7.3	7.0	6.7	e3.5	e1.3	28	27	9.0	20	53	18	2.9
10	10	7.3	6.2	e3.5	e1.3	23	27	9.3	28	50	13	3.2
11	9.4	7.7	5.6	e3.5	e1.3	24	27	12	29	47	11	3.8
12	9.2	7.9	5.6	e3.5	e1.3	22	25	13	28	41	9.4	4.7
13	9.1	8.9	5.6	e3.5	e1.3	17	24	12	28	44	7.7	5.5
14	9.0	9.0	5.4	e4.0	e1.2	16	25	11	36	53	6.2	4.3
15	7.2	8.7	4.7	e4.0	e1.2	13	22	12	48	40	5.1	4.3
16	6.6	8.7	4.7	e4.0	e1.2	11	19	12	51	30	4.2	3.1
17	7.3	8.6	e4.7	e4.0	e1.1	12	19	14	64	25	4.1	2.6
18	8.5	8.5	e4.5	e4.0	e1.1	14	18	14	65	20	6.1	2.6
19	8.6	8.3	e4.0	e4.0	e1.0	16	18	15	60	17	5.9	2.7
20	8.0	8.2	e3.0	e4.0	e1.1	18	18	17	60	14	5.3	3.0
21	8.7	8.2	e3.5	e4.0	e1.2	23	17	16	53	12	4.2	2.9
22	8.8	8.0	e4.0	e3.5	e1.2	28	16	15	57	11	3.5	2.8
23	8.5	7.5	e4.0	e3.5	e1.2	23	15	13	115	9.8	2.9	2.7
24	8.2	7.8	e4.0	e3.0	e1.5	29	15	9.9	135	8.7	2.5	2.7
25	8.4	7.9	e4.0	e3.5	e3.0	30	14	8.5	80	7.8	2.3	2.9
26	8.9	7.8	e4.0	e3.5	e4.0	30	15	7.9	49	6.7	2.0	3.1
27	13	7.9	e4.0	e3.5	e5.0	33	12	10	36	6.2	1.8	3.0
28	10	6.9	e4.5	e3.0	e5.0	29	5.6	11	28	4.8	1.9	3.0
29	8.8	6.9	e4.5	e2.5	e4.0	30	6.9	8.7	22	3.5	1.9	3.2
30	5.8	6.8	e4.5	e2.5	---	30	13	6.0	18	2.6	1.6	3.8
31	4.9	---	e4.0	e2.0	---	29	---	6.1	---	2.2	1.6	---
TOTAL	233.6	229.6	161.9	107.0	52.2	656.0	630.5	353.2	1250.6	798.3	182.2	92.1
MEAN	7.54	7.65	5.22	3.45	1.80	21.2	21.0	11.4	41.7	25.8	5.88	3.07
MAX	13	9.0	7.4	4.0	5.0	33	30	17	135	78	25	5.5
MIN	4.3	6.5	3.0	2.0	1.0	5.0	5.6	6.0	6.9	2.2	1.6	1.8
AC-FT	463	455	321	212	104	1300	1250	701	2480	1580	361	183

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 2000, BY WATER YEAR (WY)

MEAN	5.41	5.78	3.66	1.95	27.1	133	122	25.8	16.1	27.9	9.50	4.67
MAX	25.0	11.8	6.86	6.38	290	851	826	120	62.0	226	92.5	35.7
(WY)	1987	1999	1982	1983	1996	1999	1982	1979	1979	1993	1987	1997
MIN	.14	.88	.45	.000	.000	9.58	5.04	5.29	.23	.031	.000	.000
(WY)	1989	1989	1986	1989	1989	1991	1988	1992	1988	1985	1984	1984

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1979 - 2000	
ANNUAL TOTAL	32717.6		4747.2			
ANNUAL MEAN	89.6		13.0		31.9*	
HIGHEST ANNUAL MEAN					93.2	1979
LOWEST ANNUAL MEAN					4.73	1992
HIGHEST DAILY MEAN	3160	Mar 23	135	Jun 24	3160	Mar 23 1999
LOWEST DAILY MEAN	1.0	Jan 25	1.0	Feb 19	c.00	Aug 2 1981
ANNUAL SEVEN-DAY MINIMUM	1.0	Jan 25	1.1	Feb 14	.00	Jul 23 1984
INSTANTANEOUS PEAK FLOW			a151	Jun 24	3190	Mar 22 1999
INSTANTANEOUS PEAK STAGE			b11.32	Feb 19	17.37	Apr 14 1982
INSTANTANEOUS LOW FLOW					.00	Aug 2 1981
ANNUAL RUNOFF (AC-FT)	64900		9420		23100	
10 PERCENT EXCEEDS	120		29		38	
50 PERCENT EXCEEDS	7.9		7.4		4.7	
90 PERCENT EXCEEDS	1.3		2.4		.20	

*--Median of yearly mean discharge, 20.9 ft^3/s.
a--Gage height, 4.67 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", in $SE^1/_4NW^1/_4SE^1/_4$ 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 season (seasonal records).

GAGE.--Water-stage recorder. Elevation of gage is 1,940 ft above sea level, from topographic map.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e4.0	e26	5.8	.00	15	.73	.00	.00		
2			e10	e26	6.9	.00	12	.13	.00	.00		
3			e9.5	e26	7.8	.00	11	.01	.00	.00		
4			e10	e27	7.8	.00	11	.00	.00	.00		
5			e10	e28	7.6	.00	17	.00	.00	.00		
6			e12	e26	7.5	.02	18	.00	.00	.00		
7			e20	e24	7.1	.25	21	.00	.00	.00		
8			e22	e24	6.9	6.3	34	.00	.00	.00		
9			e24	e22	4.1	7.5	52	.00	.00	.00		
10			e18	e22	.00	7.8	46	6.4	.00	.00		
11			e20	e22	.00	9.4	39	13	.00	.00		
12			e18	e20	.00	9.7	36	10	.00	.00		
13			e14	e20	.00	13	32	7.5	.00	.00		
14			e10	e22	.00	21	28	4.1	.00	.00		
15			e8.5	e18	.00	23	34	2.7	.00	.00		
16			e7.5	e16	.00	26	32	.89	.00	.00		
17			e7.5	e14	.00	28	25	.13	.00	.00		
18			e8.0	e14	.00	25	19	.00	.00	.00		
19			e10	e14	.00	26	15	.00	.00	.00		
20			e12	e14	.00	27	12	.00	.00	.00		
21			e15	e12	.13	27	8.9	.00	.00	.00		
22			e20	e10	.01	27	6.2	.00	.00	.01		
23			e15	e9.4	.00	26	4.1	.00	.00	.10		
24			e20	e9.0	.00	31	2.4	.00	.00	.00		
25			e25	e8.8	.00	42	1.8	.00	.00	.00		
26			e25	9.8	.00	42	1.0	.00	.00	.01		
27			e28	10	.00	35	2.4	.00	.00	.00		
28			e25	9.8	.00	29	4.8	.00	.00	.00		
29			e26	8.0	.00	24	3.3	.00	.00	.00		
30			e26	6.7	.00	19	3.1	.00	.00	.06		
31			e25	---	.00	---	2.2	.00	---	.41		
TOTAL			505.0	518.5	61.64	531.97	549.2	45.95	0.00	0.59		
MEAN			16.3	17.3	1.99	17.7	17.7	1.48	.000	.019		
MAX			28	28	7.8	42	52	13	.00	.41		
MIN			4.0	6.7	.00	.00	1.0	.00	.00	.00		
AC-FT			1000	1030	122	1060	1090	91	.00	1.2		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985-1991, AND SEASONS 1992 - 2000*

MEAN			94.2	52.1	14.6	9.14	27.8	6.90	4.24	3.35		
MAX			434	260	46.5	28.5	144	31.3	37.3	7.97		
(WY)			1999	1997	1999	1994	1993	1987	1997	1999		
MIN			.008	.000	.000	.000	.000	.000	.000	.000		
(WY)			1988	1988	1987	1987	1987	1988	1987	1988		

SUMMARY STATISTICS	FOR 2000 SEASON		WATER YEARS 1985-1991*		1992 - 2000 SEASONS*	
ANNUAL MEAN			14.5			
HIGHEST ANNUAL MEAN			31.6	1989		
LOWEST ANNUAL MEAN			.17	1988		
HIGHEST DAILY MEAN	52	Jul 9	1300	Mar 2 1986	1340	Mar 23 1999
LOWEST DAILY MEAN	.00	May 10	a.00	Feb 11 1986	.00	Sep 22 1992
ANNUAL SEVEN-DAY MINIMUM			.00	Feb 11 1986	.00	Sep 22 1992
INSTANTANEOUS PEAK FLOW	53	Jul 9	b1300	Mar 2 1986	c1360	Mar 23 1999
INSTANTANEOUS PEAK STAGE	6.96	Jul 9			d' 18	Jul 24 1993
INSTANTANEOUS LOW FLOW			.00	Feb 11 1986		
ANNUAL RUNOFF (AC-FT)			10540			
10 PERCENT EXCEEDS			29			
50 PERCENT EXCEEDS			2.6			
90 PERCENT EXCEEDS			.00			

*--During period of operation 1985-91, 1992 to current year. Seasonal records beginning water year 1992.
a-No flow at times most years.
b-Daily.
c-Gage height, 10.99 ft.
d-Site and datum then in use.
e-Estimated.

BIG MUDDY CREEK BASIN

06183750 LAKE CREEK NEAR DAGMAR, MT

LOCATION.--Lat 48°33'51", long 104°10'38", in $SE^1/_4SE^1/_4SW^1/_4$ 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 above sea level, from topographic map.

REMARKS.--Records poor. 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e.45	.55	e.00	e.30	.36	.40	e.00	e.00		
2			e.45	.45	e.00	e.30	.33	.43	e.00	e.00		
3			e.45	.41	e.00	e.30	.37	.46	e.00	e.00		
4			e.45	.43	e.00	e.30	.42	.46	e.00	e.00		
5			e.45	.42	e.00	e.30	.42	.45	e.00	e.00		
6			e.45	.44	e.00	e.40	.43	.42	e.00	e.00		
7			e.45	.57	e.00	2.0	.44	.39	e.00	e.00		
8			e.45	.64	e.00	1.8	.45	.38	e.00	e.00		
9			e.10	.50	e.00	7.6	.46	.37	e.00	e.00		
10			e.00	.49	e.00	8.4	.61	.37	e.00	e.00		
11			e.00	.48	e.00	6.0	4.5	.30	e.00	e.00		
12			e.00	.50	e.00	5.0	4.4	.26	e.00	e.00		
13			e.00	.48	e.00	6.5	3.4	.24	e.00	e.00		
14			e.00	1.1	e.00	6.7	2.8	.23	e.00	e.00		
15			e.00	2.3	e.20	6.1	2.2	.22	e.00	e.00		
16			e.00	1.3	e.25	e5.5	1.8	.22	e.00	e.00		
17			e.00	.53	e.30	e5.0	1.6	.21	e.00	e.00		
18			e.00	.53	e.30	e4.5	1.4	.20	e.00	e.00		
19			e.00	.50	e.30	e4.0	1.0	.18	e.00	e.00		
20			e.00	.46	e.45	e3.5	.60	.19	e.00	e.00		
21			e.00	.44	e.35	e3.0	.48	.17	e.00	e.00		
22			e.00	.42	e.30	2.5	.51	.13	e.00	e.00		
23			e.00	.40	e.30	1.2	.46	.10	e.00	e.00		
24			e.00	.39	e.30	.85	.45	.09	e.00	e.00		
25			e.00	.39	e.25	.42	.45	.08	e.00	e.00		
26			e.10	e.00	e.20	.41	.44	.07	e.00	e.00		
27			.26	e.00	e.25	.41	.45	.02	e.00	e.00		
28			.35	e.00	e.20	.39	.45	.00	e.00	e.00		
29			.34	e.00	e.20	.38	.47	.00	e.00	e.00		
30			.40	e.00	e.20	.38	.45	e.00	e.00	e.00		
31			.57	---	e.25	---	.43	e.00	---	e.00		
TOTAL			5.72	15.12	4.60	84.44	33.03	7.04	0.00	0.00		
MEAN			.18	.50	.15	2.81	1.07	.23	.000	.000		
MAX			.57	2.3	.45	8.4	4.5	.46	.00	.00		
MIN			.00	.00	.00	.30	.33	.00	.00	.00		
AC-FT			11	30	9.1	167	66	14	.00	.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1986 - 2000*

MEAN	7.41	10.7	1.03	.38	.41	.049	.000	.000
MAX	28.3	45.1	3.35	2.81	1.40	.26	.000	.000
(WY)	1997	1997	1986	2000	1999	1999	1986	1985
MIN	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1988	1988	1998	1997	1986	1986	1986	1985

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1986 - 2000	
HIGHEST DAILY MEAN	8.4	Jun 10	275	Mar 29 1997
LOWEST DAILY MEAN	.00	Oct 1	c.00	Oct 1 1985
INSTANTANEOUS PEAK FLOW	14	Jun 9	a356	Mar 29 1999
INSTANTANEOUS PEAK STAGE	6.45	Jun 9	b9.14	Mar 28 1999

*--During period of operation (September 1985 to October 1989, March 1995 to current year).
a--Gage height, 8.52 ft.
b--Backwater from ice.
c--No flow many days most years.
e--Estimated.

BIG MUDDY CREEK BASIN

06183800 COTTONWOOD CREEK NEAR DAGMAR, MT

LOCATION.--Lat 48°30'35", long 104°10'23", in $SE^1/_4NE^1/_4SE^1/_4$ 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 above sea level, from topographic map.

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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e.50	.80	.70	.53	1.3	.48	.13	.07		
2			e.50	.87	.54	.47	1.2	.59	.26	.06		
3			e.50	1.0	.45	.50	1.8	.94	.22	.06		
4			e.50	1.1	.45	.47	11	.75	.15	.06		
5			e.50	1.1	.40	.48	34	1.3	.13	.07		
6			e1.0	1.1	.37	.45	32	1.1	.13	.07		
7			e1.0	1.2	.37	.40	22	.88	.10	.08		
8			e1.0	1.1	.30	1.6	11	.67	.09	.08		
9			.93	1.2	.27	2.7	10	.48	.07	.08		
10			.98	1.2	.24	19	16	.34	.06	.08		
11			.98	.99	.21	21	55	.28	.05	.09		
12			.95	.92	.21	6.6	46	.31	.05	.10		
13			.91	.82	.17	6.1	29	.25	.05	.10		
14			.87	1.0	.16	25	18	.21	.06	.11		
15			.81	1.1	.26	37	11	.16	.06	.13		
16			.72	1.2	.31	59	7.6	.12	.05	.13		
17			.77	1.4	.41	65	5.4	.11	.05	.13		
18			.87	1.4	.42	53	4.2	.11	.06	.12		
19			.89	1.2	.49	37	3.4	.10	.06	.12		
20			.93	1.0	.68	23	3.0	.11	.06	.12		
21			.87	.87	.66	14	2.4	.10	.07	.11		
22			.77	.86	.53	9.5	2.1	.09	.09	.10		
23			.70	.81	.60	6.8	1.8	.08	.09	.10		
24			.90	.78	.43	5.1	1.5	.07	.09	.10		
25			.96	.74	.37	4.0	1.3	.08	.08	.10		
26			.86	.77	.39	3.2	1.1	.08	.09	.10		
27			.79	.84	.57	2.6	.99	.06	.09	.10		
28			.73	.91	.42	2.2	.84	.07	.08	.10		
29			.63	.92	.27	1.8	.76	.07	.08	.10		
30			.58	.79	.29	1.6	.64	.06	.07	.10		
31			.75	---	.37	---	.53	.06	---	.10		
TOTAL			24.65	29.99	12.31	410.10	336.86	10.11	2.72	2.97		
MEAN			.80	1.00	.40	13.7	10.9	.33	.091	.096		
MAX			1.0	1.4	.70	65	55	1.3	.26	.13		
MIN			.50	.74	.16	.40	.53	.06	.05	.06		
AC-FT			49	59	24	813	668	20	5.4	5.9		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1986 - 2000, BY CALENDAR YEAR (WY)

MEAN	27.0	9.09	1.34	1.79	7.09	.16	.049	.012
MAX	96.2	32.6	6.95	13.7	27.4	.71	.33	.096
(WY)	1997	1987	1999	2000	1997	1999	1997	2001
MIN	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1988	1988	1988	1987	1986	1986	1986	1986

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1986 - 2000*	
HIGHEST DAILY MEAN	65	Jun 17	545	Mar 27 1997
LOWEST DAILY MEAN	.05	Sep 11	a.00	Oct 1 1985
INSTANTANEOUS PEAK FLOW	68	Jun 16	b646	Mar 27 1997
INSTANTANEOUS PEAK STAGE	3.11	Jun 16	c8.76	Mar 22 1997

*--During period of operation (1985-1989, 1995 to current year; seasonal records only).
a--No flow most years.
b--Gage height, 7.08 ft.
c--Backwater from ice.
e--Estimated.

06183850 SAND CREEK NEAR DAGMAR, MT

LOCATION.--Lat 48°29'38", long 104°16'23", in $SE^1/_4NW^1/_4NW^1/_4$ 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 above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known diversions for irrigation upstream of station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e1.5	1.4	1.5	.00	1.6	.45	.00	.00		
2			e1.5	1.6	1.1	.35	1.4	.43	.00	.00		
3			e1.5	1.9	.74	.53	2.3	.82	.00	.00		
4			e2.0	1.7	.57	.58	13	.93	.00	.00		
5			e2.5	1.9	.41	.71	37	1.8	.00	.00		
6			e2.0	2.1	.35	.73	20	.93	.00	.00		
7			e2.0	1.9	.34	.72	12	.63	.00	.00		
8			e2.0	2.0	.30	1.2	8.1	.49	.00	.00		
9			e2.5	2.2	.29	2.0	6.5	.37	.00	.00		
10			e3.0	2.1	.24	8.2	7.6	.32	.00	.00		
11			e3.0	1.7	.21	21	15	.27	.00	.00		
12			e3.0	1.6	.29	22	14	.21	.00	.00		
13			e3.0	1.4	.29	13	15	.18	.00	.00		
14			e2.0	1.3	.25	11	13	.15	.00	.00		
15			e2.5	1.5	.19	23	9.4	.08	.00	.00		
16			e3.0	1.5	.13	36	6.5	.04	.00	.00		
17			e3.0	1.9	.09	40	4.9	.00	.00	.00		
18			e3.0	1.8	.08	24	4.0	.00	.00	.00		
19			3.0	2.0	.08	15	3.4	.00	.00	.00		
20			3.2	2.0	.08	9.9	3.1	.00	.00	.00		
21			2.6	1.8	.08	7.7	2.8	.00	.00	.00		
22			2.5	1.5	.07	6.2	2.5	.00	.00	.00		
23			2.0	1.1	.04	5.4	2.0	.00	.00	.00		
24			1.8	1.0	.02	4.6	1.6	.00	.00	.00		
25			1.9	.90	.00	3.9	1.3	.00	.00	.00		
26			1.8	.85	.00	3.5	1.0	.00	.00	.00		
27			1.7	.97	.00	3.2	.90	.00	.00	.00		
28			1.8	1.1	.00	2.9	.87	.00	.00	.00		
29			1.5	1.3	.00	2.4	.76	.00	.00	.00		
30			1.2	1.8	.00	2.0	.62	.00	.00	.00		
31			1.4	---	.00	---	.55	.00	---	.00		
TOTAL			69.4	47.82	7.74	271.72	212.70	8.10	0.00	0.00		
MEAN			2.24	1.59	.25	9.06	6.86	.26	.000	.000		
MAX			3.2	2.2	1.5	40	37	1.8	.00	.00		
MIN			1.2	.85	.00	.00	.55	.00	.00	.00		
AC-FT			138	95	15	539	422	16	.00	.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1986 - 2000*

MEAN	9.48	6.31	1.53	1.33	3.48	.36	.080	.000
MAX	33.1	16.7	6.80	9.06	21.6	3.34	.80	.000
(WY)	1999	1987	1999	2000	1997	1997	1997	1986
MIN	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1988	1988	1988	1988	1986	1986	1986	1986

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1986 - 2000*	
HIGHEST DAILY MEAN	40	Jun 17	142	Mar 27 1997
LOWEST DAILY MEAN	.00	Oct 1	a.00	Oct 1 1985
INSTANTANEOUS PEAK FLOW	48	Jul 5	b247	Mar 20 1999
INSTANTANEOUS PEAK STAGE	3.64	Jul 5	c5.80	Mar 26 1997

*--During period of operation (1985-1989, 1995 to current year; seasonal records only).
a--No flow most years.
b--Gage height, 5.66 ft.
c--From floodmark, probable date, backwater from ice.
e --Estimated.

MISSOURI RIVER MAIN STEM

06185500 MISSOURI RIVER NEAR CULBERTSON, MT

(National stream quality accounting network station)

LOCATION.--Lat 48°07'30", long 104°28'20", in $SE^1/_4NW^1/_4$ 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. Datum of gage is 1,883.4 ft above sea level (U.S. Army Corps of Engineers bench mark). July 1 to Nov. 6, 1941, water-stage recorder at site 400 ft upstream at datum 0.11 ft higher. Nov. 7, 1941, to Aug. 17, 1950, water-stage recorder at site 580 ft downstream at present datum. Aug. 18, 1950, to Dec. 31, 1951, nonrecording gage on bridge at present datum. Apr. 1, 1958, to Nov. 1, 1967, water-stage recorder at site 580 ft downstream at present datum.
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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e5790	5700	6000	10200	e9750	e8450	5780	8960	10000	8760	8390	8710
2	5590	5660	7060	10300	e9750	e8800	5680	9540	10100	8720	8460	8810
3	5640	5530	8010	10600	e9700	e8950	5630	9450	10300	9270	8750	9000
4	5730	5760	8280	11300	e9400	e9200	5600	9210	10200	9600	9060	9070
5	5720	5880	8240	e8410	e8600	e9300	5520	9220	9990	10000	8750	8960
6	5710	5670	8150	e10800	e8450	e9000	5780	9470	9850	10200	8730	8890
7	5620	5710	8150	e11200	e8300	e8790	6260	9530	9840	9770	8720	8770
8	5680	5770	8290	e10200	e8300	e8450	6410	9470	10100	10200	8860	8910
9	5630	5550	8970	e10200	e8500	e8100	6460	9360	10500	11100	8790	8890
10	5540	5640	9380	e10200	e8650	e7000	6510	8990	10700	11700	8840	8930
11	5580	5620	9460	e10200	e8500	e6500	6540	8880	10700	13500	8830	8870
12	5720	5460	9400	e10300	e8650	e6500	6580	8980	10700	12800	8930	7440
13	5720	5390	9450	e10700	e8450	e6550	6530	9230	10500	11400	8800	6210
14	5490	5420	9440	e10000	e8250	6680	6470	9490	11000	10800	8710	5780
15	5430	5350	9600	e10300	e8500	6420	6260	9310	11500	10900	8700	5620
16	5540	5340	10000	e10500	e8500	6310	6380	9330	11600	11100	8640	5490
17	5470	5260	10300	e10500	e8050	6200	6490	9370	11400	11400	8670	5530
18	5520	5450	10400	e10500	e8500	6080	6650	9280	11000	11200	8750	5520
19	5680	5740	e10300	e10500	e8500	6130	6820	9260	9950	10800	8720	5750
20	5680	5860	e10300	e10500	e8500	6160	7150	9360	9670	10200	8710	5930
21	5580	5780	e10200	e10500	e8500	6210	7470	9470	9560	9930	8880	5930
22	5540	5700	e10600	e10500	e8500	6090	7610	9200	9440	9820	8760	5960
23	5510	5700	e10300	e9300	e8500	5980	7640	9290	9230	9600	8600	5950
24	5470	5690	e10300	e9500	e8350	5910	7560	9220	9060	9560	8740	5920
25	5480	5680	e10200	e9500	e8350	5910	7500	9250	9030	9470	8750	5890
26	5500	5730	e10100	e9500	e8000	5950	7470	9280	9160	9410	8750	5810
27	5490	5790	e9950	e9500	e8450	5820	7390	9320	9090	9060	8860	5770
28	5600	5740	e9950	e9500	e8450	5770	7340	9100	9070	8640	8890	5810
29	5730	5710	e10100	e9500	e8450	5710	7090	9290	8970	8600	8810	5800
30	5720	5760	e10000	e9500	---	5690	7470	9650	8820	8680	8720	5810
31	5720	---	e10000	e9900	---	5760	---	9730	---	8660	8760	---
TOTAL	173820	169040	290880	314110	249350	214370	200040	288490	301030	314850	271330	209730
MEAN	5607	5635	9383	10130	8598	6915	6668	9306	10030	10160	8753	6991
MAX	5790	5880	10600	11300	9750	9300	7640	9730	11600	13500	9060	9070
MIN	5430	5260	6000	8410	8000	5690	5520	8880	8820	8600	8390	5490
AC-FT	344800	335300	577000	623000	494600	425200	396800	572200	597100	624500	538200	416000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2000, BY WATER YEAR (WY)*

MEAN	10910	9399	9194	9970	10620	10530	10730	9647	9785	10330	11500	11290
MAX	28570	22440	13280	14400	17450	20690	32840	26220	26650	37050	25300	26590
(WY)	1949	1952	1944	1986	1976	1976	1979	1979	1975	1975	1948	1948
MIN	1237	1126	1061	1010	1167	2674	1965	1353	1366	1273	3823	3771
(WY)	1942	1942	1942	1943	1942	1950	1945	1945	1945	1945	1963	1992

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1941 - 2000*	
ANNUAL TOTAL	3629090		2997040			
ANNUAL MEAN	9943		8189		10330	
HIGHEST ANNUAL MEAN					16580	1975
LOWEST ANNUAL MEAN					4083	1942
HIGHEST DAILY MEAN	22400	Mar 28	13500	Jul 11	69200	Mar 27 1943
LOWEST DAILY MEAN	5260	Nov 17	5260	Nov 17	575	Nov 22 1941
ANNUAL SEVEN-DAY MINIMUM	5380	Nov 12	5380	Nov 12	709	Nov 19 1941
INSTANTANEOUS PEAK FLOW			a14200	Jul 12	c78200	Mar 26 1943
INSTANTANEOUS PEAK STAGE			b13.92	Jan 11	b19.66	Apr 14 1979
INSTANTANEOUS LOW FLOW					575	Nov 22 1941
ANNUAL RUNOFF (AC-FT)	7198000		5945000		7482000	
10 PERCENT EXCEEDS	12400		10300		16000	
50 PERCENT EXCEEDS	9960		8720		9600	
90 PERCENT EXCEEDS	5650		5640		4470	

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

(National stream quality accounting network station)

SUMMARY STATISTICS	FOR WATER YEARS 1941-51**		WATER YEARS 1958 - 2000***	
ANNUAL MEAN	9245		10580	
HIGHEST ANNUAL MEAN	14520	1948	16580	1975
LOWEST ANNUAL MEAN	4083	1942	6121	1963
HIGHEST DAILY MEAN	69200	Mar 27 1943	52000	Apr 18 1979
LOWEST DAILY MEAN	575	Nov 22 1941	2000	Nov 20 1964
ANNUAL SEVEN-DAY MINIMUM	709	Nov 19 1941	2130	Nov 19 1964
INSTANTANEOUS PEAK FLOW	c78200	Mar 26 1943	d55000	Mar 23 1960
INSTANTANEOUS PEAK STAGE	b15.12	Mar 26 1943	b19.66	Apr 14 1979
ANNUAL RUNOFF (AC-FT)	6698000		7668000	
10 PERCENT EXCEEDS	21000		15200	
50 PERCENT EXCEEDS	6910		9800	
90 PERCENT EXCEEDS	1400		5940	

*--During period of operation (1941-52, 1958 to current year).
**--Before operational level at Fort Peck Lake was reached.
***--After operational level of Fort Peck Lake was reached.
a--Gage height, 6.86 ft.
b--Backwater from ice.
c--Gage height, 14.80 ft, from rating curve extended above 30,000 ft^3/s.
d--Gage height, 19.14 ft, backwater from ice.
e--Estimated.

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.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1976.

REMARKS.--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 (water years 1965-81): Maximum daily, 941 microsiemens per centimeter (µS/cm) at 25°C, Jan. 19, 1980; minimum daily, 338 microsiemens per centimeter (µS/cm) at 25°C, Mar. 30, 1967.
WATER TEMPERATURE (water years 1965-79): Maximum 24.5°C, July 17, 1966; minimum, 0.0°C, on many days during winter period.
SEDIMENT CONCENTRATION (water years 1972-76): Maximum daily mean, 2,940 mg/L, Aug. 15, 1974; minimum daily mean, 30 mg/L, Jan. 13, 1975.
SEDIMENT LOAD (water years 1972-76): Maximum daily, 147,000 tons, June 5, 1975; minimum daily, 421 tons, Jan. 13, 1975.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT 1999												
05...	1130	5700	724	93	10.4	8.5	618	9.0	8.0	210	51	21
MAR 2000												
20...	1130	6170	717	97	12.1	8.3	632	2.0	3.5	220	53	21
APR												
18...	1200	6670	719	105	11.8	8.6	595	15.0	7.5	200	49	19
MAY												
01...	1215	9050	718	97	10.0	8.4	581	15.0	11.5	200	50	19
JUN												
06...	0800	9870	715	95	8.8	8.5	581	23.0	16.0	210	50	20
JUL												
18...	1215	11400	723	91	8.0	8.4	714	21.0	19.0	210	50	21
AUG												
21...	1100	8950	722	95	8.7	8.5	558	25.0	17.0	210	51	19
SEP												
05...	1030	9020	713	99	8.9	8.4	559	24.0	17.0	200	47	19

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
OCT 1999												
05...	3.8	1	46	171	162	190	4	9.2	.7	7.2	130	.1
MAR 2000												
20...	3.7	1	49	174	157	187	2	8.5	.8	6.5	140	.2
APR												
18...	3.6	1	42	165	161	187	4	8.4	.9	6.6	130	.1
MAY												
01...	3.5	1	40	159	163	191	4	8.0	.8	6.8	120	.2
JUN												
06...	3.6	1	43	166	164	191	5	8.1	.7	6.9	120	.1
JUL												
18...	4.4	2	67	171	174	203	5	9.1	.9	7.6	190	.2
AUG												
21...	3.4	1	39	161	152	179	3	8.3	.8	7.2	120	.2
SEP												
05...	3.5	1	38	158	157	184	4	8.1	.7	7.0	120	.1

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
OCT 1999												
05...	.4	.003	<.005	.001	.010	.007	.09	2.8	.4	.54	6140	399
MAR 2000												
20...	.3	<.002	<.005	<.001	E.003	.003	.18	2.7	.4	.53	6530	392
APR												
18...	.3	.009	.007	<.001	.007	.004	.16	2.6	.6	.50	6680	371
MAY												
01...	.3	<.002	<.005	<.001	.009	.005	.20	2.7	1.2	.50	8890	364
JUN												
06...	.3	.004	<.005	<.001	.012	.008	.12	2.6	.8	.49	9510	357
JUL												
18...	.6	<.002	.021	.001	.016	.012	.29	3.4	1.9	.63	14300	464
AUG												
21...	.3	<.002	<.005	<.001	.012	.008	.11	2.6	.6	.47	8390	347
SEP												
05...	.3	.010	.005	.001	.012	.009	.08	2.5	.7	.47	8500	349

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	TURBIDITY (NTU) (00076)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)
OCT 1999												
05...	372	14	--	--	E1	--	--	94	--	--	--	--
MAR 2000												
20...	378	27	--	--	2	--	--	98	--	--	--	--
APR												
18...	356	20	--	--	2	--	--	87	--	--	--	--
MAY												
01...	351	37	4	<1	2	37	<1	86	<1	<.8	<1	1
JUN												
06...	355	33	--	--	3	--	--	97	--	--	--	--
JUL												
18...	452	110	6	<1	3	43	<1	132	<1	<.8	<1	3
AUG												
21...	337	25	--	--	3	--	--	93	--	--	--	--
SEP												
05...	334	22	--	--	3	--	--	90	--	--	--	--

E--Estimated.

MISSOURI RIVER MAIN STEM

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT 1999											
05...	<10	--	50	--	--	--	<2	--	460	--	<10
MAR 2000											
20...	<10	--	49	--	--	--	<2	--	470	--	<10
APR											
18...	<10	--	47	--	--	--	E1	--	460	--	<10
MAY											
01...	<10	<1	50	1	3	2	<2	<1	450	3	<10
JUN											
06...	<10	--	53	--	--	--	E1	--	470	--	<10
JUL											
18...	<10	<1	69	<1	3	2	<2	<1	510	3	<10
AUG											
21...	<10	--	57	--	--	--	<2	--	460	--	<10
SEP											
05...	<10	--	50	--	--	--	<2	--	440	--	<10

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)
OCT 1999											
05...	--	<.003	<.002	<.002	<.002	<.004	<.002	<.002	<.003	<.003	<.004
MAR 2000											
20...	--	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004
APR											
18...	--	<.003	<.002	<.002	<.002	E.002	<.002	<.002	<.003	<.003	<.004
MAY											
01...	<1	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004
JUN											
06...	--	<.003	<.002	<.002	<.002	E.002	<.002	<.002	<.003	<.003	<.004
JUL											
18...	3	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004
AUG											
21...	--	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004
SEP											
05...	--	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004

DATE	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)
OCT 1999											
05...	<.004	<.002	<.002	86.3	<.002	<.001	<.017	<.002	<.004	<.003	<.003
MAR 2000											
20...	<.004	<.002	<.002	90.8	<.002	<.001	<.017	<.002	<.004	<.003	<.003
APR											
18...	<.004	<.002	<.002	112	<.002	<.001	<.017	<.050	<.004	<.003	<.003
MAY											
01...	<.004	<.002	<.002	93.1	<.002	<.001	<.017	<.002	<.004	<.003	<.003
JUN											
06...	<.004	<.002	<.002	108	<.002	<.001	<.017	<.002	<.004	<.003	<.003
JUL											
18...	<.004	<.002	<.002	113	<.002	<.001	<.017	<.002	<.004	<.003	<.003
AUG											
21...	<.004	<.002	<.002	111	<.002	<.001	<.017	<.002	<.004	<.003	<.003
SEP											
05...	<.004	<.002	<.002	106	<.002	<.001	<.017	<.002	<.004	<.003	<.003

E--Estimated.

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)
OCT 1999											
05...	84.7	<.004	<.002	<.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006
MAR 2000											
20...	74.7	<.004	<.002	<.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006
APR											
18...	96.4	<.004	<.002	<.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006
MAY											
01...	88.2	<.004	<.002	<.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006
JUN											
06...	105	<.004	<.002	<.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006
JUL											
18...	96.7	<.004	<.002	<.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006
AUG											
21...	95.3	<.004	<.002	<.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006
SEP											
05...	99.1	<.004	<.002	.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006

DATE	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)
OCT 1999											
05...	<.004	<.004	<.004	<.005	<.002	<.018	<.003	<.007	<.004	<.013	<.005
MAR 2000											
20...	<.004	<.004	<.004	<.005	<.002	<.018	<.003	<.007	<.004	<.013	<.005
APR											
18...	<.004	<.004	<.004	<.005	<.002	<.018	<.003	<.007	<.004	<.013	<.005
MAY											
01...	<.004	<.004	<.004	<.005	<.002	<.018	<.003	<.007	<.004	<.013	<.005
JUN											
06...	<.004	<.004	<.004	<.005	<.002	E.002	<.003	<.007	<.004	<.013	<.005
JUL											
18...	<.004	<.004	<.004	<.005	<.002	<.018	<.003	<.007	<.004	<.013	<.005
AUG											
21...	<.004	<.004	<.004	<.005	<.002	<.018	<.003	<.007	<.004	<.013	<.005
SEP											
05...	<.004	<.004	<.004	<.005	<.002	<.018	<.003	<.007	<.004	--	<.005

DATE	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS /CM) (61726)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999											
05...	<.01	<.007	<.013	<.002	<.001	<.002	.0555	--	164	2520	21
MAR 2000											
20...	<.01	<.007	<.013	<.002	<.001	<.002	.0553	.0377	264	4400	28
APR											
18...	<.01	<.007	<.013	<.002	E.002	<.002	.0513	.0339	159	2860	42
MAY											
01...	<.01	<.007	<.013	<.002	E.002	<.002	.0508	.0351	327	7990	58
JUN											
06...	<.01	<.007	<.013	<.002	E.002	<.002	.0500	.0320	219	5840	49
JUL											
18...	<.01	<.007	<.013	<.002	<.001	<.002	.0897	.0637	349	10700	74
AUG											
21...	<.01	<.007	<.013	<.002	<.001	<.002	.0485	.0328	160	3870	48
SEP											
05...	<.01	<.007	<.013	<.002	<.001	<.002	.0509	.0347	142	3460	49

E--Estimated.

MISSOURI RIVER MAIN STEM

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	PHOS-PHORUS SEDI-MENT SUSP. PERCENT (30292)	CARBON, ORGANIC SUS-PENDED, TOTAL PERCENT (50465)	CARBON SED. SUSP. PERCENT (30244)	ALUM-INUM SED, SUS PERCENT (30221)	AN-TIMONY SED. SUSP. (UG/G) (29816)	ARSENIC SED. SUSP. (UG/G) (29818)	BARIUM SED. SUSP. (UG/G) (29820)	BERYL-LIUM SED. SUSP. (UG/G) (29822)	CADMIUM SED. SUSP. (UG/G) (29826)
MAR 2000										
20...	1130	.055	.4	.90	4.8	.8	15	1100	1	.1
MAY										
01...	1215	.059	.7	1.3	5.5	2.4	16	740	1	.3
JUL										
18...	1215	.059	.7	1.1	6.1	4.0	15	180	2	.2

DATE	CHRO-MIUM SED. SUSP. (UG/G) (29829)	COBALT SEDI-MENT SUSP. (UG/G) (35031)	COPPER SED. SUSP. (UG/G) (29832)	IRON SEDI-MENT SUSP. PERCENT (30269)	LEAD SED. SUSP. (UG/G) (29836)	LITHIUM SEDI-MENT SUSP. (UG/G) (35050)	MAN-GANESE SED. SUSP. (UG/G) (29839)	MERCURY SED. SUSP. (UG/G) (29841)	MOLYB-DENUM SED. SUSP. (UG/G) (29843)	NICKEL SED. SUSP. (UG/G) (29845)
MAR 2000										
20...	48	11	9	1.8	12	23	290	.01	<5	25
MAY										
01...	65	10	23	2.4	14	36	320	.04	<5	33
JUL										
18...	78	11	23	2.9	13	44	480	.03	2	37

DATE	SELE-NIUM SED. SUSP. (UG/G) (29847)	SILVER SED. SUSP. (UG/G) (29850)	STRON-TIUM SEDI-MENT SUSP. (UG/G) (35040)	THAL-LIUM SUS SED (UG/G) (49955)	TITA-NIUM SEDI-MENT SUSP. PERCENT (30317)	VANA-DIUM SED. SUSP. (UG/G) (29853)	ZINC SED. SUSP. (UG/G) (29855)	URANIUM SEDI-MENT SUSP. (UG/G) (35046)	SEDI-MENT SUSP., FLOW-THROUGH CENTRIF (MG/L) (50279)
MAR 2000									
20...	<1	<1	290	<50	.19	55	52	<50	557
MAY									
01...	<1	<1	280	<50	.25	88	72	<50	337
JUL									
18...	1	<1	230	<50	.31	130	89	<50	424

06186500 YELLOWSTONE RIVER AT YELLOWSTONE LAKE OUTLET, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°34'03", long 110°22'48", Yellowstone National Park, Hydrologic Unit 10070001, on left bank 450 ft downstream from Fishing Bridge, 0.3 mi downstream from outlet of Yellowstone Lake, and at river mile 616.4.

DRAINAGE AREA.--1,006 mi^2.

PERIOD OF RECORD.--December 1922 to September 1982, October 1983 to September 1986, October 1988 to current year. Prior to October 1926, gage heights only. Monthly discharge only for winter periods in water years 1927-30, 1932-33, 1935-38, 1940, 1942-46 published in WSP 1309; figures of daily discharge for these months published in WSP 646, 666, 686, 701, 731, 746, 786, 806, 826, 856, 896, 956, 976, 1006, 1036, and 1056, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1309: See PERIOD OF RECORD. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7,729.58 ft above sea level. Prior to Oct. 2, 1928, nonrecording gage at site 450 ft upstream at datum 1.07 ft higher.

REMARKS.--Records good. No artificial regulation. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1080	685	537	460	487	496	468	763	3280	3650	1900	991
2	1050	677	533	464	487	493	473	818	3370	3600	1850	986
3	1040	672	523	461	480	491	476	881	3460	3540	1820	946
4	1030	672	518	460	479	488	479	944	3540	3470	1780	925
5	1010	656	517	461	480	485	482	913	3660	3370	1780	911
6	991	642	513	459	479	489	471	1090	3780	3300	1750	892
7	990	635	508	456	477	490	465	1200	3880	3240	1720	877
8	976	632	504	460	474	500	459	1210	4010	3180	1680	865
9	975	626	498	464	475	497	457	1330	4130	3140	1630	849
10	950	615	492	468	477	500	457	1390	4210	3080	1600	817
11	934	608	492	489	477	501	457	1420	4230	3020	1560	796
12	914	602	492	518	485	500	457	1420	4220	2950	1520	773
13	901	597	497	511	490	496	459	1420	4250	2910	1490	758
14	882	591	493	508	502	494	475	1410	4250	2860	1450	746
15	862	585	485	506	518	490	486	1420	4210	2780	1410	739
16	849	580	499	502	512	489	491	1420	4190	2720	1380	730
17	842	576	499	503	508	493	494	1480	4160	2670	1340	721
18	817	570	499	501	508	494	498	1540	4110	2660	1320	715
19	805	566	491	513	505	498	509	1570	4100	2610	1300	697
20	792	570	489	508	502	499	514	1620	4130	2560	1270	687
21	780	571	481	507	498	498	523	1670	4090	2510	1240	680
22	777	566	485	504	495	494	537	1740	4020	2470	1210	664
23	764	555	478	500	492	494	563	1840	3980	2410	1190	664
24	750	554	475	499	492	493	589	1970	3960	2340	1150	654
25	744	553	470	501	506	489	605	2100	3910	2270	1130	647
26	738	561	469	500	505	486	617	2320	3870	2230	1120	641
27	729	553	469	499	502	482	630	2520	3830	2170	1100	633
28	728	546	466	495	504	476	659	2700	3800	2100	1070	623
29	726	543	465	493	501	468	701	2860	3740	2040	1040	624
30	714	542	460	492	---	465	733	3020	3700	2000	1020	619
31	709	---	459	490	---	463	---	3190	---	1960	1010	---
TOTAL	26849	17901	15256	15152	14297	15191	15684	51189	118070	85810	43830	22870
MEAN	866	597	492	489	493	490	523	1651	3936	2768	1414	762
MAX	1080	685	537	518	518	501	733	3190	4250	3650	1900	991
MIN	709	542	459	456	474	463	457	763	3280	1960	1010	619
AC-FT	53250	35510	30260	30050	28360	30130	31110	101500	234200	170200	86940	45360
CFSM	.86	.59	.49	.49	.49	.49	.52	1.64	3.91	2.75	1.41	.76
IN.	.99	.66	.56	.56	.53	.56	.58	1.89	4.37	3.17	1.62	.85

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 2000, BY WATER YEAR (WY)*

MEAN	809	612	480	402	391	448	546	1162	3712	4085	2239	1223
MAX	1259	984	775	699	637	717	801	2214	8574	7160	4031	1954
(WY)	1973	1951	1951	1998	1998	1962	1952	1997	1997	1982	1982	1982
MIN	327	276	246	168	122	130	175	605	1707	1272	812	538
(WY)	1989	1989	1932	1989	1989	1935	1937	1953	1934	1934	1934	1934

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1927 - 2000*	
ANNUAL TOTAL	619928		442099			
ANNUAL MEAN	1698		1208		1348	
HIGHEST ANNUAL MEAN					2253	1997
LOWEST ANNUAL MEAN					682	1934
HIGHEST DAILY MEAN	6720	Jun 27	4250	Jun 13	9930	Jun 19 1997
LOWEST DAILY MEAN	459	Dec 31	456	Jan 7	100	Feb 18 1993
ANNUAL SEVEN-DAY MINIMUM	465	Dec 25	459	Apr 7	113	Feb 11 1989
INSTANTANEOUS PEAK FLOW			4320	Jun 10	9950	Jun 18 1997
INSTANTANEOUS PEAK STAGE			6.21	Jun 10	8.90	Jun 18 1997
ANNUAL RUNOFF (AC-FT)	1230000		876900		976400	
ANNUAL RUNOFF (CFSM)	1.69		1.20		1.34	
ANNUAL RUNOFF (INCHES)	22.92		16.35		18.20	
10 PERCENT EXCEEDS	4920		3250		3520	
50 PERCENT EXCEEDS	677		662		682	
90 PERCENT EXCEEDS	540		477		340	

*--During periods of operation (October 1926 to September 1982, October 1983 to September 1986, October 1988 to current year).

YELLOWSTONE RIVER BASIN

06187915 SODA BUTTE CREEK AT PARK BOUNDARY, AT SILVER GATE, MT

(National water-quality assessment program)

LOCATION.--Lat 45°00'11", long 110°00'04", in $SW^1/_4NW^1/_4SW^1/_4$ sec.33, T.9 S., R.14 E., Park County, Hydrologic Unit 10070001, at Yellowstone National park boundary, 0.25 mi downstream from Silver Creek, 0.75 mi southwest of Silver Gate, and at river mile 17.8.
DRAINAGE AREA.--31.2 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1998 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 7,340 ft above sea level, from topographic map.
REMARKS.--Surface-water records good except those for estimated daily discharges, which are poor. No known regulation or diversion upstream of station. Several observations of water temperature and specific conductance were made during the year.
COOPERATION.--Records collected by the National Park Service and U.S. Department of Agriculture, Forest Service, under the general supervision of the Geological Survey.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	e6.8	e4.0	e2.0	e1.8	2.2	e2.0	68	327	249	44	16
2	12	e6.5	e4.2	e2.2	e1.9	2.1	e2.1	93	361	242	41	16
3	10	e6.5	e4.2	e2.2	e1.9	2.1	e2.2	114	434	229	39	15
4	10	e7.0	e4.2	e2.2	e1.9	2.2	e2.2	119	484	199	44	14
5	9.9	e7.0	e4.2	e2.2	e1.9	2.3	e2.5	104	543	192	49	13
6	9.8	e7.0	e4.0	e2.0	e2.0	2.3	e3.0	94	578	181	38	14
7	9.6	e7.0	e3.8	e2.0	e2.0	2.2	e3.5	81	610	173	34	13
8	9.5	7.1	e3.8	e2.0	e2.0	2.5	e3.3	70	505	161	32	12
9	9.3	6.8	e4.0	e2.0	e2.0	2.3	e3.3	64	367	159	31	12
10	9.0	6.5	e4.1	e2.0	e2.0	2.2	e3.3	59	294	134	30	12
11	8.9	6.4	e4.2	e2.0	e2.0	2.1	3.9	54	272	128	29	13
12	8.7	6.1	e4.2	e2.0	e1.9	2.1	5.7	49	303	124	26	12
13	8.6	6.1	e4.2	e2.0	e1.9	2.1	7.9	45	323	118	25	11
14	8.8	6.2	e4.2	e2.0	e2.0	1.9	9.0	43	287	112	24	11
15	8.7	e6.0	e4.2	e2.0	e2.1	1.9	7.7	46	353	105	23	11
16	7.4	e5.8	e4.2	e2.0	e2.0	1.8	7.6	59	290	99	22	10
17	7.6	e5.5	e4.0	e2.0	e1.9	1.4	7.8	70	237	94	21	9.8
18	7.4	e5.5	e3.8	e2.0	e1.9	1.4	8.0	70	252	95	22	9.7
19	7.3	e5.3	e3.5	e2.0	e1.8	1.4	9.7	89	311	86	21	10
20	7.2	e5.0	e3.5	e2.0	e1.9	1.5	13	111	246	81	20	9.6
21	6.8	e4.6	e3.3	e2.0	e2.0	e1.5	18	135	235	76	18	9.9
22	6.6	e4.0	e3.2	e2.0	e2.2	e1.5	27	196	266	72	17	8.9
23	6.5	e4.0	e3.0	e2.0	2.3	e1.5	31	246	293	68	17	8.9
24	6.5	e3.5	e2.8	e2.0	2.2	1.7	26	270	319	63	17	9.0
25	6.4	e3.5	e2.6	e2.0	2.1	1.8	22	348	289	58	17	8.8
26	6.2	e3.5	e2.5	e2.0	2.2	1.8	21	328	244	55	19	8.3
27	6.6	e3.6	e2.5	e2.0	2.1	e1.8	27	306	234	53	21	8.2
28	6.7	e3.7	e2.2	e2.0	2.1	e1.8	47	427	229	50	17	8.1
29	6.2	e3.7	e1.8	e1.9	2.1	e1.8	54	412	230	49	16	8.2
30	6.4	e3.7	e1.8	e1.8	---	e1.8	47	410	241	46	16	8.1
31	e7.0	---	e1.9	e1.8	---	e1.8	---	374	---	45	16	---
TOTAL	254.6	163.9	108.1	62.3	58.1	58.8	427.7	4954	9957	3596	806	330.5
MEAN	8.21	5.46	3.49	2.01	2.00	1.90	14.3	160	332	116	26.0	11.0
MAX	13	7.1	4.2	2.2	2.3	2.5	54	427	610	249	49	16
MIN	6.2	3.5	1.8	1.8	1.8	1.4	2.0	43	229	45	16	8.1
AC-FT	505	325	214	124	115	117	848	9830	19750	7130	1600	656
CFSM	.26	.18	.11	.06	.06	.06	.46	5.12	10.6	3.72	.83	.35
IN.	.30	.20	.13	.07	.07	.07	.51	5.91	11.87	4.29	.96	.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2000, BY WATER YEAR (WY)

MEAN	10.0	6.15	3.38	2.06	1.93	1.81	9.24	128	339	164	35.5	16.7
MAX	11.9	6.84	3.49	2.11	2.00	1.90	14.3	160	345	212	45.0	22.4
(WY)	1999	1999	2000	1999	2000	2000	2000	2000	1999	1999	1999	1999
MIN	8.21	5.46	3.27	2.01	1.86	1.73	4.23	95.9	332	116	26.0	11.0
(WY)	2000	2000	1999	2000	1999	1999	1999	1999	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1999 - 2000	
ANNUAL TOTAL	22798.6		20777.0			
ANNUAL MEAN	62.5		56.8		59.8	
HIGHEST ANNUAL MEAN					62.9	1999
LOWEST ANNUAL MEAN					56.8	2000
HIGHEST DAILY MEAN	587	Jun 18	610	Jun 7	610	Jun 7 2000
LOWEST DAILY MEAN	1.5	Jan 25	1.4	Mar 17	1.0	Dec 21 1998
ANNUAL SEVEN-DAY MINIMUM	1.5	Mar 6	1.5	Mar 17	1.5	Mar 17 2000
INSTANTANEOUS PEAK FLOW			792	Jun 7	846	Jun 19 1999
INSTANTANEOUS PEAK STAGE			3.37	Jun 7	3.41	Jun 19 1999
ANNUAL RUNOFF (AC-FT)	45220		41210		43330	
ANNUAL RUNOFF (CFSM)	2.00		1.82		1.92	
ANNUAL RUNOFF (INCHES)	27.18		24.77		26.05	
10 PERCENT EXCEEDS	264		238		244	
50 PERCENT EXCEEDS	7.0		7.9		8.7	
90 PERCENT EXCEEDS	1.8		2.0		1.8	

e--Estimated.

06187915 SODA BUTTE CREEK AT PARK BOUNDARY, AT SILVER GATE, MT--Continued

(National water-quality assessment program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1999 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District Office. Samples collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
OCT 1999												
06...	0830	9.6	--	8.1	119	0.5	2.0	--	--	11.6	--	100
NOV												
02...	1230	6.8	582	8.2	342	8.0	0.0	--	--	11.9	107	110
DEC												
16...	0900	4.3	579	8.0	234	0.0	0.0	--	--	11.5	104	110
JAN 2000												
12...	1600	2.1	577	8.1	235	0.0	0.0	--	--	11.2	102	110
FEB												
08...	1300	2.0	582	8.0	238	7.0	0.0	--	--	12.7	114	120
MAR												
14...	1630	1.9	573	7.9	234	1.0	1.0	--	--	12.6	118	110
APR												
10...	1300	3.3	580	8.1	218	11.0	4.0	--	--	12.1	122	100
MAY												
16...	0800	49	575	8.2	163	8.0	9.5	--	--	9.4	109	84
25...	1300	318	576	7.8	104	17.0	6.5	--	--	10.3	111	46
JUN												
07...	1700	632	579	7.7	146	--	--	--	--	--	--	33
27...	1100	241	583	7.9	126	16.0	6.0	110	93	11.9	126	40
JUL												
11...	1130	112	583	8.1	133	21.0	9.0	<1	<1	9.5	108	49
AUG												
15...	1200	24	583	8.4	185	21.0	8.5	K8	K4	10.8	121	82
SEP												
27...	1130	7.8	588	7.40	204	12.0	3.0	K6	K7	10.5	101	99

DATE	TUR-BID-ITY (NTU) (00076)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM, TOTAL RECOV-ERABLE (MG/L AS NA) (00929)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)
OCT 1999											
06...	--	29	27.7	6.7	6.7	.4	.2	3.8	3.8	--	--
NOV											
02...	--	32	33.6	7.3	7.7	.5	.2	4.0	4.1	139	0
DEC											
16...	--	33	33.8	7.5	7.6	.5	.2	3.9	3.7	141	0
JAN 2000											
12...	--	32	33.1	7.3	7.6	.5	.2	3.8	4.0	134	0
FEB											
08...	--	36	32.9	7.9	7.6	.5	.2	4.0	4.1	150	0
MAR											
14...	1.0	32	32.4	7.2	7.4	.5	.2	4.2	4.4	138	0
APR											
10...	1.6	29	30.8	6.7	7.4	.6	.2	4.4	4.7	124	4
MAY											
16...	3.3	24	24.3	5.7	6.3	.4	.2	3.4	3.4	100	0
25...	16	13	14.8	3.1	4.9	.3	.2	3.1	3.6	61	0
JUN											
07...	55	9.5	14.3	2.2	6.1	E.2	.2	2.8	3.2	44	0
27...	3.0	12	12.2	2.7	3.1	E.2	.2	3.1	3.2	54	0
JUL											
11...	2.0	14	13.9	3.4	3.5	.3	.2	3.5	3.5	66	0
AUG											
15...	2.0	23	23.7	5.7	5.9	.4	.2	3.8	3.8	102	0
SEP											
27...	2.0	29	28.6	6.6	7.0	.4	.2	3.9	4.0	122	0

E--Estimated.
K--Results based on non-ideal colony count.

YELLOWSTONE RIVER BASIN

06187915 SODA BUTTE CREEK AT PARK BOUNDARY, AT SILVER GATE, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)
OCT											
06...	<.1	10.1	8.3	.2	E.10	<.02	<.05	<.01	.022	.026	.138
NOV											
02...	<.1	10.6	9.2	<.1	E.10	<.02	<.05	<.01	.023	.019	.033
DEC											
16...	<.1	10.5	9.7	<.1	<.10	<.02	.11	<.01	.022	.025	.025
JAN											
12...	.1	10.4	11.0	<.1	<.10	<.02	.19	<.01	.027	.027	.030
FEB											
08...	<.1	11.2	9.4	<.1	<.10	<.02	.13	<.01	.028	.023	.028
MAR											
14...	<.1	10.5	9.3	<.1	E.10	<.02	.07	<.01	.023	.018	.026
APR											
10...	<.1	10.2	9.1	E.1	.20	<.02	.05	<.01	.026	.024	.038
MAY											
16...	<.1	9.6	9.2	<.1	E.10	<.02	<.05	<.01	.016	.014	.026
25...	<.1	9.4	4.3	E.1	.13	<.02	<.05	<.01	.032	.027	.097
JUN											
07...	<.1	8.8	3.1	<.1	.22	<.02	<.05	<.01	.034	.022	.286
27...	<.1	9.5	4.2	<.1	E.10	<.02	<.05	<.01	.036	.030	.049
JUL											
11...	<.1	10.3	4.1	<.1	E.10	<.02	<.05	<.01	.039	.032	.050
AUG											
15...	<.1	10.6	6.7	E.1	E.10	<.02	<.05	<.01	.029	.027	.035
SEP											
27...	<.1	10.4	8.5	<.1	<.10	<.02	<.05	<.01	.022	.023	.030

DATE	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	TURBIDITY (NTU) (00076)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)
OCT											
06...	1.5	<.2	--	--	119	--	--	--	--	1	106
NOV											
02...	.86	.2	.18	2.41	131	133	--	--	--	<1	85
DEC											
16...	.62	<.2	.18	1.56	136	135	--	--	--	<1	E22
JAN											
12...	.78	<.2	--	--	137	--	--	--	--	<1	73
FEB											
08...	.64	<.2	.19	.77	138	144	--	--	--	2	30
MAR											
14...	.88	<.2	--	--	135	--	1.0	--	--	<1	E20
APR											
10...	1.3	<.2	.18	1.19	133	126	1.6	--	--	12	81
MAY											
16...	1.4	<.2	--	--	109	--	3.3	--	--	9	212
25...	2.3	1.0	--	--	71	--	16	--	--	18	1560
JUN											
07...	1.6	.5	--	--	50	--	55	--	--	12	3880
27...	1.2	<.2	--	--	62	--	3.0	93	110	9	283
JUL											
11...	.84	<.2	--	--	69	--	2.0	<1	<1	11	185
AUG											
15...	.82	.2	--	--	105	--	2.0	K4	K8	3	108
SEP											
27...	1.6	<.2	.16	2.49	118	119	2.0	K7	K6	3	75

E--Estimated.
K--Results based on non-ideal colony count.

06187915 SODA BUTTE CREEK AT PARK BOUNDARY, AT SILVER GATE, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)
OCT											
06...	<1	<1	<2.0	<3	20	18.1	<1	<5	--	<1	<.1
NOV											
02...	<1	<1	<2.0	<3	19	20.0	<1	<5	--	<1	<.1
DEC											
16...	<1	<1	<2.0	<3	20	19.0	<1	<5	--	<1	<.1
JAN											
12...	<1	<1	<2.0	<3	20	19.1	<1	<5	--	<1	<.1
FEB											
08...	<1	<1	<2.0	<3	19	18.5	<1	<5	--	<1	<.1
MAR											
14...	<1	<1	1.0	<3	17	15.9	<1	<5	E7	<1	<.1
APR											
10...	<1	<1	E.6	<3	16	15.3	<1	<5	E9	<1	<.1
MAY											
16...	<1	<1	<.9	<3	18	19.2	<1	<5	E9	<1	<.1
25...	<1	<1	E.5	<3	9	29.5	<1	<5	E9	<1	<.1
JUN											
07...	<1	<1	E.5	E2	6	63.0	<1	<5	<12	<1	<.1
27...	<1	<1	<.9	<3	8	12.0	<1	<5	<12	<1	<.1
JUL											
11...	<1	<1	E.5	<3	12	11.7	<1	<5	<12	<1	<.1
AUG											
15...	<1	<1	E.6	<3	15	16.8	<1	<5	E6	<1	<.1
SEP											
27...	<1	<1	E.6	<3	17	17.9	<1	<5	<12	<1	<.1

DATE	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT											
06...	<.8	<1	<1	E1	<1	<20	<10	130	<1	<1	--
NOV											
02...	<.8	<1	<1	E1	<1	<20	<10	150	<1	<1	--
DEC											
16...	<.8	<1	<1	<2	<1	<20	<10	60	<1	<1	--
JAN											
12...	<.8	<1	<1	<2	<1	<20	<10	100	<1	<1	--
FEB											
08...	<.8	<1	<1	<2	<1	<20	<10	50	<1	<1	--
MAR											
14...	<1.0	<1	<1	<2	<1	<20	<10	60	<1	<1	.9
APR											
10...	<.8	<1	<1	<2	<1	<20	E10	220	<1	<1	1.1
MAY											
16...	<.8	<1	<1	<2	1	<20	10	440	<1	<1	.8
25...	<.8	2	<1	E1	3	E13	10	1970	<1	3	.4
JUN											
07...	<.8	4	<1	4	2	21	E10	5200	<1	8	E.3
27...	<.8	E1	<1	<2	1	<20	10	410	<1	E1	<.3
JUL											
11...	<.8	<1	<1	<2	<1	<20	<10	300	<1	<1	.4
AUG											
15...	<.8	<1	<1	E1	<1	<20	<10	220	<1	<1	.8
SEP											
27...	<.8	E1	<1	<2	3	<20	<10	200	<1	<1	.9

E--Estimated.

06187915 SODA BUTTE CREEK AT PARK BOUNDARY, AT SILVER GATE, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT											
06...	<7	2	3	<.1	<.1	1	<1	<1	<2	<2.4	<3
NOV											
02...	<7	3	6	<.2	<.3	1	1	<1	<2	<2.4	<3
DEC											
16...	<7	1	E2	<.2	<.3	1	2	<1	<2	<2.4	<3
JAN											
12...	<7	1	3	<.2	<.3	1	2	<1	<2	<2.4	<3
FEB											
08...	<7	1	<3	<.2	<.3	1	1	<1	<2	<2.4	<3
MAR											
14...	<7	<1	<3	<.2	<.3	1	<1	<1	<2	<.7	<3
APR											
10...	<7	2	E3	<.2	<.3	1	<1	1	<2	<.7	<3
MAY											
16...	<7	3	6	<.2	<.3	<1	<1	<1	E1	<.7	<3
25...	<7	2	58	<.2	<.3	<1	<1	<1	5	<.7	<3
JUN											
07...	<7	2	155	<.2	<.3	<1	<1	<1	11	<.7	<3
27...	<7	1	9	<.2	<.3	<1	1	<1	<2	<.7	<3
JUL											
11...	<7	2	6	<.2	<.3	<1	1	1	<2	<.7	<3
AUG											
15...	<7	2	5	<.2	<.3	<1	2	<1	<2	<.7	<3
SEP											
27...	<7	2	5	<.2	<.3	1	1	<1	<2	<.7	<3

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR) (01082)	THAL-LIUM, DIS-SOLVED (UG/L AS TL) (01057)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
06...	<1	<1	--	106	--	--	<1	<31	<1	1	.03
NOV											
02...	<1	<1	--	128	--	--	<1	<31	<1	3	.06
DEC											
16...	<1	<1	--	130	--	--	<1	<31	<1	1	.01
JAN											
12...	<1	<1	--	133	--	--	<1	<31	<1	4	.02
FEB											
08...	<1	<1	--	132	--	--	2	<31	<1	3	.02
MAR											
14...	<1	<1	131	129	<.9	<1	1	<31	<1	1	.00
APR											
10...	<1	<1	128	124	<.9	2	2	<31	<1	4	.04
MAY											
16...	<1	<1	99.3	91	<.9	2	4	<31	<1	5	.66
25...	<1	<1	50.0	60	<.9	2	3	<31	<1	70	60
JUN											
07...	<1	<1	38.3	64	<.9	2	<1	E26	<1	300	512
27...	<1	<1	42.8	47	<.9	2	3	<31	<1	10	6.5
JUL											
11...	<1	<1	55.5	52	<.9	3	2	<31	<1	5	1.5
AUG											
15...	<1	<1	83.9	90	<.9	3	2	<31	<1	7	.46
SEP											
27...	<1	<1	107	111	<.9	2	2	<31	<1	--	--

E--Estimated.

YELLOWSTONE RIVER BASIN

06187950 SODA BUTTE CREEK NEAR LAMAR RANGER STATION, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°52'06", long 110°09'53", Yellowstone National Park, Hydrologic Unit 10070001, on left bank, 4 mi southeast of Lamar Ranger Station, and at river mile 1.5.

DRAINAGE AREA.--99.0 mi^2.

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,630 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No regulation or diversion upstream of 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, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	34	28	35	e28	29	23	253	637	413	100	55
2	53	28	28	35	32	29	25	341	677	399	96	55
3	52	30	25	e32	33	e28	24	395	766	376	92	53
4	50	30	e22	e32	e30	e30	30	449	824	344	96	51
5	50	41	e18	35	32	e30	52	380	862	303	122	49
6	50	37	e19	e34	34	e29	53	346	908	299	96	50
7	50	34	e20	e34	35	e27	45	312	901	283	88	51
8	49	33	e20	37	33	26	44	281	846	273	83	48
9	49	33	28	e36	37	24	55	263	784	263	80	46
10	48	33	26	e35	35	22	56	246	698	249	81	45
11	47	32	e25	e35	30	22	57	226	610	232	77	46
12	46	32	26	e34	34	20	60	198	659	226	73	44
13	45	31	29	e30	33	23	60	185	762	215	70	43
14	46	29	e25	34	33	24	65	176	590	205	68	42
15	49	27	30	33	32	e20	64	177	687	194	67	41
16	43	29	31	34	31	e22	65	205	589	184	65	41
17	37	29	32	e30	e30	27	64	272	490	186	64	40
18	38	29	32	e30	e32	24	65	263	459	178	66	41
19	37	27	32	30	e34	25	64	323	651	177	65	42
20	36	29	34	30	e32	e23	69	390	563	158	62	42
21	36	e21	33	30	e30	e20	89	467	503	150	61	43
22	35	22	e33	29	31	e23	123	602	513	142	59	45
23	35	e21	e30	28	32	e23	152	699	527	136	57	43
24	34	20	e28	29	33	e25	128	716	559	129	56	43
25	34	19	e27	31	31	e25	111	844	548	123	56	42
26	33	21	e25	30	e30	e27	107	789	481	118	58	41
27	37	23	e24	e30	30	28	118	679	454	113	67	41
28	41	25	e23	29	e30	30	198	818	428	109	58	41
29	39	23	e24	e28	e30	25	260	796	416	106	54	42
30	37	26	e25	e25	---	23	204	725	415	104	55	40
31	37	---	e30	e25	---	23	---	685	---	101	56	---
TOTAL	1329	848	832	979	927	776	2530	13501	18807	6488	2248	1346
MEAN	42.9	28.3	26.8	31.6	32.0	25.0	84.3	436	627	209	72.5	44.9
MAX	56	41	34	37	37	30	260	844	908	413	122	55
MIN	33	19	18	25	28	20	23	176	415	101	54	40
AC-FT	2640	1680	1650	1940	1840	1540	5020	26780	37300	12870	4460	2670

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2000, BY WATER YEAR (WY)

MEAN	44.8	32.6	25.7	26.0	24.3	24.5	65.6	414	724	310	101	60.0
MAX	68.8	40.3	31.2	33.3	32.0	32.0	127	580	1251	447	162	92.0
(WY)	1998	1997	1996	1997	2000	1997	1990	1993	1996	1998	1997	1997
MIN	27.8	21.4	16.0	16.7	16.9	20.1	32.3	217	368	106	58.1	40.4
(WY)	1989	1995	1989	1989	1995	1989	1993	1995	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1989 - 2000	
ANNUAL TOTAL	59773		50611			
ANNUAL MEAN	164		138		155	
HIGHEST ANNUAL MEAN					204	1996
LOWEST ANNUAL MEAN					108	1994
HIGHEST DAILY MEAN	1350	May 29	908	Jun 6	2070	Jun 9 1996
LOWEST DAILY MEAN	18	Dec 5	18	Dec 5	12	Feb 4 1989
ANNUAL SEVEN-DAY MINIMUM	21	Nov 21	21	Nov 21	13	Feb 2 1989
INSTANTANEOUS PEAK FLOW			1070	Jun 7	a2450	Jun 8 1996
INSTANTANEOUS PEAK STAGE			6.66	Jun 7	6.66	Jun 7 2000
INSTANTANEOUS LOW FLOW					11	Jan 31 1989
ANNUAL RUNOFF (AC-FT)	118600		100400		112100	
10 PERCENT EXCEEDS	592		461		509	
50 PERCENT EXCEEDS	38		42		44	
90 PERCENT EXCEEDS	25		25		22	

a--Gage height, 5.61 ft.
e--Estimated.

06188000 LAMAR RIVER NEAR TOWER FALLS RANGER STATION, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°55'40", long 110°23'35", Yellowstone National Park, Hydrologic Unit 10070001, on left bank 0.5 mi north of the Cooke City highway, 1.6 mi northeast of Tower Falls Ranger Station, 2.7 mi downstream from Slough Creek, and at river mile 0.5.

DRAINAGE AREA.--660 mi^2.

PERIOD OF RECORD.--September 1922, April 1923 to September 1969, May 1985 to September 1986 (seasonal records only), October 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,000 ft above sea level, from topographic map. Prior to Sept. 16, 1925, nonrecording gage and Sept. 16, 1925 to July 29, 1927, water-stage recorder at same site at datum 1.00 ft higher. July 29, 1927 to Sept. 30, 1969, water-stage recorder at same site and datum. May 1985 to September 1986, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No regulation or diversion upstream of station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	182	153	e110	e90	e95	e120	e170	2950	5320	1720	325	191
2	184	126	e100	e90	e100	e130	e170	4060	5270	1630	318	198
3	184	144	e90	e85	e90	e130	e180	4530	5860	1490	300	190
4	176	153	e85	e90	e85	e130	e200	5250	5870	1370	296	177
5	175	171	e90	e90	e95	e130	e250	4490	6010	1200	441	167
6	175	177	e95	e85	e90	e140	e300	3670	6040	1140	354	164
7	175	161	e90	e85	e90	e140	256	3010	6130	1060	301	178
8	175	156	e85	e90	e95	e150	236	2550	5740	1000	280	169
9	174	157	e90	e90	e100	e150	297	2320	4970	941	265	158
10	171	153	e90	e90	e90	e140	312	2150	4200	908	261	156
11	170	149	e90	e90	e90	e140	382	1930	3570	836	262	158
12	168	149	e100	e85	e95	e130	544	1650	3610	809	237	157
13	165	144	e90	e85	e95	e140	619	1480	4520	754	225	152
14	163	139	e80	e90	e95	e140	927	1380	3330	706	215	147
15	164	130	e85	e95	e95	e130	818	1500	3570	664	209	145
16	163	134	e95	e100	e100	e130	871	1880	3360	626	206	141
17	154	137	e90	e90	e100	e140	857	2910	2690	621	199	140
18	150	142	e100	e90	e100	e140	834	2630	2410	656	200	142
19	150	135	e95	e95	e100	e130	861	3340	3540	700	231	145
20	150	133	e95	e95	e95	e120	1170	3940	3510	609	205	155
21	150	120	e100	e95	e100	e120	1640	4720	2710	548	197	158
22	150	e120	e95	e90	e110	e130	2230	5380	2730	507	189	173
23	150	e110	e85	e90	e110	e150	2430	6110	2700	470	182	167
24	150	e110	e85	e90	e110	e140	1940	6280	2770	440	178	162
25	150	e120	e85	e95	e100	e140	1470	7630	2690	418	181	161
26	150	e130	e80	e95	e100	e160	1320	7620	2330	400	182	164
27	154	e120	e80	e90	e110	e170	1470	6380	2180	386	227	161
28	163	e120	e80	e85	e120	e180	2590	7620	1980	371	201	156
29	172	e110	e80	e80	e120	e190	3520	8210	1850	357	178	154
30	162	e110	e80	e80	---	e180	2460	7290	1780	347	173	152
31	158	---	e85	e85	---	e170	---	6610	---	332	193	---
TOTAL	5077	4113	2780	2775	2875	4430	31324	131470	113240	24016	7411	4838
MEAN	164	137	89.7	89.5	99.1	143	1044	4241	3775	775	239	161
MAX	184	177	110	100	120	190	3520	8210	6130	1720	441	198
MIN	150	110	80	80	85	120	170	1380	1780	332	173	140
AC-FT	10070	8160	5510	5500	5700	8790	62130	260800	224600	47640	14700	9600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2000, BY WATER YEAR (WY)*

MEAN	214	157	121	107	103	113	465	2839	4297	1376	356	231
MAX	485	330	202	200	171	204	1684	6885	9044	3256	886	518
(WY)	1942	1928	1951	1969	1969	1999	1990	1928	1996	1943	1968	1968
MIN	109	88.1	75.5	71.8	70.0	67.9	106	969	1408	344	173	115
(WY)	1989	1937	1953	1989	1942	1964	1945	1933	1934	1931	1940	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1923 - 2000*	
ANNUAL TOTAL	443559		334349			
ANNUAL MEAN	1215		914		872	
HIGHEST ANNUAL MEAN					1531	1997
LOWEST ANNUAL MEAN					525	1934
HIGHEST DAILY MEAN	9800	May 29	8210	May 29	15600	Jun 10 1996
LOWEST DAILY MEAN	80	Dec 14	80	Dec 14	45	Mar 23 1964
ANNUAL SEVEN-DAY MINIMUM	81	Dec 24	81	Dec 24	57	Mar 5 1964
INSTANTANEOUS PEAK FLOW			9640	May 28	19500	Jun 10 1996
INSTANTANEOUS PEAK STAGE			8.30	May 28	12.15	Jun 10 1996
INSTANTANEOUS LOW FLOW					a40	Mar 16 1945
ANNUAL RUNOFF (AC-FT)	879800		663200		631600	
10 PERCENT EXCEEDS	4570		3330		2990	
50 PERCENT EXCEEDS	210		164		190	
90 PERCENT EXCEEDS	120		90		91	

*--During periods of operation {September 1922, April 1923 to September 1969, May 1985 to September 1986 (seasonal records only), October 1988 to current year}.
a--Observed, but may have been lower during periods of no gage-height record in winter.
e--Estimated.

YELLOWSTONE RIVER BASIN

06191000 GARDNER RIVER NEAR MAMMOTH, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°59'33", long 110°41'26", Yellowstone National Park, Hydrologic Unit 10070001, on left bank at Wyoming-Montana state line, 400 ft upstream from highway bridge, 0.5 mi downstream from Hot River (formerly Boiling River), 1.5 mi north of Mammoth, and at river mile 2.9.
DRAINAGE AREA.--202 mi^2.
PERIOD OF RECORD.--October 1938 to September 1972, April 1984 to current year. Prior to October 1959, published as Gardiner River near Mammoth.
REVISED RECORDS.--WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 5,623.97 ft above sea level (levels by National Park Service).
REMARKS.--Records good. No regulation or diversion upstream of 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	147	138	127	126	112	107	353	625	268	153	129
2	156	138	134	125	126	112	106	423	604	267	148	137
3	156	148	129	116	122	110	102	481	631	248	134	130
4	155	149	108	116	109	111	111	546	643	235	136	122
5	155	163	114	122	125	112	122	510	645	225	145	119
6	154	154	127	120	119	114	123	483	620	219	136	121
7	156	147	132	119	119	115	115	446	560	214	131	121
8	156	148	112	118	118	114	112	416	531	208	129	118
9	153	146	129	118	118	112	117	411	493	204	127	116
10	153	143	130	117	117	112	118	403	478	204	130	115
11	153	143	122	119	114	112	124	363	439	202	129	116
12	152	141	126	119	115	109	137	337	467	205	124	115
13	150	139	128	118	114	113	153	314	601	197	123	114
14	150	137	111	126	117	112	170	306	454	193	122	113
15	155	135	122	120	112	107	168	316	428	188	122	112
16	148	138	124	120	115	108	176	348	413	186	121	112
17	147	137	129	118	113	113	190	433	373	190	121	115
18	155	139	128	114	102	110	192	426	349	192	122	114
19	149	130	128	122	120	109	202	454	421	192	122	117
20	149	137	128	120	107	108	233	497	417	186	119	119
21	149	125	127	120	126	107	254	545	360	180	120	118
22	148	127	129	120	116	106	286	609	349	174	118	125
23	146	117	118	117	116	105	308	661	343	170	117	120
24	145	124	120	120	115	110	273	681	339	166	118	118
25	146	129	118	120	115	109	246	753	330	165	122	126
26	144	139	118	121	109	105	254	799	317	164	123	129
27	151	144	123	116	115	109	273	761	336	166	139	131
28	165	142	121	115	112	112	337	815	308	165	122	128
29	163	138	119	95	114	110	380	828	297	163	118	128
30	156	139	114	105	---	107	314	756	282	160	118	126
31	154	---	128	110	---	104	---	711	---	157	120	---
TOTAL	4727	4183	3834	3653	3366	3409	5803	16185	13453	6053	3929	3624
MEAN	152	139	124	118	116	110	193	522	448	195	127	121
MAX	165	163	138	127	126	115	380	828	645	268	153	137
MIN	144	117	108	95	102	104	102	306	282	157	117	112
AC-FT	9380	8300	7600	7250	6680	6760	11510	32100	26680	12010	7790	7190

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2000, BY WATER YEAR (WY)*

MEAN	128	113	103	97.6	93.4	94.0	142	514	726	308	164	138
MAX	175	151	135	134	128	128	304	1067	1354	662	236	190
(WY)	1969	1998	1998	1998	1998	1998	1990	1997	1971	1943	1943	1968
MIN	95.9	85.5	79.3	77.6	75.0	75.4	84.1	283	212	133	103	93.4
(WY)	1961	1940	1941	1941	1940	1942	1945	1960	1987	1988	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1939 - 2000*	
ANNUAL TOTAL	98110		72219			
ANNUAL MEAN	269		197		219	
HIGHEST ANNUAL MEAN					324	1997
LOWEST ANNUAL MEAN					138	1988
HIGHEST DAILY MEAN	1500	May 29	828	May 29	1830	May 29 1956
LOWEST DAILY MEAN	101	Feb 11	95	Jan 29	53	Dec 15 1988
ANNUAL SEVEN-DAY MINIMUM	108	Feb 10	107	Mar 29	61	Feb 1 1989
INSTANTANEOUS PEAK FLOW			887	May 28	b2080	Jun 4 1956
INSTANTANEOUS PEAK STAGE			3.68	May 28	5.03	Jun 2 1997
INSTANTANEOUS LOW FLOW			a75	Mar 22	c35	Mar 28 1942
ANNUAL RUNOFF (AC-FT)	194600		143200		158500	
10 PERCENT EXCEEDS	732		422		527	
50 PERCENT EXCEEDS	151		130		123	
90 PERCENT EXCEEDS	115		112		88	

*--During periods of operation (October 1938 to September 1972, April 1984 to current year).
a--Gage height, 1.90 ft.
b--Gage height, 4.46 ft.
c--Gage height, 1.08 ft.

YELLOWSTONE RIVER BASIN

06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT

(National water-quality assessment program)

LOCATION.--Lat 45°06'43", long 110°47'37", in $NW^1/_4SE^1/_4NW^1/_4$ sec.30, T.8 S., R.8 E., Park County, Hydrologic Unit 10070002, on left bank 20 ft downstream from county road bridge at Corwin Springs, 1.3 mi upstream from Mol Heron Creek, 7 mi northwest of Gardiner, and at river mile 549.7.

DRAINAGE AREA.--2,623 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1889 to November 1893 (published as "at Horr"), September 1910 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1912. WSP 1509: 1889-94, 1911, 1913, 1916-18, 1920-21, 1925, 1927. WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,079.09 ft above sea level. Aug. 12, 1889, to Nov. 4, 1893, nonrecording gages at site 2 mi upstream at different datums. Sept. 2, 1910, to Apr. 19, 1935, nonrecording gages on bridge at present datum.

REMARKS.--Water-discharge records good. Natural storage in Yellowstone Lake. Diversions for irrigation of about 960 acres of which 40 acres lies downstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1790	1290	1090	998	e950	975	982	5060	11900	6530	2670	1580
2	1750	1190	1080	987	988	973	1000	7180	11600	6370	2630	1620
3	1720	1230	1070	950	979	957	951	8050	12800	6060	2560	1560
4	1700	1270	905	942	922	954	985	9690	13000	5770	2520	1500
5	1680	1330	920	954	940	969	1120	8580	13300	5440	2600	1450
6	1660	1300	981	956	954	1010	1220	7150	13500	5180	2490	1440
7	1630	1240	1060	933	955	1010	1140	6230	13800	4970	2370	1440
8	1620	1230	955	929	948	1020	1090	5590	13500	4790	2280	1410
9	1600	1220	1000	933	970	1020	1140	5270	12400	4640	2220	1390
10	1590	1200	1030	910	976	1020	1180	5210	11300	4540	2180	1360
11	1550	1180	980	899	938	1010	1240	4820	10300	4380	2150	1350
12	1530	1170	996	900	967	942	1430	4280	10200	4250	2080	1320
13	1510	1160	1070	827	986	1020	1580	3970	11900	4090	2030	1300
14	1490	1140	898	926	990	993	1960	3800	9950	3950	1990	1270
15	1500	1110	927	994	981	948	1960	3950	10100	3820	1940	1260
16	1430	1120	953	1020	995	939	1980	4510	9960	3710	1920	1240
17	1380	1120	898	1020	966	1010	2020	6130	8930	3650	1880	1230
18	1420	1130	1020	969	924	974	2000	6010	8400	3690	1860	1230
19	1390	1090	1010	1000	954	991	2030	6870	9700	3750	1880	1240
20	1370	1110	1020	1010	922	903	2380	7890	10200	3550	1840	1240
21	1370	1070	1030	1010	964	915	2950	9370	8840	3410	1800	1250
22	1350	1070	1000	1000	989	975	3820	10300	8670	3300	1750	1260
23	1340	1010	981	981	983	1010	4280	11700	8550	3210	1720	1250
24	1320	1000	946	980	982	986	3820	12000	8550	3130	1690	1220
25	1320	1080	955	983	984	961	3050	13700	8410	3050	1680	1230
26	1310	1130	942	991	920	1010	2780	14400	7800	3000	1650	1220
27	1310	1170	948	966	990	1010	2870	12900	7580	2970	1740	1200
28	1340	1130	951	943	998	1050	4200	14100	7220	2890	1670	1180
29	1390	1090	935	870	992	1060	6420	15700	6950	2830	1600	1170
30	1330	1100	922	853	---	1020	4690	14400	6720	2790	1550	1160
31	1310	---	952	907	---	985	---	13700	---	2750	1570	---
TOTAL	46000	34680	30425	29541	28007	30620	68268	262510	306030	126460	62510	39570
MEAN	1484	1156	981	953	966	988	2276	8468	10200	4079	2016	1319
MAX	1790	1330	1090	1020	998	1060	6420	15700	13800	6530	2670	1620
MIN	1310	1000	898	827	920	903	951	3800	6720	2750	1550	1160
AC-FT	91240	68790	60350	58590	55550	60730	135400	520700	607000	250800	124000	78490

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1889 - 2000, BY WATER YEAR (WY)*

MEAN	1532	1197	970	855	842	922	1549	6084	11540	6866	3211	1964
MAX	2429	2058	1424	1361	1340	1376	3542	13590	22540	13260	5688	3207
(WY)	1973	1928	1984	1997	1997	1997	1990	1928	1997	1982	1982	1968
MIN	781	702	551	448	411	412	576	2575	4245	2025	1319	938
(WY)	1989	1989	1937	1937	1937	1937	1937	1975	1934	1919	1919	1988

06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT--Continued

(National water-quality assessment program)

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1889 - 2000*	
ANNUAL TOTAL	1406005		1064621			
ANNUAL MEAN	3852		2909		3136	
HIGHEST ANNUAL MEAN					5158	1997
LOWEST ANNUAL MEAN					1903	1934
HIGHEST DAILY MEAN	19500	Jun 22	15700	May 29	32000	Jun 14 1918
LOWEST DAILY MEAN	898	Dec 14	827	Jan 13	380	Feb 5 1989
ANNUAL SEVEN-DAY MINIMUM	943	Dec 24	903	Jan 8	393	Feb 4 1937
INSTANTANEOUS PEAK FLOW			17500	May 29	b32200	Jun 10 1996
INSTANTANEOUS PEAK STAGE			8.03	May 29	11.50	Jun 14 1918
INSTANTANEOUS LOW FLOW			a755	Mar 21	c343	Feb 2 1989
ANNUAL RUNOFF (AC-FT)	2789000		2112000		2272000	
10 PERCENT EXCEEDS	12000		8450		8530	
50 PERCENT EXCEEDS	1430		1320		1410	
90 PERCENT EXCEEDS	1070		950		765	

*--During periods of operation (August 1889 to November 1893, September 1910 to current year).
a--Gage height, 1.02 ft.
b--Gage height, 10.92 ft.
c--Gage height, 0.12 ft, result of freezeup.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-57, 1965, 1969-74, 1977-81, 1984-92, January to September 1999.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1984 to September 1985.

WATER TEMPERATURE: June 1977 to September 1981, March 1984 to September 1985.

SUSPENDED-SEDIMENT DISCHARGE: May 1985 to September 1987 (seasonal records only), September 1988 to September 1990, October 1990 to current year (seasonal records only).

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District Office. Samples collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (water years 1984-85): Maximum, 311 microsiemens per centimeter (µS/cm) at 25.0°C, Feb. 5, 1985; minimum,71 microsiemens per centimeter (µS/cm) at 25.0°C, June 21, 22, 1984.

WATER TEMPERATURE (water years 1977-81, 1984-85): Maximum, 21.5°C, July 22, 23, 1977; minimum, 0.0°C on many days during winters most years.

SEDIMENT CONCENTRATION (water years 1985-87, 1988-92): Maximum daily mean, 1,330 mg/L, May 19, 1991; minimum daily mean, 1 mg/L on several days in September 1987.

SEDIMENT LOAD (water years 1985-87, 1988-92): Maximum daily, 50,700 tons, May 25, 1991; minimum daily, 2.7 tons, Sept. 29, 1987.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT											
05...	1145	1690	--	--	10.6	8.4	206	18.0	8.0	54	14.1
NOV											
03...	0900	1250	635	109	11.9	8.2	232	11.0	4.0	60	15.4
DEC											
16...	1500	925	634	109	12.4	8.2	271	0.0	2.5	68	17.5
JAN											
13...	0930	780	637	103	12.4	8.1	291	0.0	0.5	77	20.5
FEB											
09...	0900	976	630	112	12.1	7.6	283	3.0	4.0	71	18.7
MAR											
15...	0900	991	632	111	12.1	8.4	273	8.0	4.0	68	17.7
APR											
11...	1000	1220	636	104	10.5	8.1	252	6.0	7.0	66	17.0
MAY											
15...	1300	4080	629	97	7.6	7.8	117	18.0	18.0	44	11.2
25...	1800	12800	625	112	11.0	7.5	85	19.0	7.5	29	7.44
JUN											
08...	1100	13600	624	--	--	7.3	79	22.0	8.0	25	6.48
27...	0700	7620	635	104	9.1	7.5	120	15.0	13.0	31	7.81
JUL											
11...	0800	4400	634	105	8.8	7.9	144	16.0	15.0	34	8.58
AUG											
15...	0830	1960	637	118	9.6	8.3	185	17.0	16.5	46	11.6
SEP											
27...	0800	1210	640	94	9.0	7.2	242	0.0	9.5	57	15.1

YELLOWSTONE RIVER BASIN

06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT											
05...	4.68	3.6	.9	16.1	56	68	0	9.8	.8	22.0	25.0
NOV											
03...	5.14	4.2	1	19.9	62	76	0	13.4	.9	25.2	30.5
DEC											
16...	5.91	4.7	1	22.4	75	87	2	13.6	1.0	28.5	37.8
JAN											
13...	6.23	5.2	1	22.8	--	102	0	13.6	1.0	28.3	42.9
FEB											
09...	6.01	5.3	1	22.5	69	84	0	13.8	1.1	30.2	38.2
MAR											
15...	5.80	5.5	1	23.9	71	86	0	13.5	1.1	29.5	37.6
APR											
11...	5.67	4.8	1	20.3	71	87	0	10.7	.8	27.0	32.8
MAY											
15...	3.75	2.2	.7	9.9	48	58	0	5.5	.5	18.9	13.7
25...	2.48	1.3	.4	4.8	31	38	0	2.1	.2	15.1	6.1
JUN											
08...	2.20	1.2	.5	5.3	30	37	0	2.2	.2	13.6	5.7
27...	2.78	1.8	.6	8.0	36	44	0	4.6	.4	14.8	9.4
JUL											
11...	3.08	2.1	.7	9.9	43	52	0	6.0	.5	15.6	12.7
AUG											
15...	4.02	2.8	.9	14.3	51	63	0	7.8	.7	18.4	19.6
SEP											
27...	4.82	4.3	1	18.6	64	78	0	11.6	.9	22.4	31.0

DATE	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT											
05...	.42	.16	.03	.09	.01	.010	.030	.016	1.7	<.2	.19
NOV											
03...	.13	.17	.06	.12	<.01	.009	<.010	.019	1.7	.3	.21
DEC											
16...	.23	.26	.16	.17	.01	.013	.020	.023	1.5	<.2	.25
JAN											
13...	.38	.31	.23	.33	.01	.014	.016	.023	1.4	.4	.26
FEB											
09...	.17	.24	.14	.23	.01	.015	.015	.026	1.4	.2	.26
MAR											
15...	.23	.26	.12	.26	.01	.015	<.010	.026	1.7	--	.25
APR											
11...	.17	.26	.06	.19	.01	.017	.015	.036	2.3	.3	.25
MAY											
15...	.12	.25	.04	<.05	<.01	.019	.015	.046	3.3	.2	.14
25...	.19	.41	.02	<.05	<.01	.027	.021	.307	4.1	1.8	.09
JUN											
08...	E.10	.30	.02	<.05	<.01	.026	.012	.192	2.5	1.2	.08
27...	E.10	.16	<.02	<.05	<.01	.020	.014	.044	2.0	.3	.10
JUL											
11...	E.10	.17	<.02	.06	<.01	.016	.023	.030	1.8	.5	.12
AUG											
15...	.11	.15	<.02	.10	.01	.012	<.010	.021	1.8	.4	.16
SEP											
27...	.11	.14	<.02	.16	.01	.011	<.010	.017	.92	.2	.21

E--Estimated.

06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	TUR-BID-ITY (NTU) (00076)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
05...	639	140	130	--	--	--	20	3	--	2	9.1
NOV											
03...	526	156	153	--	--	--	30	6	<.2	3	10
DEC											
16...	465	186	178	--	--	--	40	12	--	3	7.5
JAN											
13...	409	194	193	--	--	--	40	17	--	2	4.2
FEB											
09...	501	190	179	2.0	--	--	50	16	--	5	13
MAR											
15...	500	187	178	2.0	--	--	50	13	--	4	11
APR											
11...	600	182	163	4.6	--	--	50	12	--	8	26
MAY											
15...	1150	104	94	6.1	--	--	30	7	--	17	187
25...	2380	69	58	60	--	--	40	9	--	362	12500
JUN											
08...	2090	57	55	38	--	--	20	3	--	234	8590
27...	1560	76	71	6.0	K7	K5	10	3	--	24	494
JUL											
11...	1030	87	84	3.0	K9	K6	10	E2	--	10	119
AUG											
15...	635	120	111	3.0	K70	K4	20	3	--	4	21
SEP											
27...	516	158	147	1.9	K12	K4	40	4	--	--	--

K--Results based on non-ideal colony count.

YELLOWSTONE RIVER BASIN

06192500 YELLOWSTONE RIVER NEAR LIVINGSTON, MT

LOCATION.--Lat 45°35'50", long 110°33'55", in $NE^1/_4NW^1/_4NW^1/_4$ sec. 12, T.3 S., R.9 E., Park County, Hydrologic Unit 10070002, on right bank 50 ft downstream from bridge on Montana Secondary Highway 540, 2 mi downstream from Suce Creek, 4 mi south of Livingston, and at river mile 501.4.

DRAINAGE AREA.--3,551 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1897 to December 1905, August 1928 to September 1932, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1899. WSP 1509: 1902. WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,542.49 ft above sea level. May 2, 1897, to Dec. 31, 1905, nonrecording gage on highway bridge at different datum. Aug. 23, 1928, to Sept. 30, 1932, and Mar. 14, 1938, to Feb. 3, 1951, nonrecording gage on highway bridge at present datum.

REMARKS.--Water-discharge records good. Diversions for irrigation of about 24,200 acres of which about 2,000 acres is downstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2180	1720	1540	1470	e1050	1320	1300	5080	13500	7030	3020	1690
2	2140	1680	1540	1450	1320	1310	1310	6520	12800	6930	2930	1730
3	2130	1650	1520	1430	1410	1310	1310	7600	13800	6700	2810	1730
4	2110	1690	1450	1440	1370	1300	1280	9220	14400	6390	2770	1670
5	2100	1730	e1300	e1450	1330	1300	1340	8880	14600	6090	2780	1610
6	2070	1750	e1300	e1400	1350	1310	1480	7570	14900	5760	2820	1580
7	2050	1720	e1400	e1400	1360	1340	1500	6690	15400	5530	2660	1570
8	2020	1680	1460	e1400	1340	1350	1400	6060	15300	5360	2570	1560
9	2010	1670	e1300	e1450	1340	1340	1390	5650	14500	5220	2500	1540
10	2000	1660	e1500	e1400	1360	1340	1470	5650	13300	5110	2440	1520
11	1980	1640	1420	1400	1350	1340	1490	5310	12000	4970	2400	1510
12	1950	1620	e1350	1430	1330	1330	1590	4910	11400	4820	2360	1500
13	1930	1610	1480	e1350	1360	1300	1800	4580	13100	4670	2280	1460
14	1910	1600	e1450	1320	1370	1320	2020	4360	11600	4510	2200	1440
15	1910	1580	e1450	1390	1370	1300	2320	4350	11000	4430	2130	1430
16	1900	1550	e1450	1410	1350	1280	2190	4710	11700	4330	2080	1420
17	1840	1570	1410	1420	1340	1280	2280	5680	10400	4250	2030	1410
18	1840	1570	1400	1390	1310	1300	2300	6380	9430	4300	2000	1400
19	1840	1560	1470	1370	1280	1290	2310	6560	9760	4350	2020	1400
20	1810	1540	1450	1390	1330	1310	2480	7510	11400	4270	2000	1410
21	1800	1550	1470	1400	1310	1240	3010	8880	9830	4120	1960	1410
22	1790	1500	1460	1390	1350	1260	3760	10100	9450	4010	1920	1440
23	1780	1490	1460	1380	1350	1300	4340	12000	9370	3870	1890	1470
24	1760	1430	e1400	1360	1340	1310	4460	12800	9380	3740	1880	1450
25	1750	1480	e1400	1360	1360	1300	3780	13800	9300	3700	1830	1440
26	1730	1580	e1400	1370	1320	1300	3320	14800	8870	3620	1810	1440
27	1730	1610	e1400	1370	1310	1320	3240	14400	8280	3550	1830	1430
28	1750	1600	e1400	1350	1350	1340	3890	14300	7950	3420	1820	1400
29	1810	1560	e1400	e1250	1340	1390	5790	17400	7600	3300	1750	1390
30	1780	1530	e1400	e1050	---	1360	5430	16000	7210	3200	1690	1380
31	1750	---	1440	e1000	---	1330	---	15300	---	3110	1680	---
TOTAL	59150	48120	44270	42440	38650	40720	75580	273050	341530	144660	68860	44830
MEAN	1908	1604	1428	1369	1333	1314	2519	8808	11380	4666	2221	1494
MAX	2180	1750	1540	1470	1410	1390	5790	17400	15400	7030	3020	1730
MIN	1730	1430	1300	1000	1050	1240	1280	4350	7210	3110	1680	1380
AC-FT	117300	95450	87810	84180	76660	80770	149900	541600	677400	286900	136600	88920

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1897 - 2000, BY WATER YEAR (WY)*

MEAN	2042	1700	1399	1231	1226	1306	1969	6991	13480	7809	3686	2440
MAX	3115	2599	1984	1757	1800	1901	3852	13070	27140	14990	6000	3806
(WY)	1973	1984	1984	1984	1898	1898	1990	1897	1997	1975	1899	1968
MIN	1131	1099	977	727	763	899	1174	2751	4999	2748	1713	1305
(WY)	1989	1932	1932	1989	1989	1964	1961	1905	1987	1931	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1897 - 2000*	
ANNUAL TOTAL	1545280		1221860			
ANNUAL MEAN	4234		3338		3772	
HIGHEST ANNUAL MEAN					6119	1997
LOWEST ANNUAL MEAN					2437	1931
HIGHEST DAILY MEAN	22000	Jun 22	17400	May 29	36000	Jun 6 1997
LOWEST DAILY MEAN	1190	Feb 12	1000	Jan 31	540	Feb 4 1989
ANNUAL SEVEN-DAY MINIMUM	1300	Jan 29	1200	Jan 27	571	Feb 1 1989
INSTANTANEOUS PEAK FLOW			19300	May 29	38000	Jun 6 1997
INSTANTANEOUS PEAK STAGE			8.12	May 29	10.72	Jun 6 1997
INSTANTANEOUS LOW FLOW			a912	Jan 31		
ANNUAL RUNOFF (AC-FT)	3065000		2424000		2733000	
10 PERCENT EXCEEDS	12600		8980		9980	
50 PERCENT EXCEEDS	1840		1670		1900	
90 PERCENT EXCEEDS	1340		1320		1140	

*--During periods operation (May 1897 to December 1905, August 1928 to September 1932, October 1937 to current year).
a--Gage height, 2.53 ft.
e--Estimated.

06192500 YELLOWSTONE RIVER NEAR LIVINGSTON, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965, 1970-94, May to August 1999.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE:
SUSPENDED-SEDIMENT DISCHARGE: May 1985 to September 1986.
INSTRUMENTATION.--Temperature recorder installed Nov. 23, 1999.
REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 22.0°C, Aug. 1, 2, 2000; minimum, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATION (water years 1985-86): Maximum daily mean, 790 mg/L, May 28, 1986; minimum daily mean, 4 mg/L on several days in August 1985 and September 1986.
SEDIMENT LOAD: Maximum daily, 33,700 tons, June 2, 1986; minimum daily, 28 tons on several days in August and September 1985 and 1986.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 22.0°C, Aug. 1 and 2; minimum, 0.0°C on many days December to February.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
04...	0830	1650	8.0	257	14.0	5.5	.004
MAR 2000							
27...	1000	1340	8.4	281	23.5	7.5	.004
MAY							
31...	0805	15900	7.9	93	8.5	8.5	.001
AUG							
08...	1915	2560	8.6	190	27.0	20.0	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
04...	.127	.11	.003	.012	3	13	82
MAR 2000							
27...	.165	.26	.013	.032	7	25	90
MAY							
31...	.042	.33	.024	.262	294	12600	43
AUG							
08...	.027	.22	.001	.039	13	90	93

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999											
04...	0830	84	22	7.0	4.2	.8	18	85	9.9	.8	24
MAY 2000											
31...	0805	32	8.3	2.6	1.5	.4	5.2	36	1.6	.2	15

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
04...	28	166	.23	739	27	<.1	<1	1	<1	<2	<31
MAY 2000											
31...	6	62	.08	2660	14	<.1	5	7	3	6	13

YELLOWSTONE RIVER BASIN

06192500 YELLOWSTONE RIVER NEAR LIVINGSTON, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1							5.0	4.0	5.0	1.0	.5	.5
2							4.0	2.5	3.0	1.5	.0	.5
3							2.5	2.0	2.5	.5	.0	.0
4							2.0	.5	1.0	.0	.0	.0
5							1.0	.0	.0	.5	.0	.0
6							.0	.0	.0	.5	.0	.0
7							1.0	.0	.5	.0	.0	.0
8							1.0	.0	.5	.0	.0	.0
9							.0	.0	.0	.0	.0	.0
10							.5	.0	.0	.0	.0	.0
11							.5	.0	.0	.0	.0	.0
12							1.0	.0	.5	.5	.0	.0
13							1.0	.0	.5	.5	.0	.0
14							.0	.0	.0	1.5	.5	1.0
15							.0	.0	.0	2.0	1.5	1.5
16							.5	.0	.5	3.5	2.0	2.5
17							1.5	.5	1.0	3.5	2.5	3.0
18							2.0	1.0	1.5	2.5	1.5	2.0
19							1.5	.5	.5	3.0	1.5	2.0
20							1.5	1.0	1.0	3.0	2.0	2.5
21							1.5	1.5	1.5	3.0	2.5	3.0
22							2.5	1.5	2.0	3.0	2.5	2.5
23							2.0	.5	1.0	3.0	1.5	2.5
24				1.5	.5	1.0	.5	.0	.0	2.5	1.5	2.0
25				2.5	1.0	1.5	.0	.0	.0	2.0	.5	1.0
26				4.0	2.5	3.5	.0	.0	.0	3.5	2.0	3.0
27				4.5	3.0	4.0	.0	.0	.0	3.0	2.0	2.5
28				4.5	3.5	4.0	.0	.0	.0	3.0	1.0	2.0
29				5.0	3.5	4.0	.5	.0	.0	1.0	.0	.0
30				5.5	4.5	5.0	.0	.0	.0	.0	.0	.0
31				---	---	---	.5	.0	.0	.5	.0	.0
MONTH				---	---	---	5.0	0.0	0.5	3.5	0.0	1.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.0	7.0	5.0	6.0	8.0	5.5	6.5	11.5	7.0	9.5
2	1.5	.0	.5	7.0	4.5	6.0	6.0	4.5	5.5	11.0	8.5	10.0
3	2.0	1.0	1.5	7.5	4.5	6.0	8.5	3.5	6.0	11.5	7.5	9.5
4	1.0	.0	.5	7.5	4.5	6.0	10.5	6.0	8.5	11.0	7.5	9.5
5	2.5	.5	1.5	8.0	5.0	6.5	11.0	7.5	9.5	9.0	7.0	8.0
6	4.0	2.0	3.0	8.0	5.5	7.0	9.5	7.0	8.0	7.0	6.0	6.5
7	4.5	2.5	3.5	7.0	5.5	6.5	10.0	5.5	7.5	8.0	5.5	6.5
8	5.0	3.0	4.0	6.0	4.0	5.0	10.5	6.5	8.5	8.5	6.0	7.0
9	6.0	4.0	5.0	6.0	3.5	4.5	11.0	7.0	9.0	8.0	6.5	7.0
10	5.5	2.5	4.0	6.5	4.5	5.5	11.5	8.0	10.0	8.5	6.5	7.5
11	2.5	1.5	1.5	5.5	4.0	4.5	11.5	7.5	9.5	8.5	6.0	7.5
12	2.5	1.0	1.5	6.5	3.5	5.0	11.0	9.5	10.0	8.0	5.5	6.5
13	2.5	.5	1.5	6.0	4.0	5.0	10.5	8.5	10.0	8.5	5.5	7.0
14	3.0	1.5	2.0	6.0	4.0	5.0	8.5	5.5	7.0	10.0	7.0	8.5
15	4.0	3.0	3.5	6.0	3.5	5.0	10.0	6.0	7.5	12.0	8.5	10.0
16	4.5	2.5	3.5	6.5	3.5	5.0	10.0	7.5	9.0	11.5	9.5	10.0
17	3.5	1.5	2.5	6.0	4.0	5.0	10.5	8.0	9.0	10.5	8.5	9.5
18	3.5	1.5	2.5	6.5	4.5	5.5	9.5	8.0	9.0	11.0	7.5	9.5
19	2.5	.5	1.5	5.5	3.5	4.5	10.5	7.5	9.0	11.5	8.0	9.5
20	3.0	.0	1.5	5.5	3.0	4.0	12.0	8.5	10.0	12.0	8.5	10.5
21	4.5	2.5	3.5	6.5	2.5	4.5	13.0	9.5	11.0	12.0	8.5	10.0
22	6.0	3.5	4.5	7.5	3.0	5.5	11.5	9.0	10.5	11.0	8.5	9.5
23	5.0	3.5	4.5	6.5	5.0	5.5	10.5	8.0	9.0	10.5	8.0	9.0
24	5.5	4.0	4.5	6.5	4.0	5.5	9.5	6.5	7.5	9.0	7.5	8.5
25	5.0	3.0	4.0	7.5	4.0	6.0	8.5	6.5	7.0	10.0	7.5	8.5
26	4.0	1.5	2.5	9.5	6.0	7.5	10.5	6.5	8.5	9.5	8.0	8.5
27	4.5	2.0	3.0	10.5	6.5	8.5	11.5	8.0	10.0	10.5	7.0	8.5
28	6.0	4.0	5.0	10.0	7.5	8.5	12.5	9.5	11.0	11.0	8.0	9.5
29	7.0	4.5	5.5	7.5	5.5	6.5	12.0	8.5	10.0	8.5	7.0	8.0
30	---	---	---	9.5	6.0	7.5	9.5	5.5	7.5	10.5	7.0	9.0
31	---	---	---	8.5	5.5	7.0	---	---	---	11.0	8.0	9.0
MONTH	7.0	0.0	3.0	10.5	2.5	6.0	13.0	3.5	8.5	12.0	5.5	8.5

06192500 YELLOWSTONE RIVER NEAR LIVINGSTON, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.5	7.5	9.0	17.5	14.5	16.0	22.0	18.5	20.5	15.5	14.0	14.5
2	12.0	7.5	10.0	18.0	14.5	16.0	22.0	19.0	20.5	15.0	13.0	14.0
3	13.0	9.0	11.0	18.5	14.5	16.5	20.5	18.5	19.5	16.0	13.0	14.5
4	12.5	9.0	11.0	17.0	14.5	16.0	19.0	17.5	18.0	17.5	13.5	15.5
5	13.0	9.5	11.0	17.5	14.0	15.5	19.5	16.5	18.0	17.0	14.0	15.5
6	14.0	10.0	12.0	17.0	13.5	15.5	20.5	16.5	18.5	15.5	13.5	14.0
7	14.0	10.5	12.0	18.0	14.5	16.5	19.5	17.0	18.5	15.5	11.5	13.5
8	13.0	10.5	12.0	18.5	15.0	16.5	20.0	16.5	18.0	15.0	12.0	13.5
9	12.5	10.0	11.5	18.5	15.5	17.0	20.5	16.5	18.5	14.5	12.0	13.0
10	11.5	10.0	11.0	18.0	16.0	17.0	20.0	17.5	18.5	12.5	11.0	11.5
11	12.5	9.5	10.5	18.0	15.0	16.5	20.5	17.5	19.0	14.5	11.0	12.5
12	11.5	10.0	11.0	18.5	15.0	16.5	20.5	16.5	18.5	16.0	12.0	14.0
13	11.0	9.0	10.0	19.5	16.0	18.0	19.0	16.5	18.0	17.0	13.5	15.5
14	11.0	9.0	10.0	20.5	17.0	18.5	19.5	15.5	17.5	17.0	14.0	15.5
15	12.0	10.0	10.5	20.5	17.0	19.0	18.5	16.0	17.5	17.5	14.0	16.0
16	11.0	9.5	10.5	20.0	16.5	18.5	19.0	16.0	17.5	17.0	14.0	15.5
17	12.5	8.5	10.0	19.0	17.0	18.0	18.5	15.0	17.0	17.0	14.0	15.5
18	13.0	8.5	11.0	19.0	17.0	18.0	17.5	15.5	16.5	16.5	13.5	14.5
19	13.0	11.0	12.0	18.0	16.0	17.0	18.5	15.0	16.5	15.0	13.0	13.5
20	12.0	9.5	10.5	18.0	15.5	17.0	17.0	14.5	16.0	13.0	11.5	12.0
21	14.0	9.0	11.5	19.5	15.5	17.5	18.0	14.0	16.0	12.0	7.5	10.5
22	14.0	11.0	12.5	19.5	16.5	18.0	18.5	14.5	16.5	7.5	5.0	6.0
23	15.0	11.5	13.0	20.0	17.0	18.5	19.0	14.5	16.5	6.5	5.0	6.0
24	16.0	11.5	14.0	20.5	17.0	19.0	18.0	16.0	17.0	8.5	4.0	6.5
25	16.0	12.5	14.0	20.5	17.0	19.0	20.5	16.0	18.0	10.5	6.5	8.5
26	15.5	12.0	14.0	20.0	17.0	19.0	19.0	16.5	17.5	11.5	8.0	9.5
27	15.5	11.5	13.5	19.5	17.5	18.5	19.0	15.0	17.0	12.5	8.5	10.5
28	16.5	12.0	14.0	21.5	17.5	19.0	18.0	14.5	16.5	12.5	9.0	11.0
29	17.0	12.5	14.5	21.5	18.0	20.0	18.5	14.5	16.5	13.5	10.5	12.0
30	18.0	13.5	15.5	21.0	17.5	19.5	17.5	14.5	15.5	12.5	11.0	11.5
31	---	---	---	21.5	18.5	20.0	16.0	13.0	14.5	---	---	---
MONTH	18.0	7.5	12.0	21.5	13.5	17.5	22.0	13.0	17.5	17.5	4.0	12.5

YELLOWSTONE RIVER BASIN

06195600 SHIELDS RIVER NEAR LIVINGSTON, MT

LOCATION.--Lat 45°44'18", long 110°28'45", in NE$^1/_4$SE$^1/_4$NW$^1/_4$ sec.22, T.1 S., R.10 E., Park County, Hydrologic Unit 10070003, on right bank 0.2 mi downstream from private road bridge, 6.5 mi northeast of Livingston, and at river mile 2.0.
DRAINAGE AREA.--852 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 4,420 ft above sea level, from topographic map. Oct. 1, 1978, to Aug. 12, 1980, water-stage recorder at site 0.2 mi upstream at datum 7.89 ft higher.
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 32,000 acres upstream from station. National Weather Service satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	101	104	82	e60	84	88	157	285	207	e35	42
2	103	96	99	79	e70	80	87	152	240	236	e32	43
3	106	98	101	77	e60	82	83	156	232	229	e30	41
4	105	102	84	86	e55	83	82	149	260	216	e32	40
5	104	107	e90	e80	e65	86	97	146	283	207	45	38
6	103	108	99	e75	e70	90	122	149	284	190	e38	37
7	103	106	94	e80	e75	92	117	142	368	182	e37	38
8	103	104	93	e80	72	94	104	124	365	171	e36	37
9	102	101	90	e75	73	84	102	107	326	161	35	38
10	100	100	93	69	74	76	109	103	309	157	34	41
11	100	100	102	66	66	80	115	107	250	139	36	47
12	101	102	90	74	72	77	119	130	216	124	38	51
13	100	101	87	86	74	76	127	134	237	113	37	50
14	100	100	85	91	73	76	160	134	217	98	35	48
15	98	100	e85	89	71	73	160	130	244	79	38	45
16	101	100	88	84	69	71	143	133	285	65	37	43
17	100	100	83	e75	e60	76	144	360	247	63	36	42
18	101	101	82	e65	e55	75	161	605	213	61	37	45
19	102	99	68	e70	e60	74	176	429	223	58	44	48
20	101	100	82	e75	e60	70	174	330	299	57	46	50
21	100	100	83	e70	e65	65	176	283	326	58	38	59
22	100	94	81	e65	e70	72	183	276	338	58	41	71
23	99	86	e72	e60	e75	76	233	341	340	55	41	76
24	98	98	e70	e65	81	77	253	351	301	53	42	71
25	97	100	e68	e65	79	74	209	318	305	48	44	71
26	96	109	e65	e55	64	78	188	318	297	49	40	71
27	97	114	e65	e50	81	84	166	289	264	44	39	72
28	102	108	e67	e47	82	93	149	300	241	45	38	72
29	110	99	e70	e47	84	106	164	341	226	41	39	71
30	112	103	e75	e45	---	103	159	383	215	41	42	70
31	107	---	81	e50	---	95	---	332	---	37	43	---
TOTAL	3150	3037	2596	2177	2015	2522	4350	7409	8236	3342	1185	1568
MEAN	102	101	83.7	70.2	69.5	81.4	145	239	275	108	38.2	52.3
MAX	112	114	104	91	84	106	253	605	368	236	46	76
MIN	96	86	65	45	55	65	82	103	213	37	30	37
AC-FT	6250	6020	5150	4320	4000	5000	8630	14700	16340	6630	2350	3110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 2000, BY WATER YEAR (WY)

MEAN	157	138	111	106	130	186	389	860	801	340	141	139
MAX	275	195	145	225	363	461	627	1962	2260	1135	677	388
(WY)	1979	1984	1990	1984	1996	1997	1996	1997	1997	1993	1993	1993
MIN	51.5	73.8	73.6	55.5	59.8	81.4	145	198	152	53.6	25.6	31.2
(WY)	1989	1989	1988	1988	1988	2000	2000	1987	1985	1988	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1979 - 2000	
ANNUAL TOTAL	73256		41587			
ANNUAL MEAN	201		114		292	
HIGHEST ANNUAL MEAN					610	1997
LOWEST ANNUAL MEAN					114	2000
HIGHEST DAILY MEAN	1200	May 30	605	May 18	4760	Jun 20 1979
LOWEST DAILY MEAN	56	Aug 4	30	Aug 3	20	Aug 21 1988
ANNUAL SEVEN-DAY MINIMUM	61	Aug 4	35	Jul 29	22	Aug 20 1988
INSTANTANEOUS PEAK FLOW			723	May 17	5600	Jun 20 1979
INSTANTANEOUS PEAK STAGE			3.36	May 17	a6.80	Jun 20 1979
INSTANTANEOUS LOW FLOW					b17	Aug 20 1988
ANNUAL RUNOFF (AC-FT)	145300		82490		211500	
10 PERCENT EXCEEDS	492		242		735	
50 PERCENT EXCEEDS	104		88		146	
90 PERCENT EXCEEDS	85		42		74	

a--Site and datum then in use.
b--Gage height, 1.44 ft.
e--Estimated.

06195600 SHIELDS RIVER NEAR LIVINGSTON, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1999 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1999 to September 2000.
INSTRUMENTATION.--Temperature recorder installed Sept. 14, 1999.
REMARKS.--Missing temperature data for Oct. 28 to Jan 28 due to equipment problems and July 16-19 when low water caused probe to be above the water surface.. 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, 24.0°C, July 29 and Aug. 1, 2000; minimum, 0.0°C on many days in January and February 2000.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 24.0°C, July 29 and Aug. 1; minimum, 0.0°C on many days in January and February.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
03...	1615	98	8.6	460	19.0	6.0	.001
MAR 2000							
27...	1315	84	8.6	410	26.0	9.5	<.001
MAY							
31...	1245	328	8.6	332	20.0	13.5	<.001
AUG							
09...	1015	35	8.3	510	20.5	14.5	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
03...	.301	.18	<.001	.009	39	10	50
MAR 2000							
27...	.139	.26	.005	.022	10	2.3	70
MAY							
31...	.038	.34	.002	.054	31	27	77
AUG							
09...	.022	.28	<.007	.014	19	1.8	77

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999											
03...	1615	200	60	12	1.4	.8	27	216	6.2	.3	10
MAY 2000											
31...	1245	140	41	8.3	1.0	.6	16	165	2.2	.2	8.6

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
03...	30	278	.38	74	<3	<.1	<1	E1	<1	<2	<31
MAY 2000											
31...	16	192	.26	170	<3	<.1	1	2	<1	1	3

E--Estimated.

YELLOWSTONE RIVER BASIN

06195600 SHIELDS RIVER NEAR LIVINGSTON, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, CALENDAR YEAR JANUARY TO DECEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.5	7.0	8.5	---	---	---	---	---	---	---	---	---
2	8.5	6.0	7.0	---	---	---	---	---	---	---	---	---
3	9.5	4.5	7.0	---	---	---	---	---	---	---	---	---
4	10.5	5.5	8.0	---	---	---	---	---	---	---	---	---
5	10.5	6.0	8.5	---	---	---	---	---	---	---	---	---
6	9.5	7.0	8.5	---	---	---	---	---	---	---	---	---
7	10.5	6.5	8.5	---	---	---	---	---	---	---	---	---
8	12.5	7.5	10.0	---	---	---	---	---	---	---	---	---
9	10.0	9.0	9.5	---	---	---	---	---	---	---	---	---
10	11.5	7.5	9.5	---	---	---	---	---	---	---	---	---
11	10.5	7.0	9.0	---	---	---	---	---	---	---	---	---
12	10.5	8.0	9.0	---	---	---	---	---	---	---	---	---
13	12.0	6.5	9.0	---	---	---	---	---	---	---	---	---
14	12.5	8.5	10.0	---	---	---	---	---	---	---	---	---
15	8.5	5.5	7.0	---	---	---	---	---	---	---	---	---
16	6.5	3.0	5.0	---	---	---	---	---	---	---	---	---
17	5.0	3.0	4.0	---	---	---	---	---	---	---	---	---
18	8.0	5.0	6.0	---	---	---	---	---	---	---	---	---
19	7.5	3.5	5.5	---	---	---	---	---	---	---	---	---
20	8.5	3.5	6.0	---	---	---	---	---	---	---	---	---
21	8.5	4.5	6.5	---	---	---	---	---	---	---	---	---
22	9.0	4.5	6.5	---	---	---	---	---	---	---	---	---
23	8.0	4.0	6.5	---	---	---	---	---	---	---	---	---
24	8.0	4.0	6.0	---	---	---	---	---	---	---	---	---
25	8.5	4.5	6.5	---	---	---	---	---	---	---	---	---
26	9.0	5.5	7.5	---	---	---	---	---	---	---	---	---
27	8.0	6.0	7.0	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	.0	.0	.0
30	---	---	---	---	---	---	---	---	---	.5	.0	.0
31	---	---	---	---	---	---	---	---	---	.0	.0	.0
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	5.5	2.5	4.0	6.0	3.0	5.0	16.5	8.5	12.5
2	.5	.0	.0	6.0	1.0	3.5	7.0	3.5	5.0	14.5	11.0	13.0
3	1.0	.0	.0	6.5	2.0	4.0	9.0	1.5	5.5	16.0	10.0	13.0
4	.0	.0	.0	7.0	2.0	4.5	12.0	5.5	9.0	14.0	11.5	13.0
5	.0	.0	.0	8.0	3.0	5.5	10.5	6.0	8.5	12.5	10.0	11.0
6	3.0	.0	1.0	7.0	3.5	5.5	9.0	4.5	7.0	10.0	8.0	9.5
7	3.0	.0	1.5	5.5	3.5	4.5	9.0	3.0	5.5	11.0	8.0	9.0
8	4.0	1.0	2.5	4.5	1.5	3.0	11.0	3.5	7.5	13.0	7.0	10.0
9	5.0	2.0	3.5	4.5	1.0	2.5	11.0	6.0	8.5	12.0	8.0	10.0
10	3.5	.0	1.5	6.0	1.5	3.5	12.0	6.5	9.0	12.5	7.5	9.5
11	.0	.0	.0	4.0	2.0	3.0	12.0	5.5	9.0	10.5	6.5	8.5
12	.0	.0	.0	5.5	1.5	3.0	10.0	8.0	9.0	10.0	6.0	7.5
13	.5	.0	.0	6.5	2.5	4.0	10.5	7.0	9.0	11.0	6.0	8.0
14	.5	.0	.0	7.0	3.0	4.5	7.0	4.0	5.0	14.5	7.5	10.5
15	2.5	.0	1.0	5.5	1.0	3.0	10.0	3.0	6.5	16.0	9.0	12.5
16	3.0	.5	1.5	6.0	1.0	3.5	10.0	6.0	8.5	13.0	10.5	11.5
17	2.0	.0	.5	6.5	3.5	5.0	11.0	7.0	9.5	10.5	8.5	9.5
18	1.0	.0	.0	7.0	2.5	4.5	9.5	7.5	8.5	12.5	7.0	9.5
19	.5	.0	.0	4.5	2.0	3.0	13.0	7.5	10.0	11.5	9.0	10.0
20	1.0	.0	.0	5.5	.5	3.0	13.5	8.5	11.0	14.0	8.0	10.5
21	4.0	.0	1.5	5.5	.5	3.5	14.5	9.0	11.5	13.5	10.0	12.0
22	4.5	.5	2.5	8.5	2.0	5.0	13.5	9.5	11.5	15.0	10.5	12.5
23	3.5	1.0	2.5	6.0	3.5	5.0	11.5	9.0	10.0	15.0	11.5	13.0
24	4.0	2.0	2.5	7.0	2.0	4.5	11.5	7.5	9.5	13.5	10.0	11.5
25	3.5	1.0	2.0	8.5	2.0	5.5	9.0	6.5	8.0	16.0	10.5	13.0
26	4.5	.0	1.5	10.5	5.0	7.5	12.5	6.5	9.5	14.0	11.5	13.0
27	3.5	.5	2.0	11.0	4.5	8.0	13.5	7.0	10.5	14.0	9.5	12.0
28	6.0	3.0	4.0	8.5	6.0	7.5	14.5	8.0	11.5	13.5	11.5	12.5
29	6.0	2.5	4.0	8.0	3.5	5.5	11.5	8.0	9.5	13.0	8.5	10.5
30	---	---	---	8.0	4.5	6.0	13.0	5.5	9.5	12.5	7.5	9.5
31	---	---	---	6.5	2.5	5.0	---	---	---	12.5	8.5	10.5
MONTH	6.0	0.0	1.0	11.0	0.5	4.5	14.5	1.5	8.5	16.5	6.0	11.0

YELLOWSTONE RIVER BASIN

06195600 SHIELDS RIVER NEAR LIVINGSTON, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, CALENDAR YEAR JANUARY TO DECEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	14.5	7.0	10.5	18.0	14.5	16.0	24.0	16.0	19.5	16.0	12.0	13.5
2	16.5	9.0	12.5	18.5	12.5	15.5	22.5	15.5	19.0	17.5	11.5	14.0
3	17.0	11.5	14.5	20.5	14.0	17.0	22.5	15.0	18.5	17.0	11.0	13.5
4	17.0	11.0	14.0	17.0	13.5	15.5	18.0	14.5	16.5	18.5	11.5	15.0
5	17.5	11.5	14.5	18.5	12.0	15.5	21.0	13.5	17.0	20.0	14.0	16.0
6	19.0	12.5	15.5	19.0	13.5	16.0	21.0	13.5	17.5	14.0	11.5	13.0
7	18.0	13.0	15.5	20.5	13.0	16.5	20.5	14.0	17.0	16.5	9.0	12.5
8	16.0	12.0	14.0	21.0	14.0	17.5	20.5	12.5	16.5	16.5	9.5	12.5
9	15.0	12.0	13.5	18.5	14.5	17.0	21.0	13.0	17.0	13.5	10.0	12.0
10	14.5	11.0	13.0	19.0	13.0	16.0	20.5	14.5	17.0	12.5	9.0	10.5
11	15.5	10.0	12.5	20.5	12.5	16.5	22.0	14.5	18.0	17.0	10.5	13.0
12	13.0	11.5	12.0	20.5	14.0	17.5	21.5	13.0	17.5	17.5	10.5	14.0
13	14.5	10.0	12.0	21.0	14.5	18.0	19.5	13.0	16.5	18.5	11.5	14.5
14	13.5	10.0	11.5	22.0	15.0	18.5	21.0	12.5	16.5	18.5	11.5	15.0
15	13.5	11.0	12.0	20.5	14.0	17.5	19.0	12.5	16.0	19.5	12.0	15.5
16	14.0	9.0	11.5	---	---	---	20.0	13.0	16.0	19.0	12.5	15.5
17	16.5	9.5	12.5	---	---	---	19.5	12.0	15.5	18.5	12.5	15.0
18	18.0	11.0	14.5	---	---	---	17.0	12.0	14.5	14.5	12.0	13.5
19	15.5	11.5	13.5	---	---	---	19.0	11.5	15.0	16.0	11.0	13.0
20	15.0	10.5	12.5	21.5	14.5	18.0	17.5	12.0	14.5	12.0	8.0	10.5
21	17.0	10.5	14.0	22.5	14.0	18.5	19.0	11.0	15.0	10.5	6.0	9.0
22	16.0	13.5	14.5	23.5	14.5	19.0	19.0	11.0	15.0	7.0	4.0	5.5
23	17.0	11.5	14.0	22.5	15.0	19.0	20.0	12.0	16.0	6.5	3.5	5.0
24	17.5	12.5	15.0	21.5	14.0	18.0	19.5	13.5	16.0	9.5	3.0	6.0
25	17.5	12.0	14.5	22.0	13.5	18.0	20.0	12.5	16.0	11.5	5.5	8.5
26	17.0	11.5	14.5	22.0	14.5	18.5	17.5	13.0	15.5	12.5	6.5	9.5
27	18.5	12.5	15.0	21.0	14.5	18.0	18.5	11.5	15.0	13.0	7.0	10.0
28	19.5	12.0	15.5	23.0	13.5	18.5	19.0	11.5	15.0	12.5	7.0	10.0
29	19.5	14.0	16.5	24.0	15.0	19.5	19.0	11.0	15.0	14.0	9.0	11.5
30	20.5	13.5	17.0	22.5	14.5	19.0	15.0	11.5	13.0	13.0	10.5	11.5
31	---	---	---	23.5	16.5	19.5	16.0	9.5	13.0	---	---	---
MONTH	20.5	7.0	14.0	---	---	---	24.0	9.5	16.0	20.0	3.0	12.0

YELLOWSTONE RIVER BASIN

06200000 BOULDER RIVER AT BIG TIMBER, MT

LOCATION.--Lat 45°50'03", long 109°56'17", in $SE^1/_4NE^1/_4SE^1/_4$ sec.14, T.1 N., R.14 E., Sweet Grass County, Hydrologic Unit 10070002, on left bank 150 ft upstream from Old Boulder Bridge, 1 mi east of Big Timber, and at river mile 1.6.

DRAINAGE AREA.--523 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1947 to December 1953, March 1955 to current year. Monthly discharge only for April 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 4,056.39 ft above sea level (levels by U.S. Army Corps of Engineers).

REMARKS.--Water-discharge records good except those above 1,500 ft^3/s, which are fair, and those for estimated daily discharges, which are poor. Diversions for irrigation of about 13,300 acres, of which about 250 acres is downstream of 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, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142	144	129	126	152	107	106	297	1790	1670	165	67
2	176	137	127	119	151	105	114	430	1630	1750	142	69
3	166	133	124	100	139	103	109	653	2040	1610	113	68
4	153	141	105	97	95	102	103	1020	2550	1470	108	67
5	149	149	98	126	131	e100	109	1060	2860	1260	115	65
6	148	150	122	e95	132	e90	115	817	3120	1150	113	62
7	149	146	152	e95	121	e80	109	650	3370	1030	104	61
8	156	143	124	e100	e110	e90	98	507	3450	976	100	61
9	148	140	107	e110	e90	e100	93	419	3310	946	98	60
10	148	139	119	e100	e80	104	98	387	2760	915	92	60
11	149	135	123	e95	e90	104	104	356	2160	874	92	61
12	148	133	136	e90	e100	102	107	328	2100	797	89	62
13	146	130	154	e95	e100	101	124	281	2350	718	87	62
14	142	129	107	e100	e100	101	157	245	1830	646	84	61
15	137	126	133	165	e100	101	164	233	2220	582	81	61
16	146	125	154	150	e100	99	148	277	2250	542	79	60
17	152	128	154	150	e90	96	144	527	1720	502	77	59
18	164	125	144	124	86	101	148	508	1520	505	76	58
19	172	125	130	144	93	100	162	495	1830	442	76	59
20	165	120	129	136	e100	102	156	604	2040	409	74	68
21	166	125	141	e120	e110	97	167	825	1680	405	72	75
22	167	117	140	e110	e110	98	198	1150	1720	351	70	107
23	162	111	136	e90	e110	104	242	1780	2020	316	67	115
24	157	101	137	e100	e110	109	290	2030	2160	284	66	135
25	153	126	133	e100	e100	104	243	1910	2320	257	67	149
26	148	135	123	e120	99	103	209	2450	2020	235	67	155
27	147	151	132	e100	106	106	183	2100	1720	220	67	154
28	150	139	131	e90	113	106	179	2600	1620	210	67	146
29	152	132	128	85	110	115	306	3420	1630	198	67	141
30	150	129	123	93	---	114	344	2390	1640	190	68	137
31	145	---	123	130	---	110	---	2130	---	172	68	---
TOTAL	4753	3964	4018	3455	3128	3154	4829	32879	65430	21632	2711	2565
MEAN	153	132	130	111	108	102	161	1061	2181	698	87.5	85.5
MAX	176	151	154	165	152	115	344	3420	3450	1750	165	155
MIN	137	101	98	85	80	80	93	233	1520	172	66	58
AC-FT	9430	7860	7970	6850	6200	6260	9580	65220	129800	42910	5380	5090

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2000, BY WATER YEAR (WY)*

MEAN	224	194	156	138	130	130	212	1153	2792	1281	247	196
MAX	417	282	214	214	197	179	390	2241	4638	4307	709	534
(WY)	1973	1998	1976	1984	1985	1979	1962	1976	1997	1975	1968	1968
MIN	77.5	108	71.8	73.7	81.5	101	66.7	429	894	193	21.9	27.7
(WY)	1989	1988	1988	1988	1989	1988	1961	1953	1987	1988	1961	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1948 - 2000*	
ANNUAL TOTAL	191425		152518			
ANNUAL MEAN	524		417		574	
HIGHEST ANNUAL MEAN					905	1975
LOWEST ANNUAL MEAN					330	1987
HIGHEST DAILY MEAN	5100	Jun 22	3450	Jun 8	8540	Jul 5 1975
LOWEST DAILY MEAN	80	Jan 24	58	Sep 18	12	Aug 26 1961
ANNUAL SEVEN-DAY MINIMUM	104	Apr 14	60	Sep 13	13	Aug 25 1961
INSTANTANEOUS PEAK FLOW			3930	Jun 8	b9940	Jun 5 1997
INSTANTANEOUS PEAK STAGE			5.65	Jun 8	9.00	Jun 5 1997
INSTANTANEOUS LOW FLOW			a57	Sep 17	10	Aug 26 1961
ANNUAL RUNOFF (AC-FT)	379700		302500		416000	
10 PERCENT EXCEEDS	2060		1650		1750	
50 PERCENT EXCEEDS	148		133		184	
90 PERCENT EXCEEDS	116		78		103	

*--During period of operation (1948-53, 1956 to current year).
a--Gage height, 0.67 ft.
b--From rating curve extended above 6,000 ft^3/s.
e--Estimated.

06200000 BOULDER RIVER AT BIG TIMBER, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1965, May to August 1999.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Seasonal records, April to September 2000.
INSTRUMENTATION.--Temperature recorder installed Aug. 26, 1999.
REMARKS--Unpublished records of instantaneous specific conductance and temperature data are available in files of the District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE (seasonal records).: Maximum, 23.0°C, several days in August 2000; minimum, 2.0°C, April 3, 2000.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: For period of collection, April to September, maximum, 23.0°C, many days in July and August; minimum, 2.0°C, Apr. 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
04...	1030	141	8.4	262	16.5	7.0	<.001
MAR 2000							
27...	1145	105	8.5	262	26.0	9.0	<.001
MAY							
31...	1030	2260	8.1	72	13.5	7.5	<.001
AUG							
09...	1230	100	8.3	235	28.0	17.0	<.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
04...	.048	E.05	<.001	<.008	1	.38	81
MAR 2000							
27...	.015	.10	.002	<.008	2	.57	82
MAY							
31...	.033	.19	.002	.031	25	153	56
AUG							
09...	.011	.15	.001	.013	8	2.2	96

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999											
04...	1030	130	35	10	1.6	.2	4.6	111	.8	.1	10
MAY 2000											
31...	1030	31	8.5	2.4	.8	.1	1.4	31	E.2	<.1	7.5

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
04...	27	157	.21	60	<3	<.1	<1	E.7	<1	<2	<31
MAY 2000											
31...	3.9	E44	E.06	E266	<3	<.1	2	2.2	<1	1	4

E--Estimated.

YELLOWSTONE RIVER BASIN

06200000 BOULDER RIVER AT BIG TIMBER, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR APRIL TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
								APRIL			MAY	
1							8.5	4.0	6.5	16.5	9.0	12.5
2							6.5	4.5	5.5	14.5	11.0	13.0
3							10.0	2.0	6.0	14.5	10.0	12.0
4							14.5	6.0	10.0	12.5	9.5	11.0
5							12.0	7.0	9.5	10.5	8.0	9.0
6							9.0	5.0	7.5	9.0	6.0	7.5
7							10.5	2.5	6.0	8.0	6.5	7.0
8							12.5	4.0	8.0	11.0	6.0	8.0
9							13.0	6.0	9.5	10.5	7.0	8.5
10							14.0	7.5	10.5	11.5	6.5	8.5
11							13.5	6.0	9.5	10.0	6.5	8.0
12							13.0	8.0	10.5	9.0	5.5	7.0
13							12.5	7.5	10.5	11.5	5.5	8.0
14							7.5	4.5	5.5	14.0	8.0	10.5
15							10.5	3.5	6.5	16.0	9.5	12.5
16							12.5	6.0	9.0	12.5	10.0	11.5
17							12.5	7.5	10.0	10.5	9.0	9.5
18							10.5	7.5	8.5	14.0	7.0	10.5
19							14.0	7.0	10.0	13.5	10.5	11.5
20							15.5	9.0	12.0	14.0	9.0	11.5
21							16.5	9.5	12.5	13.0	10.0	11.5
22							15.0	10.5	12.5	13.0	9.5	11.0
23							12.5	8.5	10.0	11.5	8.5	10.0
24							11.0	7.0	9.0	10.0	7.5	8.5
25							11.0	6.5	8.5	11.5	7.5	9.5
26							13.0	6.0	9.5	10.0	8.0	9.0
27							15.0	7.0	11.0	11.0	6.5	8.5
28							16.0	9.0	12.0	10.0	8.0	9.5
29							13.0	8.5	10.0	8.0	5.5	6.0
30							13.0	6.5	10.0	7.5	5.5	6.5
31							---	---	---	9.5	7.5	8.0
MONTH							16.5	2.0	9.0	16.5	5.5	9.5
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.5	6.0	8.0	15.0	12.5	14.0	23.0	16.5	19.5	17.0	13.0	14.5
2	12.0	7.5	10.0	16.0	11.5	13.5	23.0	16.5	19.5	18.0	12.5	15.0
3	12.5	9.5	11.0	15.5	12.5	14.0	22.5	16.5	19.0	18.0	12.0	14.5
4	12.0	9.0	10.5	14.5	12.0	13.5	18.5	15.5	17.0	20.0	12.5	16.0
5	12.5	9.5	11.0	15.5	11.0	13.5	21.0	15.0	17.5	21.0	15.0	17.5
6	12.5	10.0	11.5	16.0	11.5	14.0	21.5	14.5	18.0	15.5	12.5	14.0
7	12.5	9.5	11.5	16.5	11.5	14.0	21.0	15.5	18.0	18.0	10.0	13.5
8	12.0	9.5	11.0	18.0	12.5	15.0	21.5	14.5	17.5	18.0	11.0	14.5
9	11.5	9.5	10.5	17.5	13.5	15.5	21.5	14.5	17.5	14.5	10.5	12.5
10	11.0	9.0	10.0	16.5	13.0	14.5	20.0	16.0	17.5	15.0	10.0	12.5
11	12.0	9.0	10.5	17.5	12.0	15.0	23.0	15.0	18.5	17.0	11.0	13.5
12	11.5	10.0	10.5	17.5	13.0	15.5	22.5	15.0	18.5	18.5	11.5	14.5
13	11.0	8.5	9.5	19.0	13.5	16.0	21.5	14.5	18.0	19.5	12.5	16.0
14	11.5	8.5	10.0	19.5	13.5	16.5	21.5	14.0	17.5	19.5	12.5	15.5
15	11.5	9.0	10.5	19.0	14.0	16.5	21.0	14.0	17.5	20.0	12.5	16.0
16	10.5	8.0	9.0	19.0	14.0	16.5	21.0	14.5	17.5	20.0	13.0	16.5
17	12.5	8.0	10.0	17.5	13.5	15.5	21.0	13.0	17.0	19.5	13.0	16.0
18	13.5	9.0	11.5	17.5	14.0	15.5	18.0	13.5	16.0	16.0	13.0	14.0
19	12.5	10.0	11.5	18.5	13.0	15.5	21.0	13.5	17.0	15.5	11.0	13.5
20	11.0	8.5	10.0	18.0	13.0	15.5	18.5	14.0	16.0	13.5	8.5	11.0
21	14.5	9.0	11.5	19.5	13.0	16.0	19.5	12.0	15.5	11.5	6.0	9.5
22	13.5	11.0	12.0	19.5	13.5	16.5	20.5	12.5	16.0	7.0	3.0	5.0
23	13.5	10.0	11.5	20.5	14.5	17.5	21.5	13.0	17.0	8.0	4.0	5.5
24	14.0	11.0	12.5	19.5	13.5	16.5	21.0	15.0	17.5	10.0	3.0	6.5
25	13.0	11.0	12.0	20.0	13.5	17.0	16.5	14.5	15.0	12.0	5.5	8.5
26	13.0	9.5	11.5	19.0	14.5	17.0	14.5	14.5	14.5	13.5	7.0	10.0
27	14.0	10.0	12.0	20.0	15.0	17.5	14.5	14.5	14.5	13.5	8.0	10.5
28	14.5	10.5	12.5	21.5	14.0	17.5	14.5	14.5	14.5	13.5	8.0	11.0
29	15.0	11.5	13.5	22.5	15.5	18.5	20.5	12.5	16.0	14.0	10.0	12.0
30	15.5	11.5	13.5	22.5	15.5	19.0	17.0	13.5	14.5	13.5	10.0	11.5
31	---	---	---	22.0	16.5	19.0	17.5	11.0	14.0	---	---	---
MONTH	15.5	6.0	11.0	22.5	11.0	16.0	23.0	11.0	17.0	21.0	3.0	12.5

YELLOWSTONE RIVER BASIN

06204050 WEST ROSEBUD CREEK NEAR ROSCOE, MT

LOCATION.--Lat 45°14'35", long 109°43'50", in NE$^1/_4$ sec.10, T.7 S., R.16 E., Stillwater County, Hydrologic Unit 10070005, on left bank at Mystic Lake powerplant, 2.0 mi downstream from Mystic Lake, 13.5 mi southwest of Roscoe, and at river mile 26.8.
DRAINAGE AREA.--52.1 mi^2.
PERIOD OF RECORD.--September 1965 to current year.
GAGE.--Water-stage recorder and rectangular weir. Datum of gage is 6,535.60 ft above sea level.
REMARKS.--Records good. Flow regulated by Mystic Lake (station number 06204000). Several observations of water temperature and specific conductance were made during the year.
AVERAGE DISCHARGE.--34 years, 122 ft^3/s, 31.80 in/yr, 88,390 acre-ft/yr, adjusted for change in contents in Mystic Lake.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,630 ft^3/s, July 6, 1975, gage height, 4.71 ft; minimum daily, 2.5 ft^3/s, Apr. 3, 4, 6, 7, 1967.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 399 ft^3/s, July 10, gage height, 2.04 ft; minimum daily, 27 ft^3/s Apr. 19

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170	62	40	39	35	61	72	39	101	192	189	184
2	168	61	39	39	36	61	69	40	98	195	190	183
3	168	61	40	39	36	61	68	41	100	220	190	183
4	167	61	39	39	35	61	66	42	101	250	193	183
5	168	50	39	39	36	59	52	42	102	250	194	182
6	169	39	39	37	35	73	50	41	103	238	195	183
7	170	39	39	36	35	79	50	40	105	245	195	179
8	170	39	39	37	35	79	42	31	111	259	186	133
9	169	39	39	37	35	79	44	40	110	284	183	92
10	169	38	39	37	36	79	47	41	109	323	182	91
11	168	39	39	38	37	78	48	39	106	305	181	92
12	169	38	39	38	37	78	51	39	106	287	179	92
13	169	39	39	37	37	77	51	39	149	284	178	91
14	170	39	39	36	37	77	45	38	187	280	177	91
15	171	39	39	37	37	76	46	38	191	271	178	91
16	171	39	38	37	37	76	42	38	190	265	177	91
17	170	39	39	37	37	76	45	37	187	248	175	90
18	171	40	39	38	37	76	43	51	184	236	180	91
19	166	39	40	39	37	76	27	68	98	258	181	92
20	84	39	41	39	37	76	31	68	98	250	180	92
21	160	39	41	39	37	76	40	67	96	237	179	92
22	160	39	39	39	37	81	39	69	96	228	180	92
23	161	38	39	39	37	86	39	78	144	223	180	92
24	148	41	40	39	37	85	40	86	191	218	180	92
25	138	40	39	39	37	86	38	82	194	206	180	92
26	88	41	39	39	37	86	38	93	194	188	142	92
27	139	40	39	39	37	85	38	107	192	189	78	91
28	114	40	39	39	49	85	38	110	192	187	184	91
29	64	39	39	38	61	81	40	113	190	188	183	121
30	62	39	39	37	---	73	39	106	190	192	184	152
31	61	---	39	40	---	72	---	101	---	191	184	---
TOTAL	4592	1275	1216	1182	1093	2354	1378	1864	4215	7387	5537	3513
MEAN	148	42.5	39.2	38.1	37.7	75.9	45.9	60.1	140	238	179	117
MAX	171	62	41	40	61	86	72	113	194	323	195	184
MIN	61	38	38	36	35	59	27	31	96	187	78	90
AC-FT	9110	2530	2410	2340	2170	4670	2730	3700	8360	14650	10980	6970

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2000, BY WATER YEAR (WY)

MEAN	91.8	81.7	74.0	68.1	61.3	55.5	42.9	76.1	223	371	199	123
MAX	167	178	118	148	92.0	124	108	134	558	712	277	183
(WY)	1977	1986	1980	1980	1979	1979	1979	1969	1974	1975	1997	1971
MIN	33.4	31.2	28.4	25.7	28.9	21.7	3.57	16.2	76.5	158	103	38.5
(WY)	1989	1975	1979	1979	1985	1987	1967	1978	1998	1985	1988	1988

ADJUSTED FOR CHANGE IN CONTENTS IN MYSTIC LAKE

MEAN †	33.0	27.7	26.7	21.8	17.4	7.2	45.9	153	362	271	141	55.6
CFSM †	0.63	0.53	0.51	0.42	0.33	0.14	0.88	2.94	6.95	5.20	2.71	1.07
IN †	0.73	0.59	0.59	0.48	0.36	0.16	0.98	3.38	7.76	6.00	3.11	1.19
AC-FT†	2030	1650	1640	1340	1000	440	2730	9400	21570	16660	3690	3310

OBSERVED

CAL YR 1999	TOTAL	42064	MEAN	115	MAX	494	MIN	21	AC-FT	83430
WTR YR 2000	TOTAL	35606	MEAN	97.6	MAX	323	MIN	27	AC-FT	70620

ADJUSTED

CAL YR 1999	TOTAL	41850	MEAN	115	CFSM	2.21	IN	29.95	AC-FT	83010
WTR YR 2000	TOTAL	35013	MEAN	95.7	CFSM	1.84	IN	25.00	AC-FT	69450

†--Adjusted for change in contents in Mystic Lake.

YELLOWSTONE RIVER BASIN

06205000 STILLWATER RIVER NEAR ABSAROKEE, MT

LOCATION.--Lat 45°33'04", long 109°23'12", in NE$^1/_4$NE$^1/_4$NW$^1/_4$ sec.28, T.3 S., R.19 E., Stillwater County, Hydrologic Unit 10070005, on right bank 3 mi downstream from Rosebud Creek, 3.5 mi northeast of Absarokee, 9 mi southwest of Columbus, and at river mile 9.4.
DRAINAGE AREA.--975 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1910 to September 1914 (no winter records), March 1935 to September 1995, October 1995 to current year (seasonal records only).
REVISED RECORDS.--WSP 1309: 1911(M). WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 3,873.8 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1914, nonrecording gage, and Mar. 26, 1935, to Sept. 30, 1942, nonrecording gage, at bridge 2 mi upstream at different datums.
REMARKS.--Water-discharge records good. Flow partly regulated by Mystic Lake (station number 06204000). Diversions for irrigation of about 24,300 acres, of which 400 acres lies downstream from station.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				248	567	2220	2120	702	425			
2				270	675	1980	2300	681	419			
3				251	839	2270	2230	652	415			
4				254	1030	2620	2100	656	413			
5				267	1070	2960	1890	682	408			
6				274	960	3160	1680	672	404			
7				266	874	3520	1580	637	409			
8				248	768	3660	1560	585	400			
9				242	690	3380	1600	542	347			
10				241	675	2950	1640	519	330			
11				243	613	2340	1610	516	337			
12				254	553	2150	1500	498	334			
13				278	505	2520	1450	496	315			
14				319	471	2080	1400	467	313			
15				322	448	2030	1360	471	314			
16				306	452	2370	1310	453	304			
17				302	1690	1910	1310	434	306			
18				320	1430	1600	1250	432	307			
19				355	1130	1920	1270	436	326			
20				319	1160	2300	1270	421	356			
21				335	1290	1850	1200	422	371			
22				388	1520	1800	1080	401	459			
23				456	2100	2120	1020	399	506			
24				504	2580	2490	959	395	488			
25				444	2500	2950	917	407	510			
26				405	2700	2780	858	409	517			
27				385	2510	2360	809	392	481			
28				400	2820	2130	788	375	456			
29				555	4210	2050	760	423	451			
30				607	3170	2050	745	423	479			
31				---	2620	---	727	426	---			
TOTAL				10058	44620	72520	42293	15424	11900			
MEAN				335	1439	2417	1364	498	397			
MAX				607	4210	3660	2300	702	517			
MIN				241	448	1600	727	375	304			
AC-FT				19950	88500	143800	83890	30590	23600			

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1995 AND SEASONS 1996-2000*

MEAN	279	267	288	413	1511	3489	2364	887	616	516	405	321
MAX	413	449	565	1185	2879	5776	6368	1639	1099	852	574	430
(WY)	1942	1972	1979	1943	1976	1957	1957	1997	1941	1942	1984	1962
MIN	116	103	162	144	661	1565	626	498	275	270	227	184
(WY)	1937	1936	1936	1961	1960	1939	1936	1988	1939	1937	1936	1937

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1996 - 2000		WATER YEARS 1936 - 1995*	
ANNUAL MEAN					947	
HIGHEST ANNUAL MEAN					1468	1975
LOWEST ANNUAL MEAN					507	1936
HIGHEST DAILY MEAN	4210	May 29	8260	Jun 11 1997	10900	Jun 18 1974
LOWEST DAILY MEAN	241	Apr 9	140	Apr 19 1999	58	Apr 2 1936
ANNUAL SEVEN-DAY MINIMUM					72	Mar 29 1936
INSTANTANEOUS PEAK FLOW	4700	May 29	8780	Jun 11 1997	12000	Jun 15 1967
INSTANTANEOUS PEAK STAGE	4.62	May 29	6.17	Jun 11 1997	7.17	Jun 15 1967
INSTANTANEOUS LOW FLOW	a235	Apr 9			b58	Apr 2 1936
ANNUAL RUNOFF (AC-FT)					686100	
10 PERCENT EXCEEDS					2620	
50 PERCENT EXCEEDS					462	
90 PERCENT EXCEEDS					235	

*--During period of operation (1911-12, 1936 to current year. Seasonal records beginning water year 1996).
a--Gage height, 0.58 ft.
b--Observed.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965, 1981, May 1999 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
09...	0845	338	8.4	181	5.5	5.0	.001
MAR 2000							
30...	0850	278	8.6	126	6.5	4.0	<.001
MAY							
30...	1030	3220	8.6	44	15.0	6.0	<.001
JUL							
11...	0945	1630	8.6	68	18.5	13.5	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
09...	.098	.11	<.001	E.007	2	1.8	85
MAR 2000							
30...	.081	.13	.007	E.005	2	1.5	88
MAY							
30...	.103	.23	.001	.023	14	122	87
JUL							
11...	.044	.24	.007	.026	12	53	82

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999											
09...	0845	75	20	6.1	1.0	.2	5.0	74	.8	.1	8.2
MAR 2000											
30...	0850	--	--	--	--	--	--	--	--	--	--
MAY											
30...	1030	23	6.2	1.8	.6	.1	1.4	24	E.2	<.1	4.9

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
09...	11	97	.13	88	--	--	--	--	--	--	--
MAR 2000											
30...	--	--	--	--	<3	<.1	E.6	<1	<1	<1	<1
MAY											
30...	3.0	33	.04	285	<3	<.1	1	3	<1	<1	4

E--Estimated.

06205450 CLARKS FORK YELLOWSTONE RIVER AT MONTANA-WYOMING STATE LINE, NEAR COOKE CITY, MT

LOCATION.--Lat 44°57'28", long 109°48'21", Park County, WY, Hydrologic Unit 10070006, Shoshone National Forest, at bridge on U.S. Highway 12, 300 ft upstream from Pilot Creek, 0.9 mi downstream from Rock Creek, 1.8 mi northwest of Crazy Creek Campground, and 7.5 mi southeast of Cooke City, MT.

PERIOD OF RECORD.--August 1975 to October 1977, November 1990 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
OCT 27...	0825	10	597	88	9.6	7.9	129	3.0	1.5	65
JAN 27...	0915	14	595	83	9.5	7.5	109	-17.0	0.0	54
JUN 01...	0830	1050	595	118	12.6	7.3	40	7.5	2.5	19
AUG 08...	1345	79	573	138	10.2	8.1	57	26.5	16.0	26

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT 27...	21	3.2	.5	.1	1.7	65	.4	<.1	6.1	5.5
JAN 27...	17	2.6	.3	.1	1.3	53	.4	<.1	5.5	4.2
JUN 01...	5.6	1.1	.3	.1	.8	20	E.3	<.1	4.1	2.8
AUG 08...	8.2	1.4	.5	.1	1.1	28	<.3	<.1	3.0	2.9

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
OCT 27...	77	.10	2.08	<.02	<.01	<.05	<.01	4	<1	<2
JAN 27...	64	.09	2.42	<.02	<.01	.08	<.01	19	<1	<2
JUN 01...	E27	E.04	E77.03	<.02	<.01	<.05	<.01	31	<1	<2
AUG 08...	E34	E.05	E7.32	<.02	<.01	<.05	<.01	10	<1	<2

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT 27...	22	<1	E11	<1	<.8	<1	<1	<10	<1	<4
JAN 27...	17	<1	<16	<1	<.8	<1	<1	<10	<1	<4
JUN 01...	9	<1	<16	<1	<.8	<1	3	10	<1	<4
AUG 08...	11	<1	E8	<1	<.8	<1	<1	<10	<1	E3

E--Estimated.

06205450 CLARKS FORK YELLOWSTONE RIVER AT MONTANA-WYOMING STATE LINE, NEAR COOKE CITY, MT

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	URANIUM NATURAL DISSOLVED (UG/L AS u) (01085)	VANADIUM, DISSOLVED (UG/L AS V) (01090)	ZINC, DISSOLVED (UG/L AS ZN) (22703)
OCT										
27...	2	<.2	<1	<1	<2	<1	58	<1	1	<10
JAN										
27...	1	<.2	<1	<1	<2	<1	47	<1	5	<10
JUN										
01...	2	<.2	<1	<1	<2	<1	23	<1	3	<10
AUG										
08...	<1	<.2	<1	<1	<2	<1	28	<1	6	<10

06207500 CLARKS FORK YELLOWSTONE RIVER NEAR BELFRY, MT

LOCATION.--Lat 45°00'37", long 109°03'53", in $NW^1/_4SW^1/_4NW^1/_4$ sec.32, T.9 S., R.22 E., Carbon County, Hydrologic Unit 10070006, on left bank 0.2 mi upstream from county road bridge and Big Sand Coulee, 0.8 mi north of Wyoming-Montana State line, 9.5 mi southwest of Belfry, and at river mile 71.2.

DRAINAGE AREA.--1,154 mi^2.

PERIOD OF RECORD.--July 1921 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as Clarks Fork at Chance prior to October 1956 and as Clarks Fork Yellowstone River at Chance October 1956 to September 1968.

REVISED RECORDS.--WSP 1309: 1922 (M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,986.24 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Nov. 15, 1934, nonrecording gage, and Nov. 15, 1934, to July 26, 1951, water-stage recorder at bridge 0.4 mi downstream of different datum. July 27, 1951 to Sept. 30, 1953, water-stage recorder at present site at datum 0.98 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 11,100 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	184	156	327	292	252	246	254	1090	4120	2550	472	150
2	185	152	328	274	289	243	263	1530	3670	2650	451	145
3	185	144	321	251	e280	242	263	1830	4040	2580	439	142
4	177	150	e290	229	249	237	246	2240	4490	2370	427	140
5	175	159	e240	275	253	243	291	2240	4820	2020	490	131
6	178	151	e240	266	266	254	374	2040	5100	1740	508	109
7	178	152	e230	254	262	268	347	1640	5410	1610	452	104
8	179	147	e230	229	270	279	294	1370	5560	1610	408	104
9	173	163	e240	250	272	260	294	1180	4990	1600	370	98
10	169	206	e260	280	e230	258	330	1110	4270	1600	343	93
11	167	202	293	e260	e240	260	314	961	3490	1520	317	95
12	164	203	291	e250	254	252	375	805	3190	1430	290	98
13	164	200	e290	260	246	241	443	671	3550	1370	271	92
14	161	197	e270	294	256	247	590	582	3040	1290	253	87
15	163	202	265	327	265	244	522	550	2990	1210	240	86
16	174	199	313	314	258	228	449	599	3420	1160	231	81
17	166	211	330	317	259	234	458	1380	2850	1130	218	67
18	162	215	318	299	244	246	474	1490	2330	1140	207	72
19	164	218	e290	295	233	233	478	1470	2550	1200	205	71
20	151	204	294	293	262	242	450	1770	3080	1070	202	73
21	150	215	312	300	278	216	534	2040	2550	966	187	74
22	148	195	320	290	275	231	788	2600	2380	872	173	85
23	150	176	322	281	268	242	911	3580	2590	802	164	110
24	146	166	314	261	264	255	834	4070	2980	748	156	118
25	142	255	312	273	270	258	689	4700	3320	707	150	121
26	140	320	300	280	249	252	578	4830	3180	665	135	137
27	144	340	300	280	247	270	516	4480	2910	611	136	120
28	140	329	305	e240	256	283	695	4810	2570	567	148	111
29	138	322	299	e220	251	311	1200	5970	2450	532	140	108
30	141	314	290	e200	---	286	1060	5410	2440	513	135	106
31	143	---	285	e210	---	266	---	4820	---	482	142	---
TOTAL	5001	6263	9019	8344	7498	7827	15314	73858	104330	40315	8460	3128
MEAN	161	209	291	269	259	252	510	2383	3478	1300	273	104
MAX	185	340	330	327	289	311	1200	5970	5560	2650	508	150
MIN	138	144	230	200	230	216	246	550	2330	482	135	67
AC-FT	9920	12420	17890	16550	14870	15520	30380	146500	206900	79960	16780	6200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2000, BY WATER YEAR (WY)

MEAN	284	297	264	232	223	222	428	2039	4117	2217	626	320
MAX	725	648	379	359	329	364	1167	5704	7225	5744	1453	834
(WY)	1931	1928	1951	1997	1963	1972	1943	1928	1997	1975	1951	1941
MIN	45.5	115	110	110	100	96.3	110	839	1607	349	66.5	50.1
(WY)	1989	1989	1922	1922	1922	1922	1961	1968	1987	1988	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1921 - 2000	
ANNUAL TOTAL	368339		289357			
ANNUAL MEAN	1009		791		940	
HIGHEST ANNUAL MEAN					1485	1997
LOWEST ANNUAL MEAN					547	1977
HIGHEST DAILY MEAN	7640	Jun 22	5970	May 29	12300	Jun 9 1981
LOWEST DAILY MEAN	138	Oct 29	67	Sep 17	33	Apr 26 1961
ANNUAL SEVEN-DAY MINIMUM	141	Oct 25	75	Sep 16	37	Oct 8 1988
INSTANTANEOUS PEAK FLOW			6550	May 29	14800	Jun 9 1981
INSTANTANEOUS PEAK STAGE			6.62	May 29	9.97	Jun 9 1981
INSTANTANEOUS LOW FLOW			a65	Sep 16	b32	Apr 26 1961
ANNUAL RUNOFF (AC-FT)	730600		573900		681300	
10 PERCENT EXCEEDS	3380		2560		2890	
50 PERCENT EXCEEDS	290		272		302	
90 PERCENT EXCEEDS	175		142		170	

a--Also Sept. 17, 19.
b--Result of discharge measurement.
e--Estimated.

YELLOWSTONE RIVER BASIN

06208500 CLARKS FORK YELLOWSTONE RIVER AT EDGAR, MT

(National water-quality assessment program)

LOCATION.--Lat 45°27'58", long 108°50'35", in $SE^1/_4SE^1/_4SE^1/_4$ sec.23, T.4 S., R.23 E., Carbon County, Hydrologic Unit 10070006, on right bank 400 ft downstream from county bridge, 0.5 mi east of Edgar, 6 mi upstream from Rock Creek, and at river mile 22.1.
DRAINAGE AREA.--2,032 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1921 to September 1969, October 1986 to current year.
REVISED RECORDS.--WSP 1509: 1924, 1932(M). WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 3,460 ft above sea level, from topographic map. Prior to Aug. 31, 1953, nonrecording gage at same site and datum.
REMARKS.--Water-discharge records good except those for the estimated daily discharges, which are poor. Diversions for irrigation of about 41,500 acres, of which about 840 acres lies downstream from the station. In addition, about 6,300 acres of land upstream from the station are irrigated by diversions from the adjoining Rock Creek basin. U.S.Geological Survey satellite telemeter at station. **Figures of discharge given herein have the flow of White Horse Canal subtracted.**

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	466	449	512	e450	e390	353	346	1040	4310	2260	412	185
2	493	462	516	e440	e380	350	350	1250	3640	2420	411	195
3	528	455	512	e450	e360	345	344	1700	3550	2430	384	199
4	516	442	516	e460	e380	342	339	2070	3980	2290	397	202
5	479	468	492	e460	e400	340	333	2230	4290	2060	473	198
6	465	479	438	e460	405	350	395	2080	4590	1670	601	193
7	464	460	487	e460	407	359	484	1760	4860	1370	596	201
8	467	463	511	e460	409	394	422	1480	5150	1290	480	196
9	466	456	471	e460	418	382	376	1200	4890	1270	378	185
10	481	457	e460	e450	e370	359	385	1070	4370	1310	330	186
11	484	462	e470	e440	e340	362	409	934	3610	1260	300	204
12	461	456	e470	e400	e330	360	405	793	3130	1180	273	197
13	446	454	e440	e440	e330	349	487	651	3250	1080	258	193
14	449	440	e420	e460	e340	339	571	544	3180	1020	239	196
15	445	449	e430	e470	e330	341	742	460	2720	962	226	190
16	472	445	445	e480	e320	337	609	366	3360	936	198	174
17	496	453	501	e460	e320	324	565	975	3160	916	174	171
18	502	462	497	e450	e320	329	582	2280	2620	934	160	179
19	498	450	482	e450	e330	334	608	1550	2420	1010	162	181
20	501	461	492	e440	342	327	584	1800	3120	1060	158	208
21	484	441	506	e430	360	328	558	2080	2900	960	164	267
22	476	450	487	e420	383	310	692	2420	2480	871	164	354
23	462	430	492	e410	375	322	973	3380	2500	758	155	460
24	466	415	435	e400	370	331	1030	3950	2790	676	151	506
25	452	410	476	e410	379	340	839	4540	3100	606	152	495
26	445	491	441	e420	367	340	735	5050	3170	546	147	473
27	433	526	461	e400	346	338	628	4950	2900	517	151	488
28	450	531	458	e380	357	356	559	4620	2590	492	158	449
29	453	525	466	e360	359	382	943	5860	2330	485	170	440
30	439	517	466	e370	---	398	1320	5770	2230	462	172	446
31	444	---	e450	e380	---	368	---	4960	---	445	184	---
TOTAL	14583	13859	14700	13420	10517	10789	17613	73813	101190	35546	8378	8211
MEAN	470	462	474	433	363	348	587	2381	3373	1147	270	274
MAX	528	531	516	480	418	398	1320	5860	5150	2430	601	506
MIN	433	410	420	360	320	310	333	366	2230	445	147	171
AC-FT	28930	27490	29160	26620	20860	21400	34940	146400	200700	70510	16620	16290

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2000, BY WATER YEAR (WY)*

MEAN	536	502	410	352	351	367	563	2117	4102	2064	630	485
MAX	1010	777	593	512	584	554	1398	5578	7256	4771	1541	1395
(WY)	1942	1928	1996	1997	1963	1943	1943	1928	1996	1943	1951	1941
MIN	298	310	217	200	180	220	123	757	1768	290	49.5	156
(WY)	1956	1936	1937	1922	1922	1924	1961	1968	1987	1988	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1921 - 2000*	
ANNUAL TOTAL	414856		322619			
ANNUAL MEAN	1137		881		1041	
HIGHEST ANNUAL MEAN					1623	1997
LOWEST ANNUAL MEAN					668	1988
HIGHEST DAILY MEAN	7880	Jun 21	5860	May 29	10600	Jun 2 1936
LOWEST DAILY MEAN	300	Jan 25	147	Aug 26	37	May 11 1961
ANNUAL SEVEN-DAY MINIMUM	322	Mar 13	154	Aug 22	43	Apr 18 1961
INSTANTANEOUS PEAK FLOW			6430	May 29	11100	Jun 12 1997
INSTANTANEOUS PEAK STAGE			7.30	May 29	9.30	Jun 12 1997
INSTANTANEOUS LOW FLOW					36	Apr 22 1961
ANNUAL RUNOFF (AC-FT)	822900		639900		754300	
10 PERCENT EXCEEDS	3280		2440		2870	
50 PERCENT EXCEEDS	472		460		471	
90 PERCENT EXCEEDS	345		221		275	

*--During period of operation (water years 1921-69, 1987 to current year).
e--Estimated.

YELLOWSTONE RIVER BASIN

06208500 CLARKS FORK YELLOWSTONE RIVER AT EDGAR, MT--Continued

(National water-quality assessment program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to 1965, January 1999 to current year.
PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: July 1972 to June 1973.
REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District Office. Samples collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 4,180 mg/L Apr. 28, 1973; minimum daily mean, 30 mg/L Nov. 1, 1972.
SEDIMENT LOAD: Maximum daily, 30,100 tons May 20, 1973; minimum daily, 23 tons Dec. 4, 1972.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
OCT 1999												
04...	1330	532	--	8.3	675	23.0	9.0	--	--	13.5	--	270
NOV												
03...	1415	455	670	8.1	682	19.0	5.0	--	--	12.9	116	300
DEC												
15...	0915	471	672	8.2	683	0.0	0.0	--	--	13.2	103	290
JAN 2000												
19...	1000	487	678	7.8	636	-3.0	1.0	--	--	14.0	111	270
FEB												
09...	1430	410	666	8.2	685	16.0	6.5	--	--	12.2	114	300
MAR												
14...	0915	354	666	8.2	716	8.0	4.5	--	--	12.3	109	290
APR												
12...	1100	385	672	8.1	570	21.0	10.5	--	--	9.8	100	240
MAY												
02...	1200	1050	665	8.3	281	22.0	13.0	--	--	9.6	105	110
18...	1030	2370	676	7.9	412	15.0	9.5	--	--	9.9	98	77
26...	1100	5220	666	7.8	117	13.0	9.5	--	--	9.8	98	47
JUN												
23...	0930	2330	670	8.2	213	19.0	15.0	K8	--	8.9	101	81
JUL												
10...	1030	1310	690	8.4	292	22.0	18.0	310	320	8.7	102	110
AUG												
14...	0900	262	666	8.4	771	22.0	19.0	130	--	10.8	133	280
SEP												
26...	1315	492	675	7.80	737	21.0	11.0	230	K170	9.80	101	300

DATE	TUR-BID-ITY (NTU) (00076)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1999											
04...	--	70	24	2.3	1	36	--	--	--	211	3.0
NOV											
03...	--	79	25	2.3	.9	35	234	5	200	206	2.4
DEC											
15...	--	78	23	1.9	.8	30	207	2	174	196	2.3
JAN 2000											
19...	--	72	22	1.6	.7	28	206	0	169	165	2.0
FEB											
09...	19	81	24	2.0	.8	31	215	0	177	185	3.1
MAR											
14...	100	77	23	2.0	.9	34	223	0	183	185	3.6
APR											
12...	21	64	19	1.7	.7	24	193	0	158	157	1.9
MAY											
02...	--	30	8.3	.9	.5	11	100	0	82	82	.8
18...	--	22	5.5	3.6	2	49	109	0	90	90	3.1
26...	--	14	3.2	.5	.3	4.8	56	0	46	47	.5
JUN											
23...	480	22	6.3	.8	.5	9.5	84	0	69	70	.7
JUL											
10...	21	29	9.1	1.2	.6	14	111	0	91	97	1.0
AUG											
14...	30	68	26	2.7	1	47	248	4	210	215	3.2
SEP											
26...	48	78	25	2.9	1	43	275	0	225	224	4.3

K--Results based on non-ideal colony count.

06208500 CLARKS FORK YELLOWSTONE RIVER AT EDGAR, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
OCT 1999											
04...	.3	8.8	160	423	432	.58	608	<.01	.77	<.02	.1
NOV											
03...	.3	9.0	170	434	448	.59	533	<.01	.73	<.02	.1
DEC											
15...	.3	11	170	448	423	.61	570	<.01	.80	<.02	E.08
JAN 2000											
19...	.3	9.6	160	420	397	.57	552	<.01	.76	<.02	.1
FEB											
09...	.3	9.7	180	459	441	.62	508	<.01	.68	.02	E.08
MAR											
14...	.3	10	190	482	457	.66	461	<.01	.74	<.02	.1
APR											
12...	.3	8.0	140	380	358	.52	395	<.01	.33	<.02	.1
MAY											
02...	.2	11	50	170	162	.23	482	<.01	.21	.02	.1
18...	.3	8.1	98	253	245	.34	1620	.01	.44	.06	.3
26...	<.1	8.4	11	80	70	.11	1130	<.01	.09	.02	.2
JUN											
23...	.1	7.9	33	133	122	.18	837	<.01	.18	<.02	E.09
JUL											
10...	.1	4.8	51	178	165	.24	630	<.01	.07	<.02	.1
AUG											
14...	.4	6.3	200	511	480	.69	361	.01	.58	<.02	.3
SEP											
26...	.3	8.5	180	497	483	.68	660	<.01	.88	<.02	.2

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT 1999										
04...	.2	.01	E.004	.018	<10	4	1.9	.3	40	57
NOV										
03...	.2	<.01	<.006	.011	<10	8	1.9	.6	30	37
DEC										
15...	.1	<.01	E.003	.011	<10	9	1.3	.3	15	19
JAN 2000										
19...	.2	<.01	E.005	.04	<10	11	1.3	.8	83	109
FEB										
09...	.3	<.01	E.005	.038	<10	20	1.5	.8	70	77
MAR										
14...	.4	<.01	<.006	.094	<10	15	1.6	1.6	111	106
APR										
12...	.3	<.01	E.003	.048	<10	15	2.3	.6	45	47
MAY										
02...	.7	.02	.025	.23	E9	4	3.6	1.8	203	576
18...	8.2	<.01	.023	5.7	E8	5	3.2	4.2	8830	56500
26...	.7	.03	.035	.69	15	3	3.2	4.6	735	10400
JUN										
23...	.2	.02	.020	.15	<10	4	1.8	.9	127	799
JUL										
10...	.3	<.01	.008	.083	<10	4	1.9	.6	64	226
AUG										
14...	.4	<.01	.013	.059	<10	18	3.0	.5	48	34
SEP										
26...	.5	<.01	E.003	.11	<10	12	2.3	1.2	--	--

E--Estimated.

YELLOWSTONE RIVER BASIN

06208500 CLARKS FORK YELLOWSTONE RIVER AT EDGAR, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)
NOV 1999												
03...	1415	<1	<1	<2	--	50	<1	<1	--	<.8	<1	1
JUL 2000												
10...	1030	--	--	--	<3	--	--	--	<.1	--	--	--
AUG												
14...	0900	--	--	--	<3	--	--	--	<.1	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
NOV 1999												
03...	--	<1	--	<.2	1	<1	--	E2	<1	5	<1	--
JUL 2000												
10...	2	--	<1	--	--	--	1	--	--	--	--	5
AUG												
14...	4	--	<1	--	--	--	1	--	--	--	--	6

DATE	TIME	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DISSOLVED (UG/L) (34253)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
OCT 1999										
04...	1330	<.003	<.002	<.002	<.002	.005	<.002	<.002	<.003	<.003
NOV										
03...	1415	<.003	<.002	<.002	<.002	E.003	<.002	<.002	<.003	<.003
DEC										
15...	0915	<.003	<.002	<.002	<.002	E.003	<.002	<.002	<.003	<.003

DATE	CHLORPYRIFOS DISSOLVED (UG/L) (38933)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DIAZINON, DISSOLVED (UG/L) (39572)	DIELDRIN DISSOLVED (UG/L) (39381)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
OCT 1999										
04...	<.004	<.004	<.002	E.005	119	<.002	<.001	<.017	<.002	<.004
NOV										
03...	<.004	<.004	<.002	<.002	110	<.002	<.001	<.017	<.002	<.004
DEC										
15...	<.004	<.004	<.002	<.002	110	<.002	<.001	<.017	<.002	<.004

DATE	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DISSOLVED (UG/L) (39341)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALATHION, DISSOLVED (UG/L) (39532)	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLACHLOR WATER DISSOLV (UG/L) (39415)	METRIBUZIN SENCOR WATER DISSOLV (UG/L) (82630)
OCT 1999										
04...	<.003	<.003	119	<.004	<.002	<.005	<.001	<.006	<.002	<.004
NOV										
03...	<.003	<.003	108	<.004	<.002	<.005	<.001	<.006	<.002	<.004
DEC										
15...	<.003	<.003	102	<.004	<.002	<.005	<.001	<.006	<.002	<.004

E--Estimated.

06208500 CLARKS FORK YELLOWSTONE RIVER AT EDGAR, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARATHION, DISSOLVED (UG/L) (39542)	PEBULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PERMETHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PROMETON, WATER, DISS, REC (UG/L) (04037)	PRONAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT 1999										
04...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
NOV										
03...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
DEC										
15...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003

DATE	PROPACHLOR, WATER, DISS, REC (UG/L) (04024)	PROPANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PROPARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SIMAZINE, WATER, DISS, REC (UG/L) (04035)	TEBUTHIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TERBACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TERBUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIOBENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIALLATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRIFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT 1999										
04...	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.002	<.002
NOV										
03...	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.001	E.001
DEC										
15...	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.001	<.002

E--Estimated.

YELLOWSTONE RIVER BASIN

06209500 ROCK CREEK NEAR RED LODGE, MT

LOCATION (REVISED).--Lat 45°05'11", long 109°19'46", in NW$^1/_4$NE$^1/_4$SW$^1/_4$ sec.36, T.8 S., R.19 E., Carbon County, Hydrologic Unit 10070006, on left bank 40 ft downstream from county bridge, 6.7 mi south of Red Lodge, and at river mile 49.1.

DRAINAGE AREA.--105 mi^2, revised.

PERIOD OF RECORD.--April to December 1932, May 1934 to September 1982, May 1985 to September 1986, January to September 2000. Monthly discharge only for May 1934, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area. WDR MT-00-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,400 ft above sea level, from topographic map. Prior to October 1986, water-stage recorder at datum 6,099.42 ft, levels by U.S. Army Corps of Engineers, at previous site 3.1 mi downstream. Streamflows are equivalent.

REMARKS.--Records fair except those for the estimated daily discharges, which are poor. Flow partly regulated by Glacier Lake. No diversions upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				e30	e22	e20	24	55	372	410	305	168
2				e25	e20	e22	24	75	346	419	300	172
3				e25	e18	e22	24	103	421	410	276	159
4				e25	e20	e22	26	126	475	399	280	151
5				e25	e20	e20	28	119	513	346	298	147
6				e30	e20	e20	26	103	536	342	277	145
7				e25	e22	e20	25	89	556	343	260	139
8				e25	e22	e20	25	78	570	347	250	130
9				e25	e20	e18	26	72	542	358	241	125
10				e25	e18	e20	26	68	455	359	234	122
11				e20	e18	e20	27	64	385	336	232	125
12				e15	e18	e20	29	60	383	343	228	115
13				e20	e18	e20	31	57	377	335	217	110
14				e20	e18	e20	32	55	325	327	210	106
15				e20	e18	e20	29	55	474	324	205	102
16				e20	e18	e22	29	61	425	323	199	99
17				e20	e18	24	30	83	328	318	196	96
18				e20	e18	24	31	77	289	316	192	93
19				e20	e20	24	30	87	359	319	187	96
20				e20	e22	25	32	99	343	299	187	95
21				e20	e22	31	34	122	289	296	201	92
22				e20	e20	26	38	231	316	276	195	89
23				e20	e20	25	40	398	374	269	190	88
24				e20	e20	24	38	439	445	267	188	87
25				e25	e18	24	36	484	468	255	187	85
26				e25	e20	25	36	469	420	245	188	81
27				e25	e20	25	36	413	367	237	190	79
28				e18	e20	25	43	659	332	236	184	76
29				e18	e20	24	59	689	356	234	177	75
30				e20	---	24	51	527	373	230	176	73
31												
TOTAL				686	568	700	965	6464	12214	9742	6824	3320
MEAN				22.1	19.6	22.6	32.2	209	407	314	220	111
MAX				30	22	31	59	689	570	419	305	172
MIN				15	18	18	24	55	289	224	174	73
AC-FT				1360	1130	1390	1910	12820	24230	19320	13540	6590

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2000, BY WATER YEAR (WY)*

MEAN	83.4	55.9	42.1	34.5	31.2	29.9	40.6	222	603	500	261	142
MAX	124	77.7	56.1	45.1	42.4	39.7	99.2	460	1129	1088	427	219
(WY)	1968	1962	1962	1942	1953	1972	1943	1958	1957	1975	1951	1971
MIN	50.1	39.7	26.6	22.1	19.6	22.6	24.4	87.6	273	224	158	88.6
(WY)	1956	1961	1955	2000	2000	2000	1961	1953	1939	1977	1961	1960

SUMMARY STATISTICS	FOR PARTIAL WATER YEAR 2000		WATER YEARS 1932 - 2000*	
ANNUAL MEAN			174	
HIGHEST ANNUAL MEAN			251	1943
LOWEST ANNUAL MEAN			105	1977
HIGHEST DAILY MEAN	689	May 29	2370	Jun 5 1957
LOWEST DAILY MEAN	15	Jan 12	14	Nov 29 1954
ANNUAL SEVEN-DAY MINIMUM			18	Feb 10 2000
INSTANTANEOUS PEAK FLOW	902	May 28	a3110	Jun 4 1957
INSTANTANEOUS PEAK STAGE	6.80	May 28	b4.80	Jun 16 1937
ANNUAL RUNOFF (AC-FT)			126200	
10 PERCENT EXCEEDS			490	
50 PERCENT EXCEEDS			66	
90 PERCENT EXCEEDS			30	

*--During period of operation (April 1932 to December 1932, May 1934 to September 1982, May 1985 to September 1986, January 2000 to current year).
a--Gage height, 4.78 ft, previous site and datum.
b--Previous site and datum.
e--Estimated.

06211000 RED LODGE CREEK ABOVE COONEY RESERVOIR, NEAR BOYD, MT

LOCATION.--Lat 45°26'16", long 109°15'11", in NE$^1/_4$SE$^1/_4$SE$^1/_4$ sec.33, T.4 S., R.20 E., Carbon County, Hydrologic Unit 10070006, on right bank 0.6 mi upstream from Cooney Reservoir, 9.5 mi west of Boyd, and at river mile 15.0.
DRAINAGE AREA.--143 mi^2.
PERIOD OF RECORD.--May 1937 to current year (no winter records most years).
REVISED RECORDS.--WSP 1729: Drainage area. WSP 2116: 1937(M), 1942(M), 1943(P), 1944(M), 1948(M), 1952(M), 1957(P), 1962(M), 1963(M).
GAGE.--Water-stage recorder. Datum of gage is 4,248.0 ft above sea level.
REMARKS.--Seasonal records good. Some return flow from lands irrigated by water diverted from Rock Creek and East Rosebud Creek basins. Diversions for irrigation of about 5,100 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				19	7.8	90	86	19	35	68		
2				25	7.4	69	109	20	37	77		
3				21	7.4	55	102	24	42	70		
4				24	7.5	50	98	28	44	68		
5				41	6.7	56	104	33	40	62		
6				35	10	54	103	29	39	45		
7				27	18	43	86	28	36	44		
8				24	28	44	83	26	36	42		
9				25	27	44	77	25	42	42		
10				24	27	47	79	25	47	41		
11				24	20	44	76	26	48	41		
12				24	17	44	67	25	46	56		
13				26	20	44	60	20	44	47		
14				29	22	50	49	20	38	53		
15				26	22	59	45	22	37	49		
16				24	23	64	44	19	38	44		
17				23	639	65	48	22	38	44		
18				24	315	58	47	26	40	41		
19				37	166	62	48	31	46	40		
20				31	126	72	47	26	59	39		
21				28	101	70	48	32	64	39		
22				21	99	64	44	31	81	40		
23				18	110	75	39	20	77	39		
24				20	97	73	39	20	69	41		
25				19	85	97	41	22	78	48		
26				16	87	109	40	23	90	48		
27				12	80	e100	36	27	79	44		
28				10	86	e95	27	27	69	42		
29				12	132	e90	20	28	64	41		
30				12	115	85	21	28	60	39		
31				---	115	---	20	30	---	42		
TOTAL				701	2623.8	1972	1833	782	1563	1476		
MEAN				23.4	84.6	65.7	59.1	25.2	52.1	47.6		
MAX				41	639	109	109	33	90	77		
MIN				10	6.7	43	20	19	35	39		
AC-FT				1390	5200	3910	3640	1550	3100	2930		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1937 - 2000, BY WATER YEAR (WY)*

MEAN	15.4	27.4	36.5	77.4	161	193	91.1	38.8	46.6	46.7	33.3	19.3
MAX	18.8	35.0	62.9	234	616	575	297	90.2	106	119	69.5	33.6
(WY)	1964	1962	1962	1973	1975	1967	1975	1993	1941	1942	1942	1958
MIN	12.1	18.9	17.4	12.7	10.8	15.3	4.90	4.71	4.20	17.5	16.5	14.5
(WY)	1963	1964	1964	1961	1985	1954	1949	1946	1949	1954	1955	1946

SUMMARY STATISTICS	FOR 2000 SEASON		WATER YEARS 1937 - 2000*	
ANNUAL MEAN			58.4	
HIGHEST ANNUAL MEAN			67.1	1963
LOWEST ANNUAL MEAN			49.8	1964
HIGHEST DAILY MEAN	639	May 17	2000	Jun 15 1967
LOWEST DAILY MEAN	6.7	May 5	.00	Aug 1 1949
ANNUAL SEVEN-DAY MINIMUM			.00	Aug 9 1949
INSTANTANEOUS PEAK FLOW	1060	May 17	b2260	Jun 15 1967
INSTANTANEOUS PEAK STAGE	5.51	May 17	7.00	Jun 15 1967
INSTANTANEOUS LOW FLOW	a5.3	May 4,5	c.00	Jul 31 1988
ANNUAL RUNOFF (AC-FT)			42340	
10 PERCENT EXCEEDS			197	
50 PERCENT EXCEEDS			53	
90 PERCENT EXCEEDS			19	

*--No winter record most years.
a--Gage height, 1.33 ft.
b--From rating curve extended above 1,700 ft^3/s on basis of contracted opening of peak flow.
c--Also many days in 1949.
e--Estimated.

06211500 WILLOW CREEK NEAR BOYD, MT

LOCATION.--Lat 45°25'20", long 109°13'47", in $SW^1/_4SW^1/_4SW^1/_4$ sec.2, T.5 S., R.20 E., Carbon County, Hydrologic Unit 10070006, on left bank 0.5 mi upstream from Cooney Reservoir, 8 mi west of Boyd, and at river mile 2.1.
DRAINAGE AREA.--53.3 mi^2.
PERIOD OF RECORD.--June 1937 to current year (no winter records except 1963-64).
REVISED RECORDS.--WSP 1729: Drainage area. WSP 2116: 1957, 1962. WDR MT-87-1: 1986.
GAGE.--Water-stage recorder. Elevation of gage is 4,260 ft above sea level, from topographic map. Prior to Apr. 23, 1948, at site 0.5 mi downstream at different datum.
REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 1,800 acres upstream from station. Some return flow from lands irrigated by water diverted from Rock Creek basin. 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, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				12	10	49	73	37	17	40		
2				14	e7.0	43	83	35	18	40		
3				14	e6.0	41	72	32	14	40		
4				14	e5.0	40	70	32	14	40		
5				19	e5.0	40	72	32	15	40		
6				20	4.8	36	69	33	18	39		
7				16	5.1	22	70	32	15	39		
8				14	6.5	20	68	31	14	38		
9				15	5.7	24	63	30	15	37		
10				16	4.0	31	58	26	16	36		
11				16	3.7	34	57	24	16	35		
12				17	4.0	29	58	23	15	36		
13				17	4.5	29	58	23	15	39		
14				15	4.1	29	57	25	14	40		
15				14	3.5	46	54	27	14	40		
16				12	2.9	63	52	28	15	39		
17				12	320	57	51	27	15	37		
18				13	182	58	51	28	16	36		
19				16	73	60	50	32	16	35		
20				15	59	70	51	29	20	34		
21				13	47	66	52	28	24	33		
22				13	42	63	50	23	31	32		
23				11	39	74	46	24	35	31		
24				10	37	77	48	18	38	30		
25				10	35	77	53	20	43	29		
26				8.8	48	83	54	16	50	28		
27				8.6	54	77	52	20	50	28		
28				8.4	52	79	48	20	44	28		
29				9.0	55	72	44	17	42	27		
30				12	54	69	41	12	41	27		
31				---	55	---	38	12	---	27		
TOTAL				404.8	1233.8	1558	1763	796	710	1080		
MEAN				13.5	39.8	51.9	56.9	25.7	23.7	34.8		
MAX				20	320	83	83	37	50	40		
MIN				8.4	2.9	20	38	12	14	27		
AC-FT				803	2450	3090	3500	1580	1410	2140		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)*

MEAN	8.00	12.1	15.3	34.5	49.2	56.3	56.2	40.8	37.8	30.4	22.0	17.0
MAX	8.27	17.2	22.5	88.2	215	170	123	75.1	64.3	50.0	31.6	26.6
(WY)	1963	1962	1962	1973	1975	1967	1978	1972	1965	1972	1974	1958
MIN	7.73	5.76	5.89	6.29	3.08	2.05	3.20	11.8	6.02	12.7	14.7	10.6
(WY)	1964	1964	1964	1961	1969	1961	1960	1961	1960	1940	1963	1963

SUMMARY STATISTICS	FOR 2000 SEASON		WATER YEARS 1938 - 2000*	
ANNUAL MEAN			24.8	
HIGHEST ANNUAL MEAN			25.4	1963
LOWEST ANNUAL MEAN			24.3	1964
HIGHEST DAILY MEAN	320	May 17	1150	Jun 15 1967
LOWEST DAILY MEAN	2.9	May 16	.00	May 29 1969
INSTANTANEOUS PEAK FLOW	630	May 17	a1720	Jun 15 1967
INSTANTANEOUS PEAK STAGE	6.33	May 17	b7.24	May 29 1942
INSTANTANEOUS LOW FLOW	2.7	May 16	.00	May 29 1969

*--Seasonal records except 1963 and 1964 water years.
a--Gage height, 7.08 ft, from rating curve extended above 400 ft^3/s on basis of slope-area measurement of peak flow.
b--Backwater from Cooney Reservoir, site and datum then in use.
e--Estimated.

YELLOWSTONE RIVER BASIN

06212500 RED LODGE CREEK BELOW COONEY RESERVOIR, NEAR BOYD, MT

LOCATION.--Lat 45°26'59", long 109°11'06", in NE$^1/_4$NW$^1/_4$NW$^1/_4$ sec.31, T.4 S., R.21 E., Carbon County, Hydrologic Unit 10070006, on right bank 250 ft upstream from Cottonwood Creek, 1.5 mi downstream from Cooney Dam, 6 mi west of Boyd, and at river mile 10.5.

DRAINAGE AREA.--210 mi^2.

PERIOD OF RECORD.--September 1937 to current year; seasonal records water years 1997-99.

REVISED RECORDS.--WSP 1309: 1942(M), 1944(M). WSP 2116: 1957(M).

GAGE.--Water-stage recorder. Datum of gage is 4,139.12 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which ar poor. Some return flow from lands irrigated by water diverted from Rock Creek and East Rosebud Creek basins. Flow completely regulated by Cooney Reservoir (station number 06212000). Diversions for irrigation of about 6,900 acres upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e74	84	43	20	18	14	15	15	249	227	87	204
2	e74	78	41	20	15	14	15	15	231	227	87	188
3	e73	77	32	19	e12	14	15	15	179	224	91	162
4	e73	77	32	19	e12	14	14	15	181	225	95	162
5	e73	77	32	19	13	14	15	15	173	169	95	162
6	67	76	32	19	13	14	15	15	122	92	95	160
7	72	75	32	19	13	14	15	16	87	92	96	160
8	72	75	32	19	13	14	15	16	47	93	112	155
9	72	75	32	19	13	15	15	16	45	94	119	142
10	71	75	32	19	13	14	15	16	45	93	132	133
11	71	74	43	e18	13	14	15	16	44	93	144	132
12	70	74	31	e18	13	14	15	16	43	94	160	132
13	71	73	31	19	13	14	15	16	43	103	160	128
14	70	73	35	19	13	14	15	16	52	106	162	114
15	70	72	29	19	13	15	15	18	65	106	169	107
16	69	72	28	19	13	15	15	28	66	115	169	102
17	70	72	28	19	13	14	15	215	58	128	186	102
18	67	72	28	19	13	15	16	364	44	134	192	102
19	64	72	31	19	13	15	15	182	43	121	211	102
20	64	71	28	19	13	15	15	159	43	122	211	103
21	64	71	28	19	13	15	15	158	43	121	209	103
22	64	71	28	19	13	15	15	96	91	120	208	104
23	64	71	28	19	13	15	15	95	176	109	208	95
24	64	55	28	19	13	15	15	86	177	90	206	76
25	64	44	28	19	14	15	15	60	178	99	221	76
26	64	44	28	19	13	15	13	50	176	100	234	61
27	64	44	29	18	14	15	14	39	201	129	229	48
28	63	44	29	18	14	15	14	40	222	130	218	48
29	63	44	29	18	14	15	15	41	222	130	216	48
30	64	43	29	18	---	15	15	39	222	116	214	39
31	63	---	29	18	---	15	---	70	---	87	215	---
TOTAL	2108	2025	965	584	386	451	446	1958	3568	3889	5151	3450
MEAN	68.0	67.5	31.1	18.8	13.3	14.5	14.9	63.2	119	125	166	115
MAX	74	84	43	20	18	15	16	364	249	227	234	204
MIN	63	43	28	18	12	14	13	15	43	87	87	39
AC-FT	4180	4020	1910	1160	766	895	885	3880	7080	7710	10220	6840

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)*

MEAN	80.8	66.2	37.6	28.5	29.1	43.4	83.3	182	230	173	139	113
MAX	234	212	121	94.6	139	231	253	801	685	383	220	197
(WY)	1943	1943	1972	1968	1962	1972	1973	1975	1957	1975	1991	1941
MIN	2.42	3.53	3.50	1.98	2.20	2.43	3.16	5.11	48.6	57.1	60.1	20.3
(WY)	1962	1961	1953	1964	1964	1964	1960	1961	1949	1954	1938	1961

SUMMARY STATISTICS	FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000*	
ANNUAL TOTAL	24981			
ANNUAL MEAN	68.3		101	
HIGHEST ANNUAL MEAN			226	1975
LOWEST ANNUAL MEAN			24.3	1961
HIGHEST DAILY MEAN	364	May 18	2800	Jun 17 1957
LOWEST DAILY MEAN	12	Feb 3	.00	Oct 7 1975
ANNUAL SEVEN-DAY MINIMUM	13	Feb 3	.51	Oct 25 1989
INSTANTANEOUS PEAK FLOW	495	May 17	3470	Jun 15 1967
INSTANTANEOUS PEAK STAGE	4.17	May 17	10.17	Jun 15 1967
INSTANTANEOUS LOW FLOW			a.00	Oct 6 1948
ANNUAL RUNOFF (AC-FT)	49550		73230	
10 PERCENT EXCEEDS	174		221	
50 PERCENT EXCEEDS	44		68	
90 PERCENT EXCEEDS	14		9.2	

*--During period of operation (water years 1938 to current year, seasonal record 1997-99).
a--Also occurred October 1975.
e--Estimated.

YELLOWSTONE RIVER BASIN

06214500 YELLOWSTONE RIVER AT BILLINGS, MT

(National water-quality assessment program)

LOCATION.--Lat 45°48'00", long 108°28'00", in $SE^1/_4SE^1/_4SE^1/_4$ sec.27, T.1 N., R.26 E., Yellowstone County, Hydrologic Unit 10070007, on right bank 0.3 mi downstream from bridge on U.S. Highway 87, 1 mi northeast of Billings, 10 mi upstream from Pryor Creek, and at river mile 360.3.
DRAINAGE AREA.--11,795 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1904 to December 1905 (gage heights only January to March, December 1905), August 1928 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as "near Billings" 1904-5.
REVISED RECORDS.--WDR MT 1968: 1967 (M). WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 3,080 ft above sea level, from topographic map. May 1904 to December 1905, nonrecording gage at bridge 0.3 ft upstream at different datum. Aug. 24, 1928, to June 30, 1932, nonrecording gage at bridge 0.3 mi upstream at datum 2.0 ft higher. July 1, 1932, to Oct. 12, 1937, water-stage recorder at old diversion dam 3.3 mi upstream at different datum. Oct. 13, 1937, to Jan. 9, 1963 and Dec. 2, 1967 to Sept. 12, 1990, water-stage recorder 0.3 mi upstream at datum 3,081.36 ft above sea level. Jan. 10, 1963 to Dec. 2, 1967, water-stage recorder at City of Billings Water Department intake, 2.1 mi upstream at datum 3,069.9 ft above sea level.
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 350,000 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3900	3300	3050	2540	e1700	2440	2330	8030	23000	12700	3840	2210
2	4030	3310	3020	2630	e1800	2400	2300	7170	19900	13300	3690	2290
3	4100	3300	3030	2500	e2000	2380	2270	8950	18800	13200	3460	2310
4	4010	3210	2890	2450	2540	2350	2230	10600	20900	12600	3340	2330
5	3900	3300	2720	2200	2250	2350	2150	12700	22700	11900	3330	2330
6	3850	3410	2550	2400	2480	2360	2220	12400	23800	10500	3480	2340
7	3820	3400	2650	2410	2530	2390	2540	11100	24900	9520	3650	2250
8	3770	3340	2660	2380	2470	2620	2630	9870	26400	8940	3410	2190
9	3710	3250	2600	2330	2480	2660	2480	8680	26200	8750	3130	2180
10	3670	3190	2390	2330	2530	2480	2360	7940	24100	8580	2950	2080
11	3670	3190	2430	2410	2370	2440	2420	7740	20900	8380	2830	2130
12	3720	3160	2680	2510	e2100	2430	2510	7190	18000	8000	2780	2180
13	3680	3120	2790	2340	e2100	2380	2570	6660	17600	7570	2750	2150
14	3720	3090	2670	2080	e2100	2340	3000	6060	19300	7210	2680	2020
15	3720	3060	2650	2440	e2200	2320	3480	5430	16600	6810	2500	1970
16	3680	3040	2690	2790	e2100	2300	3890	4980	18300	6490	2440	1920
17	3770	3030	2910	2810	e2200	2260	3740	5920	18100	6330	2320	1850
18	3770	3040	2940	2710	2260	2190	3640	11300	15400	6360	2240	1850
19	3770	3000	2690	2660	2110	2250	3760	10200	14100	6340	2140	1990
20	3760	3030	2630	2560	2110	2250	3750	9800	16400	6560	2240	2030
21	3640	2990	2820	2570	2230	2220	3700	10900	17500	6410	2210	2260
22	3550	2960	2900	e2500	2390	2170	4160	12600	15100	6080	2180	2840
23	3550	2870	2860	e2400	2380	2100	5300	15200	15300	5630	2120	3200
24	3510	2710	2790	2450	2420	2190	6490	18600	15900	5340	2100	3370
25	3470	2710	2760	2310	2590	2250	6750	20000	16900	4970	2100	3440
26	3460	2860	2650	2320	2450	2240	5900	21900	17400	4770	2090	3460
27	3400	3100	2550	2630	2320	2200	5060	23500	15600	4570	2130	3320
28	3400	3200	2630	2440	2290	2320	4690	21900	14400	4380	2060	3150
29	3450	3190	2650	2260	2410	2400	5290	26500	13500	4210	2100	3040
30	3380	3100	2610	e1800	---	2450	7950	29200	12900	4100	2190	2970
31	3420	---	2550	e1600	---	2450	---	25200	---	4000	2190	---
TOTAL	114250	93460	84410	74760	65910	72580	111560	398220	559900	234500	82670	73650
MEAN	3685	3115	2723	2412	2273	2341	3719	12850	18660	7565	2667	2455
MAX	4100	3410	3050	2810	2590	2660	7950	29200	26400	13300	3840	3460
MIN	3380	2710	2390	1600	1700	2100	2150	4980	12900	4000	2060	1850
AC-FT	226600	185400	167400	148300	130700	144000	221300	789900	1111000	465100	164000	146100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2000, BY WATER YEAR (WY)

MEAN	4056	3592	2821	2499	2681	3050	4176	12800	25580	13790	5260	4111
MAX	6803	5163	4451	3834	4382	5478	8799	24070	53910	37180	9776	7301
(WY)	1942	1984	1976	1984	1997	1979	1943	1997	1997	1975	1997	1968
MIN	2229	2283	1579	1363	1559	2016	1438	5635	9849	3410	1705	1837
(WY)	1989	1932	1933	1940	1932	1961	1961	1953	1934	1934	1934	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1929 - 2000	
ANNUAL TOTAL	2607890		1965870			
ANNUAL MEAN	7145		5371		7041	
HIGHEST ANNUAL MEAN					12100	1997
LOWEST ANNUAL MEAN					4027	1934
HIGHEST DAILY MEAN	40800	Jun 23	29200	May 30	80100	Jun 12 1997
LOWEST DAILY MEAN	2150	Jan 26	1600	Jan 31	450	Dec 12 1932
ANNUAL SEVEN-DAY MINIMUM	2380	Apr 13	1940	Jan 28	794	Dec 10 1932
INSTANTANEOUS PEAK FLOW			30800	May 30	82000	Jun 12 1997
INSTANTANEOUS PEAK STAGE			9.64	May 30	15.00	Jun 12 1997
INSTANTANEOUS LOW FLOW					430	Dec 12 1932
ANNUAL RUNOFF (AC-FT)	5173000		3899000		5101000	
10 PERCENT EXCEEDS	20100		14200		17900	
50 PERCENT EXCEEDS	3550		3000		3740	
90 PERCENT EXCEEDS	2530		2190		2200	

e--Estimated.

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

(National water-quality assessment program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963-93, January 1999 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: Water years 1977-81.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office. Samples collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION (water years 1977-81): Maximum daily mean, 4,260 mg/L, May 18, 1978; minimum daily mean, 1 mg/L, Oct. 27, 30, 1976, Jan. 11, 12, 1978.
SEDIMENT LOAD (water years 1977-81): Maximum daily, 493,000 tons, May 19, 1978; minimum daily, 11 tons, Jan. 12, 1978.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
OCT 1999												
08...	0900	3770	--	8.3	352	6.0	11.0	--	--	9.4	--	130
NOV												
01...	1230	3280	--	8.5	375	7.0	6.5	--	--	12.5	--	150
DEC												
14...	1430	2900	680	8.0	403	0.0	0.5	--	--	14.6	113	150
JAN 2000												
20...	1400	2700	681	8.0	392	2.0	.5	--	--	14.2	111	140
FEB												
07...	1430	2490	691	8.4	381	13.0	2.5	--	--	--	--	130
MAR												
13...	1315	2380	683	8.4	396	10.0	5.5	--	--	--	--	140
APR												
05...	1100	2130	680	7.6	388	11.0	11.5	--	--	12.1	124	140
MAY												
03...	1100	8610	679	7.9	194	20.0	13.5	--	--	9.5	102	72
19...	1200	10100	684	8.2	220	18.0	13.5	--	--	9.4	101	70
30...	0930	30500	682	7.9	108	12.0	9.5	--	--	10.4	102	39
JUN												
09...	1000	26300	671	8.2	110	24.0	14.0	--	--	9.6	106	39
23...	1300	15300	678	8.2	157	25.0	16.0	K57	--	8.7	100	54
JUL												
10...	1300	8640	680	8.4	191	24.0	22.0	K52	30	10.6	136	65
AUG												
14...	1230	2690	650	8.8	339	27.0	22.5	40	--	9.3	127	120
SEP												
26...	1000	3490	685	7.50	416	9.50	9.50	71	110	9.9	97	160

K--Results based on non-ideal colony count.

YELLOWSTONE RIVER BASIN

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TURBIDITY (NTU) (00076)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT 1999											
08...	--	32	11	2.7	.7	19	138	0	113	122	6.3
NOV											
01...	--	37	13	2.9	.8	23	148	0	121	130	7.1
DEC											
14...	--	39	12	3.1	.8	22	142	0	116	133	7.7
JAN 2000											
20...	--	36	12	3.0	.8	21	144	0	118	122	7.3
FEB											
07...	8.0	35	11	3.0	.7	20	--	--	--	119	7.2
MAR											
13...	7.0	35	12	3.4	.8	23	144	0	118	122	7.1
APR											
05...	6.0	35	12	3.3	.8	22	148	0	121	124	7.6
MAY											
03...	--	19	5.9	1.9	.5	10	82	0	67	68	3.2
19...	--	19	5.2	2.3	.8	15	89	0	73	76	3.9
30...	--	11	3.0	1.2	.3	4.4	52	0	42	42	1.5
JUN											
09...	73	11	2.9	1.0	.3	4.8	49	0	40	42	1.4
23...	18	14	4.5	1.5	.5	7.6	66	--	54	57	2.7
JUL											
10...	12	17	5.6	1.6	.5	10	85	1	70	72	3.9
AUG											
14...	6.0	29	11	2.8	.8	21	95	5	86	109	6.0
SEP											
26...	15	40	14	3.1	.8	24	170	0	139	142	6.5

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
OCT 1999											
08...	.5	12	56	214	208	.29	2180	<.01	.13	<.02	.2
NOV											
01...	.5	15	59	232	230	.32	2050	<.01	.12	<.02	.1
DEC											
14...	.5	18	65	255	239	.35	2000	<.01	.40	<.02	.1
JAN 2000											
20...	.6	16	62	246	231	.33	1790	<.01	.32	<.02	E.09
FEB											
07...	.6	16	62	235	228	.32	1580	<.01	.31	<.02	.1
MAR											
13...	.5	14	67	251	234	.34	1620	<.01	.18	<.02	.2
APR											
05...	.6	13	67	226	234	.31	1300	<.01	.09	<.02	.2
MAY											
03...	.3	15	23	126	119	.17	2930	<.01	.14	.03	.2
19...	.3	14	27	144	132	.20	3930	<.01	.16	.04	.2
30...	.2	11	9.0	73	67	.10	6010	<.01	.08	<.02	.1
JUN											
09...	.2	10	8.3	71	65	.10	5040	<.01	.09	<.02	E.08
23...	.3	12	16	102	92	.14	4210	<.01	.07	<.02	.1
JUL											
10...	.3	11	23	125	114	.17	2920	<.01	<.05	<.02	E.10
AUG											
14...	.5	8.9	54	202	185	.27	1470	<.01	<.05	<.02	.2
SEP											
26...	.4	13	67	261	253	.35	2460	<.01	.23	<.02	.1

E--Estimated.

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT 1999											
08...	.2	<.01	E.003	.011	<10	3	--	2.1	.3	5	51
NOV											
01...	.2	<.01	<.006	.011	E8	3	<.2	1.8	.2	3	27
DEC											
14...	.3	.01	.008	.018	E9	4	--	1.4	.3	7	55
JAN 2000											
20...	.2	<.01	E.004	.016	12	4	--	1.4	.5	28	204
FEB											
07...	.2	<.01	E.005	.029	E10	6	--	1.6	.5	16	108
MAR											
13...	.2	<.01	E.005	.025	12	11	--	1.9	.6	12	77
APR											
05...	.3	<.01	E.005	.032	13	12	--	2.0	.6	1	5.8
MAY											
03...	.6	.02	.022	.19	19	3	--	3.8	1.5	147	3420
19...	1.3	.01	.018	.73	E9	<2	--	3.8	4.7	1020	27900
30...	1	.02	.025	.75	25	4	--	3.3	4.0	674	55500
JUN											
09...	.4	.02	.024	.30	11	E1	--	2.3	1.8	264	18700
23...	.2	.02	.016	.071	E8	3	--	2.3	1.2	58	2400
JUL											
10...	.2	<.01	.007	.045	<10	E2	--	1.9	.9	28	653
AUG											
14...	.3	<.01	.009	.028	<10	4	--	2.5	.4	9	65
SEP											
26...	.3	<.01	<.006	.050	E7	4	--	1.9	.8	--	--

DATE	TIME	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DISSOLVED (UG/L) (34253)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLORPYRIFOS DISSOLVED (UG/L) (38933)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)
OCT												
08...	0900	<.003	<.002	<.002	<.002	.005	<.002	<.002	<.003	<.003	<.004	<.004
NOV												
01...	1230	<.003	<.002	<.002	<.002	E.003	<.002	<.002	<.003	<.003	<.004	<.004
DEC												
14...	1430	<.003	<.002	<.002	<.002	<.005	<.002	<.002	<.003	E.013	<.004	<.004

DATE	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON, DISSOLVED (UG/L) (39572)	DIELDRIN DISSOLVED (UG/L) (39381)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DISSOLVED (UG/L) (39341)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)
OCT											
08...	<.002	E.004	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
NOV											
01...	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
DEC											
14...	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002

DATE	MALATHION, DISSOLVED (UG/L) (39532)	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLACHLOR WATER DISSOLV (UG/L) (39415)	METRIBUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARATHION, DISSOLVED (UG/L) (39542)	PEBULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)
OCT											
08...	<.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004
NOV											
01...	<.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004
DEC											
14...	<.005	<.001	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004

E--Estimated.

DATE	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)
OCT											
08...	<.005	<.002	<.018	<.003	<.007	<.004	<.013	<.005	<.01	<.007	<.013
NOV											
01...	<.005	<.002	E.003	<.003	<.007	<.004	<.013	<.005	<.01	<.007	<.013
DEC											
14...	<.005	<.002	<.018	<.003	<.007	<.004	<.013	<.005	<.01	<.007	<.013

DATE	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L) (34506)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L) (34511)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L) (34496)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L) (34501)	1,1-DI CHLORO-PRO-PENE, WAT, WH TOTAL (UG/L) (77168)	123-TRI CHLORO-PROPANE WATER WHOLE TOTAL (UG/L) (77443)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L) (77651)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L) (32103)
OCT											
08...	<.002	<.001	<.002	<.03	<.06	<.07	<.04	<.03	<.2	<.04	<.1
NOV											
01...	<.002	E.002	<.002	<.03	<.06	<.07	<.04	<.03	<.2	<.04	<.1
DEC											
14...	<.002	.004	<.002	<.03	<.06	<.07	<.04	<.03	<.2	<.04	<.1

DATE	1,2-DI-CHLORO-PROPANE TOTAL (UG/L) (34541)	TRANS-1,2-DI-CHLORO-ETHENE TOTAL (UG/L) (34546)	2,2-DI CHLORO-PRO-PANE WAT, WH TOTAL (UG/L) (77170)	2BUTENE TRANS-1 4-DI-CHLORO UNFLTRD RECOVER (UG/L) (73547)	2-HEXA-NONE WATER WHOLE TOTAL (UG/L) (77103)	ACETONE WATER WHOLE TOTAL (UG/L) (81552)	ACRYLO-NITRILE TOTAL (UG/L) (34215)	1,2,3-TRI-CHLORO BENZENE WAT, WH REC (UG/L) (77613)	BENZENE 123-TRI METHYL-WATER UNFLTRD RECOVER (UG/L) (77221)	BENZENE 1,2,4-TRI-CHLORO-WAT UNF REC (UG/L) (34551)	BENZENE 124-TRI METHYL UNFILT RECOVER (UG/L) (77222)
OCT											
08...	<.07	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.2	<.06
NOV											
01...	<.07	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.2	<.06
DEC											
14...	<.07	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.2	<.06

DATE	BENZENE 135-TRI METHYL WATER UNFLTRD REC (UG/L) (77226)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34566)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34571)	ISO-PROPYL-BENZENE WATER WHOLE REC (UG/L) (77223)	BENZENE N-BUTYL WATER UNFLTRD REC (UG/L) (77342)	BENZENE N-PROPY WATER UNFLTRD REC (UG/L) (77224)	BENZENE O-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34536)	BENZENE SEC BUTYL-WATER UNFLTRD REC (UG/L) (77350)	BENZENE TERT-BUTYL-WATER UNFLTRD REC (UG/L) (77353)	BENZENE TOTAL (UG/L) (34030)	BROMO-BENZENE WATER, WHOLE, TOTAL (UG/L) (81555)
OCT											
08...	<.04	<.05	<.05	<.03	<.2	<.04	<.05	<.03	<.06	<.04	<.04
NOV											
01...	<.04	<.05	<.05	<.03	<.2	<.04	<.05	<.03	<.06	<.04	<.04
DEC											
14...	<.04	<.05	<.05	<.03	<.2	<.04	<.05	<.03	<.06	E.01	<.04

DATE	BROMO-ETHENE WATER UNFLTRD RECOVER (UG/L) (50002)	BROMO-FORM TOTAL (UG/L) (32104)	CARBON DI-SULFIDE WATER WHOLE TOTAL (UG/L) (77041)	CARBON TETRA-CHLO-RIDE TOTAL (UG/L) (32102)	CHLORO-BENZENE TOTAL (UG/L) (34301)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L) (32105)	CHLORO-ETHANE TOTAL (UG/L) (34311)	CHLORO-FORM TOTAL (UG/L) (32106)	CIS-1,2-DI-CHLORO-ETHENE WATER TOTAL (UG/L) (77093)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34704)	DIBROMO CHLORO-PROPANE WATER WHOLE TOT.REC (UG/L) (82625)
OCT											
08...	<.1	<.06	<.07	<.06	<.03	<.2	<.1	<.05	<.04	<.09	<.2
NOV											
01...	<.1	<.06	<.07	<.06	<.03	<.2	<.1	<.05	<.04	<.09	<.2
DEC											
14...	<.1	<.06	<.07	<.06	<.03	<.2	<.1	<.05	<.04	<.09	<.2

E--Estimated.

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	DI-BROMO-METHANE WATER WHOLE RECOVER (UG/L) (30217)	BROMO-DI-CHLORO-METHANE TOTAL (UG/L) (32101)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L) (34668)	DI-ISO-PROPYL-ETHER, WATER, UNFLTRD RECOVER (UG/L) (81577)	ETHANE, 1112-TETRA-CHLORO-WAT UNF REC (UG/L) (77562)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L) (34516)	ETHANE HEXA-CHLORO-WATER UNFLTRD RECOVER (UG/L) (34396)	ETHER ETHYL WATER UNFLTRD RECOVER (UG/L) (81576)	ETHER TERT-BUTYL ETHYL UNFLTRD RECOVER (UG/L) (50004)	ETHER TERT-PENTYL METHYL UNFLTRD RECOVER (UG/L) (50005)	ETHYL-BENZENE TOTAL (UG/L) (34371)
OCT											
08...	<.05	<.05	<.3	<.1	<.03	<.09	<.2	<.2	<.05	<.1	<.03
NOV											
01...	<.05	<.05	<.3	<.1	<.03	<.09	<.2	<.2	<.05	<.1	<.03
DEC											
14...	<.05	<.05	<.3	<.1	<.03	<.09	<.2	<.2	<.05	<.1	<.03

DATE	FREON-113 WATER UNFLTRD REC (UG/L) (77652)	FURAN, TETRA-HYDRO-WATER UNFLTRD RECOVER (UG/L) (81607)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L) (39702)	ISO-DURENE WATER UNFLTRD RECOVER (UG/L) (50000)	METHAC-RYLATE ETHYL-WATER UNFLTRD RECOVER (UG/L) (73570)	METHAC-RYLATE METHYL WATER UNFLTRD RECOVER (UG/L) (81597)	METH-ACRYLO-NITRITE WATER UNFLTRD RECOVER (UG/L) (81593)	METHANE BROMO CHLORO-WAT UNFLTRD REC (UG/L) (77297)	METHYL ACRY-LATE WATER UNFLTRD RECOVER (UG/L) (49991)	METHYL IODIDE WATER UNFLTRD RECOVER (UG/L) (77424)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L) (78032)
OCT											
08...	<.06	<2	<.1	<.2	<.2	<.3	<.6	<.04	<1	<.1	<.2
NOV											
01...	<.06	<2	<.1	<.2	<.2	<.3	<.6	<.04	<1	<.1	<.2
DEC											
14...	<.06	<2	<.1	<.2	<.2	<.3	<.6	<.04	<1	<.1	<.2

DATE	METHYL-BROMIDE TOTAL (UG/L) (34413)	METHYL-CHLO-RIDE TOTAL (UG/L) (34418)	METHYL ENE CHLO-RIDE TOTAL (UG/L) (34423)	METHYL-ETHYL-KETONE WATER WHOLE TOTAL (UG/L) (81595)	METHYL ISO-BUTYL KETONE WAT.WH. TOTAL (UG/L) (78133)	META/ PARA-XYLENE WATER UNFLTRD REC (UG/L) (85795)	NAPHTH-ALENE TOTAL (UG/L) (34696)	O-CHLORO-TOLUENE WATER WHOLE TOTAL (UG/L) (77275)	O-XYLENE WATER WHOLE TOTAL (UG/L) (77135)	P-ISO-PROPYL-TOLUENE WATER WHOLE REC (UG/L) (77356)	1234-TETRA METHYL BENZENE UNFLTRD REC (UG/L) (49999)
OCT											
08...	<.3	<.5	<.4	<2	<.4	<.06	<.2	<.04	<.04	<.07	<.2
NOV											
01...	<.3	<.5	<.4	<2	<.4	<.06	<.2	<.04	<.04	<.07	<.2
DEC											
14...	<.3	<.5	<.4	<2	<.4	<.06	<.2	<.04	<.04	<.07	<.2

DATE	1,3-DI-CHLORO-PROPANE WAT. WH TOTAL (UG/L) (77173)	PROPENE 3-CHLORO-WATER UNFLTRD RECOVER (UG/L) (78109)	STYRENE TOTAL (UG/L) (77128)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L) (34475)	TOLUENE O-ETHYL WATER UNFLTRD RECOVER (UG/L) (77220)	TOLUENE P-CHLOR WATER UNFLTRD REC (UG/L) (77277)	TOLUENE TOTAL (UG/L) (34010)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34699)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L) (39180)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L) (34488)	VINYL CHLO-RIDE TOTAL (UG/L) (39175)
OCT											
08...	<.1	<.2	<.04	<.1	<.06	<.06	E.04	<.09	<.04	<.09	<.1
NOV											
01...	<.1	<.2	<.04	<.1	<.06	<.06	E.01	<.09	<.04	<.09	<.1
DEC											
14...	<.1	<.2	<.04	<.1	<.06	<.06	E.02	<.09	<.04	<.09	<.1

E--Estimated.

06216000 PRYOR CREEK AT PRYOR, MT

LOCATION.--Lat 45°26'06", long 108°32'01", in NE$^1/_4$NW$^1/_4$NE$^1/_4$ sec.5, T.5 S., R.26 E., Big Horn County, Hydrologic Unit 10070008, on left bank 60 ft upstream from county bridge, 0.5 mi north of Pryor, 1.4 mi downstream from Lost Creek, and at river mile 82.7.

DRAINAGE AREA.--117 mi^2.

PERIOD OF RECORD.--June 1921 to September 1924 (no winter records), November 1966 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area. WDR MT-87-1: 1982-83 (M), 1986 (M).

GAGE.--Water-stage recorder. Datum of gage is 4,007.35 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Oct. 14, 1966, nonrecording gage at approximately same site at different datum.

REMARKS.--Records good. Diversions for irrigation of about 1,100 acres upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	22	22	21	21	23	24	24	18	17	7.8	17
2	23	23	22	21	21	23	25	24	16	18	7.8	17
3	23	24	22	20	22	22	24	23	18	18	8.0	17
4	23	24	22	20	21	22	24	23	18	18	8.7	16
5	23	24	22	21	21	22	24	23	19	18	9.4	15
6	23	24	22	20	21	22	23	23	17	16	8.9	15
7	23	24	22	20	21	24	24	24	17	17	8.5	16
8	24	24	22	20	22	23	24	25	16	16	8.6	15
9	23	24	22	20	23	22	23	24	15	15	8.5	15
10	22	24	22	18	23	23	23	24	16	14	8.2	15
11	23	24	22	20	22	23	23	24	17	11	7.9	15
12	24	24	22	21	21	23	23	24	18	9.1	7.7	15
13	23	24	22	19	21	23	23	24	19	7.7	8.1	15
14	24	24	22	21	21	23	24	23	19	7.5	8.2	15
15	23	24	22	21	21	22	24	23	20	7.5	8.7	15
16	23	24	22	21	21	22	24	23	20	7.2	8.8	18
17	23	24	23	21	21	22	23	30	20	7.4	10	18
18	23	24	22	20	21	22	22	85	19	7.5	11	18
19	24	24	22	21	21	e22	22	47	18	7.7	11	18
20	24	24	22	20	21	e22	22	38	18	7.6	12	18
21	24	23	23	20	22	e22	22	34	18	7.6	13	19
22	24	23	22	21	22	e23	22	31	18	7.0	13	22
23	24	23	21	21	21	e23	23	29	18	6.0	16	23
24	24	23	21	21	23	e23	24	28	18	6.6	16	23
25	24	23	21	21	22	23	24	27	18	6.6	14	22
26	24	24	21	21	22	23	23	26	18	6.3	14	22
27	24	23	21	21	22	23	23	25	17	6.4	15	21
28	24	23	21	20	23	24	24	24	17	6.4	15	21
29	24	23	21	20	24	27	24	23	17	6.5	16	21
30	23	23	21	20	---	25	24	23	17	6.5	16	21
31	23	---	21	20	---	24	---	23	---	7.5	18	---
TOTAL	727	708	675	632	628	710	701	871	534	320.6	343.8	538
MEAN	23.5	23.6	21.8	20.4	21.7	22.9	23.4	28.1	17.8	10.3	11.1	17.9
MAX	24	24	23	21	24	27	25	85	20	18	18	23
MIN	22	22	21	18	21	22	22	23	15	6.0	7.7	15
AC-FT	1440	1400	1340	1250	1250	1410	1390	1730	1060	636	682	1070

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2000, BY WATER YEAR (WY)

MEAN	32.9	32.4	31.6	30.1	31.1	33.1	33.4	57.8	43.3	24.7	22.3	28.2
MAX	62.9	62.0	69.7	54.3	55.7	70.9	58.8	251	158	69.3	49.5	61.0
(WY)	1976	1976	1976	1976	1976	1979	1976	1978	1975	1975	1975	1978
MIN	18.5	21.5	20.1	20.4	21.3	22.7	17.7	21.5	14.8	9.62	10.4	15.3
(WY)	1991	1995	1990	2000	1995	1995	1968	1992	1985	1990	1968	1990

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1968 - 2000	
ANNUAL TOTAL	8180.2		7388.4			
ANNUAL MEAN	22.4		20.2		33.4	
HIGHEST ANNUAL MEAN					66.3	1975
LOWEST ANNUAL MEAN					19.7	1990
HIGHEST DAILY MEAN	32	May 3	85	May 18	1700	May 19 1978
LOWEST DAILY MEAN	8.1	Aug 3	6.0	Jul 23	3.2	Aug 1 1988
ANNUAL SEVEN-DAY MINIMUM	8.7	Aug 2	6.4	Jul 23	6.4	Jul 23 2000
INSTANTANEOUS PEAK FLOW			117	May 18	a2280	May 19 1978
INSTANTANEOUS PEAK STAGE			4.31	May 18	b8.88	May 19 1978
INSTANTANEOUS LOW FLOW			5.8	Jul 23	1.8	Jul 31 1988
ANNUAL RUNOFF (AC-FT)	16230		14650		24210	
10 PERCENT EXCEEDS	29		24		50	
50 PERCENT EXCEEDS	23		22		28	
90 PERCENT EXCEEDS	15		9.8		18	

a--From rating curve extended above 410 ft^3/s on basis of contracted-opening measurement.
b--From floodmark.
e--Estimated.

YELLOWSTONE RIVER BASIN

06279500 BIGHORN RIVER AT KANE, WY

(National water-quality assessment program)

LOCATION.--Lat 44°45'31", long 108°10'51", in NW$^1/_4$NE$^1/_4$ SW$^1/_4$ sec.9, T.55 N., R.94 W., Big Horn County, Hydrologic Unit 10080010, on right bank 180 ft upstream from Bighorn Canyon National Recreation Area boundary, 0.5 mi upstream from normal high-water line of Bighorn Lake at elevation 3,660 ft, 1.3 mi upstream from Five Springs Creek, and 5.9 mi south of Kane.

DRAINAGE AREA.--15,765 mi^2. Area at sites used prior to May 17, 1956, 15,846 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year.

REVISED RECORDS.--WSP 1309: 1929(M). WSP 1509: 1929. WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,660 ft above sea level, from topographic map. Aug. 29, 1928, to Apr. 25, 1932, nonrecording gage, and Apr. 25, 1932, to May 16, 1956, water-stage recorder at site 12.5 mi downstream at different datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Some regulation by Boysen Reservoir (station 06258900) since October 1951. Diversions for irrigation of about 376,000 acres upstream from station. U.S. Army Corps of Engineers data collection platform with satellite telemetry at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1923, 14.8 ft, Sept. 30, 1923, site and datum in use April 1932 to May 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1680	1720	1730	e1700	e1500	1550	982	1180	3570	1220	770	794
2	1810	1720	1730	e1600	e1600	1550	958	1180	3210	1240	691	824
3	1820	1750	1710	e1500	e1500	1520	1000	1130	2600	1300	695	808
4	1820	1770	1700	e1400	e1400	1470	1050	1280	2640	1240	715	792
5	1820	1800	1610	e1500	e1500	1470	975	1660	2740	1300	748	810
6	1770	1790	1610	e1600	e1500	1470	911	2030	2660	1190	953	739
7	1740	1790	1630	e1600	e1500	1490	848	2470	2580	994	951	690
8	1680	1780	1600	e1500	e1600	1460	880	2400	2410	893	877	719
9	1690	1780	1620	e1500	e1500	1420	895	1930	2350	850	828	714
10	1690	1730	1460	e1500	e1500	1380	859	1730	2540	846	799	704
11	1650	1730	1600	e1500	e1500	1370	843	1540	2360	858	775	727
12	1680	1730	1670	e1500	e1500	1360	790	1450	1980	874	735	738
13	1690	1690	1680	e1600	e1500	1310	786	1350	1870	830	730	709
14	1730	1680	e1600	e1600	e1500	1300	766	1290	1970	791	761	703
15	1750	1660	e1500	e1600	e1600	1290	898	1250	1790	747	736	679
16	1840	1650	e1600	e1600	e1600	1280	933	1200	1850	727	692	709
17	1840	1650	1690	e1500	1550	1290	870	1270	1990	787	679	732
18	1840	1680	1690	e1500	1560	1310	800	4280	1740	922	670	745
19	1860	1700	1670	e1500	1550	1310	785	2770	1540	1140	664	773
20	1850	1680	1620	e1500	1420	1290	942	2440	1570	1200	701	799
21	1790	1680	1660	e1500	1440	1300	877	2320	1840	1080	726	894
22	1770	1660	1640	e1500	1560	1280	853	2190	1660	986	728	1010
23	1750	1630	e1600	e1500	1620	1280	827	2410	1520	948	693	1260
24	1740	1570	e1500	e1500	1650	1290	941	3110	e1500	960	695	1490
25	1750	1570	e1500	e1400	1720	1250	1510	3550	e1500	927	688	1540
26	1760	1700	e1600	e1500	1520	1270	1640	3040	e1550	852	679	1450
27	1750	1790	e1700	e1500	1450	1280	1260	3080	e1550	800	638	1300
28	1740	1770	e1600	e1500	1520	1200	1090	2890	1560	804	663	1220
29	1740	1720	e1600	e1400	1540	1140	1010	3350	1470	845	642	1180
30	1730	1720	e1600	e1400	---	1110	1090	3940	1280	797	625	1140
31	1720	---	e1600	e1500	---	1080	---	3750	---	803	665	---
TOTAL	54490	51290	50320	47000	44400	41370	28869	69460	61390	29751	22612	27392
MEAN	1758	1710	1623	1516	1531	1335	962	2241	2046	960	729	913
MAX	1860	1800	1730	1700	1720	1550	1640	4280	3570	1300	953	1540
MIN	1650	1570	1460	1400	1400	1080	766	1130	1280	727	625	679
AC-FT	108100	101700	99810	93220	88070	82060	57260	137800	121800	59010	44850	54330
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2000, BY WATER YEAR (WY)*												
MEAN	1826	1692	1474	1381	1553	1844	1836	3233	5923	3213	1471	1548
MAX	3994	2871	2506	2871	3164	3171	3454	7505	14680	11650	6388	3673
(WY)	1983	1984	1983	1972	1983	1972	1943	1947	1944	1967	1930	1973
MIN	524	737	627	580	550	740	696	1005	1032	501	305	386
(WY)	1936	1961	1961	1937	1933	1989	1961	1960	1934	1961	1940	1935

YELLOWSTONE RIVER BASIN

06279500 BIGHORN RIVER AT KANE, WY--Continued

(National water-quality assessment program)

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1930 - 2000*	
ANNUAL TOTAL	1228700		528344			
ANNUAL MEAN	3366		1444		2249	
HIGHEST ANNUAL MEAN					3524	1947
LOWEST ANNUAL MEAN					915	1989
HIGHEST DAILY MEAN	12800	May 31	4280	May 18	24800	Jun 15 1935
LOWEST DAILY MEAN	1100	Apr 20	625	Aug 30	179	Jul 22 1934
ANNUAL SEVEN-DAY MINIMUM	1230	Apr 15	657	Aug 25	184	Jul 18 1934
INSTANTANEOUS PEAK FLOW			a5070	May 18	25200b	Jun 16 1935
INSTANTANEOUS PEAK STAGE			b6.59	Dec 26	c11.10	Jun 16 1935
ANNUAL RUNOFF (AC-FT)	2437000		1048000		1630000	
10 PERCENT EXCEEDS	7540		1840		4050	
50 PERCENT EXCEEDS	1920		1500		1670	
90 PERCENT EXCEEDS	1600		746		800	

*--August 1928 to September 1929 not included in computations, monthly only for selected months.
a--Gage height, 4.32 ft.
b--Backwater from ice.
c--Site and datum then in use.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947 to 1997, October 1999 to September 2000.

REMARKS.--Samples collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT											
26...	1400	1740	--	--	11.4	8.5	741	23.0	9.5	270	70
NOV											
29...	1430	1730	679	98	11.6	8.0	846	7.5	3.5	290	73
DEC											
21...	1340	1730	682	93	12.1	8.0	814	4.0	0.0	290	72
JAN											
26...	0820	E1500	669	93	11.9	7.5	795	-7.0	0.0	300	767
FEB											
28...	1445	1550	663	99	11.2	8.0	908	15.0	4.0	290	74
MAR											
21...	1345	1310	675	105	11.7	8.0	899	10.0	5.5	310	77
APR											
20...	1400	910	677	112	10.2	8.1	1010	21.5	14.0	320	79
MAY											
09...	1630	1860	660	114	10.1	8.0	636	18.0	14.0	200	53
19...	0855	2870	670	96	8.9	7.8	645	14.5	13.0	130	34
31...	0815	3710	663	111	9.9	7.3	368	17.0	14.0	120	33
JUN											
20...	1455	1550	668	100	8.4	7.7	796	20.5	17.0	260	67
JUL											
18...	1400	892	670	114	8.4	8.3	1000	33.0	24.0	320	86
AUG											
07...	1725	932	664	104	7.1	7.8	1030	31.5	27.5	310	81
15...	1245	742	672	151	11.7	8.0	938	32.0	21.5	280	70
SEP											
11...	1550	725	667	169	13.9	8.0	1070	23.0	18.0	350	90

06279500 BIGHORN RIVER AT KANE, WY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT											
26...	24	3.4	2	74	161	172	12	13.0	.4	7.2	255
NOV											
29...	25	3.7	2	71	168	203	0	14.8	.4	8.0	254
DEC											
21...	26	3.5	2	73	176	215	0	13.9	.3	9.1	244
JAN											
26...	27	3.7	2	72	185	226	0	15.8	.4	9.4	254
FEB											
28...	26	3.8	2	78	--	--	--	16.5	.4	8.5	285
MAR											
21...	27	3.5	2	76	174	212	0	15.6	.4	7.0	280
APR											
20...	29	4.7	2	87	189	231	0	16.4	.5	3.9	330
MAY											
09...	17	2.9	2	51	134	163	0	8.4	.3	7.0	184
19...	9.9	4.0	3	90	116	142	0	7.9	.5	7.9	177
31...	9.7	1.7	1	25	70	85	0	3.8	.1	6.7	92
JUN											
20...	21	3.1	2	64	174	212	0	9.3	.4	8.4	236
JUL											
18...	27	4.2	2	88	192	234	0	12.4	.5	8.1	307
AUG											
07...	25	5.1	2	93	--	--	--	13.3	.5	10.0	311
15...	25	3.5	2	86	175	214	0	13.5	.5	6.5	326
SEP											
11...	31	4.7	2	107	196	239	0	14.9	.1	7.9	343

DATE	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)
OCT										
26...	.21	.29	<.02	.130	<.01	<.006	<.01	.019	3.5	.5
NOV										
29...	.17	.35	<.02	.279	<.01	E.003	<.01	.021	3.4	.5
DEC										
21...	.27	.30	<.02	.232	<.01	E.003	<.01	.028	3.4	.3
JAN										
26...	.19	.23	.04	.336	<.01	.007	<.01	.015	2.9	.4
FEB										
28...	.22	.50	.02	.299	<.01	.010	<.01	.146	3.1	1.1
MAR										
21...	.20	.28	<.02	.189	<.01	E.004	<.01	.031	3.1	.2
APR										
20...	.30	.51	<.02	.435	.03	.013	<.01	.073	4.5	.3
MAY										
09...	.32	.96	.02	.589	.01	.025	.02	.301	4.4	2.2
19...	.32	15	.04	1.09	.02	.026	.02	12.2	4.6	>10
31...	.22	1.3	<.02	.248	<.01	.020	.02	.538	4.3	>5.0
JUN										
20...	.27	.61	<.02	.633	<.01	.023	.01	.164	4.1	1.3
JUL										
18...	.37	.80	<.02	1.03	.02	.011	.01	.191	4.9	2.3
AUG										
07...	.43	1.6	.05	1.14	.02	.032	.02	--	4.9	4.9
15...	.32	.65	<.02	.577	<.01	.007	<.01	.095	4.5	1.2
SEP										
11...	.31	.57	<.02	.576	<.01	.009	<.01	.068	4.5	1.0

E--Estimated.

YELLOWSTONE RIVER BASIN

06279500 BIGHORN RIVER AT KANE, WY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	TUR-BID-ITY (NTU) (00076)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT												
05...	140	130	.19	639	--	--	--	20	3	--	2	9.1
NOV												
03...	156	153	.21	526	--	--	--	30	6	<.2	3	10
DEC												
16...	186	178	.25	465	--	--	--	40	12	--	3	7.5
JAN												
13...	194	193	.26	409	--	--	--	40	17	--	2	4.2
FEB												
09...	190	179	.26	501	2.0	--	--	50	16	--	5	13
MAR												
15...	187	178	.25	500	2.0	--	--	50	13	--	4	11
APR												
11...	182	163	.25	600	4.6	--	--	50	12	--	8	26
MAY												
15...	104	94	.14	1150	6.1	--	--	30	7	--	17	187
25...	69	58	.09	2380	60	--	--	40	9	--	362	12500
JUN												
08...	57	55	.08	2090	38	--	--	20	3	--	234	8590
27...	76	71	.10	1560	6.0	K7	K5	10	3	--	24	494
JUL												
11...	87	84	.12	1030	3.0	K9	K6	10	E2	--	10	119
AUG												
15...	120	111	.16	635	3.0	K70	K4	20	3	--	4	21
SEP												
27...	158	147	.21	516	1.9	K12	K4	40	4	--	--	--

DATE	TIME	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
OCT									
26...	1400	3	<1	E1.3	50	<1	<1	<.8	<1

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
OCT									
26...	2	<1	<.2	2	2	E1.3	<1	1	6

DATE	TIME	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)
OCT												
26...	1400	<.003	<.002	<.002	<.002	.005	<.002	<.002	<.003	<.003	<.004	<.004
NOV												
29...	1430	<.003	<.002	<.002	<.002	.006	<.002	<.002	<.003	<.003	<.004	<.004
DEC												
21...	1340	<.003	<.002	<.002	<.002	.004	<.002	<.002	<.003	<.003	<.004	<.004

E--Estimated.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)
OCT												
26...	<.002	E.006	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005
NOV												
29...	<.002	E.004	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005
DEC												
21...	<.002	<.007	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)
OCT												
26...	<.001	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002
NOV												
29...	<.001	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002
DEC												
21...	<.001	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002

DATE	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT												
26...	E.004	<.003	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.001	<.002
NOV												
29...	<.018	<.003	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.001	<.002
DEC												
21...	E.003	<.003	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.001	<.002

E--Estimated.

06285100 SHOSHONE RIVER NEAR LOVELL, WY

LOCATION.--Lat 44°50'19", long 108°26'04", in NW$^1/_4$ NE$^1/_4$ NE$^1/_4$ sec.17, T.56 N., R.96 W., Big Horn County, Hydrologic Unit 10080014, on left bank 20 ft upstream from bridge on County Road 9 and 1.5 mi west of Lovell.

DRAINAGE AREA.--2,350 mi^2, approximately.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,850 ft above sea level, from topographic map. Prior to Oct. 1, 1976, at site 500 ft downstream, at datum 2.00 ft higher. Oct. 1, 1976 to Sept. 30, 1980, at site 500 ft downstream, at datum 1.00 ft higher. Oct. 1, 1981 to Nov. 13, 1986, at site 500 ft downstream at same datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated by Buffalo Bill Reservoir. (See station 06281500.) Natural flow of stream affected by storage reservoirs, power development, diversions upstream from station for irrigation of about 143,000 acres, of which about 8,000 acres are downstream from station, and return flow from irrigated areas. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1020	768	677	e580	e580	638	535	591	826	486	611	868
2	1010	765	679	604	e575	628	536	547	710	538	608	909
3	1020	866	675	600	e575	633	538	406	589	531	567	903
4	1010	882	665	598	e575	634	538	391	546	489	599	925
5	926	848	681	e600	e575	636	497	418	512	523	679	860
6	897	827	689	e600	e570	646	472	443	428	409	800	808
7	869	832	673	e600	572	633	464	559	348	335	853	846
8	831	934	666	e610	571	636	458	745	321	357	763	824
9	788	895	670	e610	584	601	470	694	465	405	708	801
10	732	909	685	e610	599	609	440	736	700	406	641	828
11	758	920	660	e615	581	647	340	741	726	370	620	831
12	758	900	650	618	579	615	315	773	815	288	591	797
13	691	714	654	599	567	585	341	796	846	242	688	762
14	712	394	663	e580	575	576	416	837	788	218	687	752
15	705	489	677	e580	576	574	556	863	913	242	617	731
16	768	828	673	580	573	568	560	781	1060	256	533	720
17	789	906	686	581	581	555	522	1650	1080	339	517	645
18	835	745	676	577	573	556	349	1760	1090	440	547	633
19	771	723	668	585	565	549	581	1200	1060	573	581	603
20	733	725	691	588	567	551	628	1460	1110	555	566	655
21	771	716	674	590	574	545	556	1290	1030	629	625	758
22	778	709	642	578	587	552	641	1260	905	675	583	894
23	913	689	628	576	613	551	601	1270	870	752	572	1080
24	956	695	629	578	612	548	642	1180	780	713	546	1150
25	975	705	645	574	639	543	560	1190	753	625	561	1120
26	1050	695	654	e575	603	541	482	1140	786	584	593	955
27	955	696	648	e575	618	543	434	1040	666	622	663	842
28	929	682	645	e575	626	548	402	928	629	640	684	738
29	899	671	656	e570	659	554	504	1040	596	654	647	685
30	852	676	e640	e575	---	537	595	992	554	682	648	635
31	824	---	e600	e575	---	535	---	856	---	709	794	---
TOTAL	26525	22804	20519	18256	17044	18067	14973	28577	22502	15287	19692	24558
MEAN	856	760	662	589	588	583	499	922	750	493	635	819
MAX	1050	934	691	618	659	647	642	1760	1110	752	853	1150
MIN	691	394	600	570	565	535	315	391	321	218	517	603
AC-FT	52610	45230	40700	36210	33810	35840	29700	56680	44630	30320	39060	48710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2000, BY WATER YEAR (WY)

MEAN	777	725	658	588	613	687	829	914	1937	1828	755	788
MAX	1251	1146	1168	1065	1139	1951	3353	2925	4935	4686	1305	1354
(WY)	1972	1969	1969	1973	1973	1997	1997	1996	1981	1982	1982	1991
MIN	369	297	306	226	228	243	248	193	203	149	207	245
(WY)	1989	1986	1995	1991	1989	1995	1981	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1967 - 2000	
ANNUAL TOTAL	391456		248804			
ANNUAL MEAN	1072		680		926	
HIGHEST ANNUAL MEAN					1659	1997
LOWEST ANNUAL MEAN					359	1988
HIGHEST DAILY MEAN	3590	Jun 22	1760	May 18	15200	Jun 10 1981
LOWEST DAILY MEAN	330	Feb 12	218	Jul 14	27	May 31 1977
ANNUAL SEVEN-DAY MINIMUM	339	Feb 11	279	Jul 11	48	May 30 1977
INSTANTANEOUS PEAK FLOW			2630	May 17	a16400	Jun 10 1981
INSTANTANEOUS PEAK STAGE			6.92	May 17	b10.86	Feb 5 1996
ANNUAL RUNOFF (AC-FT)	776500		493500		670700	
10 PERCENT EXCEEDS	2440		922		1550	
50 PERCENT EXCEEDS	856		640		680	
90 PERCENT EXCEEDS	491		488		340	

a--Gage height, 9.16 ft, site then in use, at present datum.
b--Backwater from ice.
e--Estimated.

06286400 BIGHORN LAKE NEAR ST. XAVIER, MT

LOCATION.--Lat 45°18'27", long 107°57'26", in $SW^1/_4SE^1/_4$ sec.18, T.6 S., R.30 E., Big Horn County, Hydrologic Unit 10080010, in block 13 of Yellowtail Dam on Bighorn River, 1.3 mi upstream from Grapevine Creek, 15.5 mi southwest of St. Xavier, and at river mile 86.6.

DRAINAGE AREA.--19,626 mi^2.

PERIOD OF RECORD.--November 1965 to current year (monthend contents only). Prior to October 1969, published as "Yellowtail Reservoir." Records of daily elevations and contents on file at the U. S. Geological Survey office in Helena, Montana.

GAGE.--Water-stage recorder in powerhouse control room. Datum of gage is referenced to sea level (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by thin concrete-arch dam; construction began in 1961; completed in 1967. Storage began Nov. 3, 1965. Usable capacity, 1,312,000 acre-ft, between elevation 3,296.50 ft, river outlet invert, and 3,657.00 ft, top of flood control. Elevation of spillway crest, 3,593.00 ft. Normal maximum operating level, 1,097,000 acre-ft, elevation, 3,640.00 ft. Minimum operating level, 483,400 acre-ft, elevation, 3,547.00 ft. Dead storage, 16,010 acre-ft, below elevation 3,296.50 ft. 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 contents, 1,346,000 acre-ft, July 6, 1967, elevation, 3,656.43 ft; minimum since first filling, 641,900 acre-ft, Apr. 14, 1989, elevation 3,583.30 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,037,000 acre-ft, Oct. 3, elevation, 3,638.65 ft; minimum, 853,300 acre-ft, Sept. 19, elevation, 3,619.44 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
Sept. 30	3,638.64	1,037,000	--
Oct. 31	3,635.43	999,800	-37,200
Nov. 30	3,633.67	980,700	-19,100
Dec. 31	3,631.70	960,300	-20,400
CAL YR 1999			-16,200
Jan. 31	3,629.87	942,300	-18,000
Feb. 29	3,629.17	935,600	-6,700
Mar. 31	3,626.59	912,000	-23,600
Apr. 30	3,622.49	877,300	-34,700
May 31	3,630.51	948,500	+71,200
June 30	3,634.20	986,300	+37,800
July 31	3,628.22	926,700	-59,600
Aug. 31	3,620.75	863,400	-63,300
Sept. 30	3,621.25	867,300	+3,900
WTR YR 2000			-169,700

YELLOWSTONE RIVER BASIN

06287000 BIGHORN RIVER NEAR ST. XAVIER, MT

LOCATION.--Lat 45°19'00", long 107°55'05", in $NW^1/_4NW^1/_4NE^1/_4$ sec.16, T.6 S., R.31 E., Big Horn County, Hydrologic Unit 10080015, on right bank 800 ft downstream from Yellowtail dam, 1,500 ft downstream from Lime Kiln Creek, 14 mi southwest of St. Xavier, and at river mile 83.9.

DRAINAGE AREA.--19,667 mi^2. Area at site used prior to Apr. 16, 1963, 19,626 mi^2.

PERIOD OF RECORD.--October 1934 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,158.38 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Apr. 16, 1963, and June 13, 1964, to Mar. 31, 1965, water-stage recorder at site 1.2 mi upstream at different datum. Apr. 1, 1965, to July 31, 1966, water-stage recorder at site 1,300 ft downstream at present datum.

REMARKS.--Records fair. **Figures of discharge given herein are sum of river flow and flow of Bighorn Canal.** Some regulation by 14 reservoirs in Wyoming with combined capacity of 1,400,000 acre-ft and complete regulation by Bighorn Lake (see preceding page) since Nov. 3, 1965. Diversions for irrigation of about 375,000 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, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4030	3630	2960	2630	2640	2430	2540	2470	2860	2920	2790	2520
2	4070	3650	2770	2620	2620	2430	2540	2460	2870	2930	2950	2490
3	4080	3520	2770	2640	2630	2440	2540	2480	2860	2940	2970	2470
4	4090	3150	2760	2640	2630	2430	2550	2460	2850	2930	2960	2460
5	4140	3160	2780	2650	2650	2430	2550	2530	2870	2950	2960	2400
6	4180	3160	2780	2630	2640	2430	2560	2600	2850	2940	2960	2330
7	4190	3180	2770	2570	2620	2430	2550	2620	2880	2810	2960	2310
8	4210	3170	2790	2570	2620	2440	2560	2580	2860	2820	2920	2290
9	4260	3200	2780	2580	2580	2430	2560	2580	2870	2800	2750	2280
10	4290	3240	2810	2590	2480	2530	2550	2570	2870	2810	2800	2260
11	4320	3240	2820	2610	2480	2770	2580	2580	2870	2810	2960	2230
12	4320	3240	2800	2610	2470	2780	2580	2580	2860	2830	2960	2180
13	4350	3260	2810	2610	2470	2780	2570	2570	2840	2830	2950	2150
14	4290	3270	2820	2620	2460	2770	2560	2590	2840	2840	2880	2140
15	3950	3290	2830	2620	2480	2770	2540	2600	2790	2840	2680	2120
16	3960	3240	2840	2630	2450	2760	2540	2620	2740	2860	2690	2120
17	3990	3120	2830	2640	2460	2750	2540	2630	2750	2840	2690	2090
18	4040	3070	2840	2660	2450	2770	2510	2620	2760	2810	2690	2070
19	4030	2900	2850	2660	2450	2760	2520	2630	2750	2780	2700	2050
20	4030	2900	2850	2650	2470	2770	2490	2640	2740	2780	2680	2080
21	4080	2920	2850	2670	2460	2740	2470	2630	2660	2780	2690	2200
22	4060	2920	2840	2680	2450	2760	2480	2640	2660	2770	2680	2190
23	4090	2960	2850	2690	2440	2760	2460	2630	2680	2780	2690	2180
24	4100	2970	2850	2670	2450	2760	2450	2660	2680	2770	2680	2170
25	4080	2960	2840	2660	2450	2750	2430	2670	2670	2780	2660	2150
26	4100	2980	2860	2660	2450	2740	2440	2780	2580	2760	2630	2140
27	3950	2990	2870	2660	2450	2750	2510	2830	2350	2770	2600	2130
28	3550	3010	2810	2660	2440	2760	2510	2850	2670	2790	2600	2120
29	3580	3020	2600	2660	2440	2700	2500	2860	2760	2770	2580	2150
30	3580	3010	2620	2660	---	2560	2470	2860	2810	2780	2550	2290
31	3620	---	2600	2650	---	2540	---	2870	---	2760	2530	---
TOTAL	125610	94330	86850	81750	72780	81920	75650	81690	83100	87580	85790	66760
MEAN	4052	3144	2802	2637	2510	2643	2522	2635	2770	2825	2767	2225
MAX	4350	3650	2960	2690	2650	2780	2580	2870	2880	2950	2970	2520
MIN	3550	2900	2600	2570	2440	2430	2430	2460	2350	2760	2530	2050
AC-FT	249100	187100	172300	162200	144400	162500	150100	162000	164800	173700	170200	132400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2000, BY WATER YEAR (WY)

MEAN	2993	2945	2752	2613	2678	2943	2929	3895	7214	5626	2912	2759
MAX	5142	5151	4999	5267	4384	4809	6675	8744	17900	18890	6784	4544
(WY)	1972	1983	1968	1968	1976	1976	1972	1947	1935	1967	1997	1973
MIN	1224	856	1095	1090	888	327	678	900	1078	1144	1260	1074
(WY)	1978	1966	1935	1935	1936	1966	1966	1966	1966	1960	1966	1966

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1935 - 2000	
ANNUAL TOTAL	1752340		1023810			
ANNUAL MEAN	4801		2797		3523	
HIGHEST ANNUAL MEAN					5059	1947
LOWEST ANNUAL MEAN					1565	1966
HIGHEST DAILY MEAN	10300	Jun 7	4350	Oct 13	37400	Jun 16 1935
LOWEST DAILY MEAN	2570	Apr 22	2050	Sep 19	112	Apr 2 1967
INSTANTANEOUS PEAK FLOW			4520	Oct 14	37400	Jun 16 1935
INSTANTANEOUS LOW FLOW					49	Mar 29 1966
ANNUAL RUNOFF (AC-FT)	3476000		2031000		2552000	
10 PERCENT EXCEEDS	7800		3260		5860	
50 PERCENT EXCEEDS	4070		2480		2890	
90 PERCENT EXCEEDS	2820		2210		1600	

06287000 BIGHORN RIVER NEAR ST. XAVIER, MT--Continued

SUMMARY STATISTICS	WATER YEARS 1935 - 1961*		WATER YEARS 1967 - 2000**	
ANNUAL MEAN	3426		3588	
HIGHEST ANNUAL MEAN	5059	1947	4839	1999
LOWEST ANNUAL MEAN	1706	1961	1868	1989
HIGHEST DAILY MEAN	37400	Jun 16 1935	24800	Jul 6 1967
LOWEST DAILY MEAN	300	Dec 20 1951	112	Apr 2 1967
ANNUAL SEVEN-DAY MINIMUM	656	Dec 25 1934	518	Mar 25 1970
INSTANTANEOUS PEAK FLOW	37400	Jun 16 1935	25300	Jul 5 1967
INSTANTANEOUS LOW FLOW	228	Dec 9 1937	a112	Apr 2 1967
ANNUAL RUNOFF (AC-FT)	2482000		2599000	
10 PERCENT EXCEEDS	6440		5620	
50 PERCENT EXCEEDS	2450		3220	
90 PERCENT EXCEEDS	1370		1920	

*--Prior to construction of Yellowtail Dam.
**--After completion of Yellowtail Dam.
a--Result of discharge measurement.

06289000 LITTLE BIGHORN RIVER AT STATE LINE, NEAR WYOLA, MT

LOCATION.--Lat 45°00'25", long 107°36'52", in $SW^1/_4NW^1/_4$ sec.36, T.9 S., R.33 E., Bighorn County, Hydrologic Unit 10080016, on right bank 20 ft downstream from county bridge, 0.5 mi north of Wyoming-Montana State line, 1 mi downstream from West Fork, 13 mi southwest of Wyola, and at river mile 115.2.
DRAINAGE AREA.--193 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1939 to current year. Prior to October 1940, published as Little Horn River at State Line, near Wyola.
REVISED RECORDS.--WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 4,350 ft above sea level, from topographic map.
REMARKS.--Water-discharge records good. Diversions for irrigation of 163 acres upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	84	82	78	63	64	64	122	641	233	129	99
2	102	80	82	77	70	64	68	149	578	228	128	96
3	96	91	81	68	75	64	64	168	574	222	127	94
4	100	90	75	71	65	64	67	209	559	215	126	93
5	98	88	77	76	74	65	71	247	532	207	130	93
6	98	86	80	73	70	66	69	254	511	200	129	96
7	97	84	82	73	68	65	65	250	485	193	122	96
8	96	87	68	72	68	66	64	207	461	188	120	93
9	94	87	71	73	69	62	65	192	454	184	119	93
10	94	85	82	72	69	64	65	183	478	181	117	92
11	94	87	76	73	66	64	64	177	417	176	117	91
12	93	84	78	74	68	63	68	163	397	170	116	90
13	93	83	80	70	67	63	73	155	406	165	115	88
14	96	81	75	72	67	63	78	153	359	161	113	85
15	99	81	78	72	67	63	73	163	384	160	112	85
16	95	83	79	72	65	61	70	192	362	158	111	84
17	94	85	80	71	65	63	72	472	333	159	111	84
18	101	87	78	70	64	63	78	472	308	162	111	85
19	95	80	75	71	61	63	82	421	312	161	110	93
20	96	85	77	70	65	63	78	418	330	157	106	92
21	96	80	76	70	66	61	85	429	307	152	106	92
22	96	72	78	70	66	64	95	515	287	147	105	90
23	95	69	78	70	65	64	101	618	282	144	103	89
24	96	68	78	69	66	64	95	677	286	142	102	87
25	95	79	77	67	68	63	85	795	280	141	102	89
26	93	86	76	70	64	64	88	814	265	139	101	86
27	93	84	77	70	65	64	87	759	263	137	101	84
28	92	81	77	69	66	66	101	923	253	134	101	82
29	92	81	77	54	65	67	135	915	250	132	100	82
30	89	82	77	54	---	65	114	793	239	131	100	82
31	92	---	77	56	---	64	---	724	---	130	103	---
TOTAL	2965	2480	2404	2167	1937	1979	2384	12729	11593	5209	3493	2685
MEAN	95.6	82.7	77.5	69.9	66.8	63.8	79.5	411	386	168	113	89.5
MAX	105	91	82	78	75	67	135	923	641	233	130	99
MIN	89	68	68	54	61	61	64	122	239	130	100	82
AC-FT	5880	4920	4770	4300	3840	3930	4730	25250	22990	10330	6930	5330

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2000, BY WATER YEAR (WY)

MEAN	87.5	76.3	68.4	63.1	61.8	62.0	85.7	328	529	224	125	99.1
MAX	120	104	91.2	84.9	88.0	86.4	172	533	1125	689	228	151
(WY)	1976	1942	1976	1946	1946	1946	1946	1977	1975	1975	1975	1975
MIN	64.0	55.2	48.3	43.6	47.8	48.6	50.7	127	169	101	69.8	67.9
(WY)	1961	1986	1990	1963	1990	1961	1961	1953	1985	1961	1961	1961

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1940 - 2000	
ANNUAL TOTAL	64164		52025			
ANNUAL MEAN	176		142		151	
HIGHEST ANNUAL MEAN					253	1975
LOWEST ANNUAL MEAN					90.3	1961
HIGHEST DAILY MEAN	1160	May 29	923	May 28	2340	Jun 4 1944
LOWEST DAILY MEAN	54	Jan 24	54	Jan 29	18	Feb 2 1989
ANNUAL SEVEN-DAY MINIMUM	64	Mar 8	62	Jan 26	27	Dec 18 1983
INSTANTANEOUS PEAK FLOW			1100	May 28	a2730	Jun 3 1944
INSTANTANEOUS PEAK STAGE			3.68	May 28	b5.93	Jun 9 1944
INSTANTANEOUS LOW FLOW			44	Jan 29	18	Feb 2 1989
ANNUAL RUNOFF (AC-FT)	127300		103200		109100	
10 PERCENT EXCEEDS	393		293		342	
50 PERCENT EXCEEDS	94		88		84	
90 PERCENT EXCEEDS	66		65		57	

a--Gage height, 4.97 ft, from rating curve extended above 1,400 ft^3/s.
b--Log jam.
e--Estimated.

06289000 LITTLE BIGHORN RIVER AT STATE LINE, NEAR WYOLA, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1993 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999								
17...	0840	83	8.6	376	10.0	4.5	.17	<.01
JAN 2000								
04...	1000	66	8.5	351	3.0	2.0	.22	<.01
MAR								
16...	1040	55	8.7	353	8.0	4.5	.12	<.01
MAY								
24...	1120	633	8.3	254	19.0	8.0	.14	<.01
JUN								
21...	1245	299	8.7	302	19.0	12.5	.08	<.01
AUG								
15...	1000	113	8.3	341	24.0	13.5	.10	<.01

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
17...	<.05	<.01	<.02	K2	K36	16	3.6	76
JAN 2000								
04...	<.05	<.01	<.02	--	90	15	2.7	89
MAR								
16...	<.05	<.01	<.02	K1	K1	4	.59	67
MAY								
24...	.08	<.01	<.02	K1	--	62	106	74
JUN								
21...	<.05	<.01	<.02	K1	K20	10	8.1	79
AUG								
15...	<.05	<.01	<.02	K60	K10	5	1.5	85

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
MAR 2000												
16...	1040	180	43	18	.6	.0	1.3	176	.4	.2	6.6	8.9
AUG												
15...	1000	170	44	16	.7	.0	1.2	181	.6	.1	5.8	6.8

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
MAR 2000												
16...	.25	27.4	185	<3	<.1	<1	<1	<21	<1	<2	<3	<31
AUG												
15...	.25	56.1	184	<3	<.1	<1	<1	23	<1	<2	<3	<31

K--Results based on non-ideal colony count.

YELLOWSTONE RIVER BASIN

06289500 LITTLE BIGHORN RIVER NEAR WYOLA, MT

LOCATION.--Lat 45°06'04", long 107°26'23", in $SE^1/_4SE^1/_4SW^1/_4$ sec. 29, T.8 S., R.35 E., Big Horn County, Hydrologic Unit 10080016, 2.5 mi upstream from Pass Creek , 3 mi southwest of Wyola.

DRAINAGE AREA.--251 mi^2.

PERIOD OF RECORD.--May 1993 to current year.

REMARKS.--Records were determined either by onsite measurement, stage-discharge rating, or estimated by subtracting discharge from Pass Creek near Wyola (station 06290000) from Little Bighorn below Pass Creek (station 06290500). Several observations of water temperature and specific conductance were made during the year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999								
17...	0920	100	8.6	530	9.0	4.0	.11	<.01
JAN 2000								
04...	1220	108	8.6	498	--	--	.15	<.01
MAR								
16...	1400	76	8.3	504	8.0	8.5	.08	<.01
MAY								
24...	1330	831	8.3	312	20.0	9.0	.13	<.01
JUN								
21...	1130	308	8.5	363	16.0	14.0	<.05	<.01
AUG								
15...	1130	84	8.3	467	28.0	17.0	<.05	<.01

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
17...	<.01	<.02	<.05	25	K220	28	7.6	75
JAN 2000								
04...	<.01	<.02	<.05	--	130	56	16	80
MAR								
16...	<.01	<.02	<.05	K1	K6	19	3.9	91
MAY								
24...	<.01	<.02	.09	K3	--	108	242	88
JUN								
21...	<.01	<.02	<.05	K60	K40	16	13	81
AUG								
15...	<.01	<.02	<.05	K30	K110	15	3.4	90

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
MAR 2000												
16...	1400	260	66	22	.9	.2	8.3	198	1	.2	6.6	87
AUG												
15...	1130	230	59	19	.9	.2	5.6	185	.8	.1	7.0	54

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
MAR 2000												
16...	312	.42	64	<3	<.1	<1	<1	145	<1	<2	<3	<31
AUG												
15...	258	.35	58	<3	<.1	<1	<1	113	<1	<2	<3	<31

K--Results based on non-ideal colony count.

YELLOWSTONE RIVER BASIN

06289600 WEST PASS CREEK NEAR PARKMAN, WY

LOCATION.--Lat 44°59'16", long 107°28'56", in NE$^1/_4$NE$^1/_4$SE$^1/_4$ sec.21, T.58 N., R.88 W., Sheridan County, Hydrologic Unit 10080016, on right bank, anchored to concrete headwall of culvert on county road and 7.6 mi northwest of Parkman.

DRAINAGE AREA.--15.4 mi^2.

PERIOD OF RECORD.--October 1982 to current year (no winter records water years 1985-87).

GAGE.--Water-stage recorder. Elevation of gage is 4,550 ft above sea level, from topographic map. Prior to Apr. 2, 1985, at site 100 ft north (on abandoned channel) at datum 4.28 ft lower. Apr. 2, 1985 to Mar. 27, 1986, at site 300 ft upstream at datum 0.95 ft higher. Apr. 2, 1985 to Sept. 30, 1998, at same site at datum 1.00 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation upstream from station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 7	1800	33	2.23
May 17	1545	*235	*4.13

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	8.4	7.7	7.3	e5.0	6.1	6.4	14	26	12	8.1	6.8
2	9.8	8.3	7.7	e7.0	e5.0	6.2	7.4	17	24	11	8.1	6.7
3	9.6	8.4	7.7	e6.8	e5.2	6.3	7.1	19	23	11	8.0	6.7
4	9.5	8.4	7.5	e7.0	e6.0	6.8	7.9	21	22	11	8.2	6.8
5	9.4	8.3	7.4	7.3	e6.4	6.8	7.4	21	21	11	8.5	6.8
6	9.2	8.4	7.3	7.1	6.6	6.8	7.1	20	20	11	8.2	7.1
7	8.9	8.3	7.2	6.9	6.4	6.6	7.0	25	19	11	7.9	7.0
8	8.7	8.2	e7.0	e6.9	6.4	6.9	6.8	20	18	11	7.9	6.8
9	8.6	8.1	e7.2	6.8	6.5	6.2	6.8	19	18	11	7.8	6.9
10	8.9	8.1	e7.1	e6.4	6.4	6.4	6.7	18	18	10	7.7	6.8
11	9.0	8.1	7.1	e5.7	5.4	6.4	6.5	17	17	10	7.6	6.9
12	9.0	7.9	6.8	e5.9	6.1	6.4	6.7	17	16	10	7.4	6.8
13	8.9	7.9	6.9	e5.9	e5.9	6.3	7.0	16	16	9.9	7.3	6.7
14	9.0	7.9	e6.8	e6.5	e5.9	6.4	7.3	16	15	9.7	7.3	6.7
15	9.0	7.9	7.1	e7.0	6.1	6.3	7.2	15	17	9.6	7.3	6.6
16	9.2	8.1	7.2	7.0	5.9	6.1	7.2	17	16	9.3	7.2	6.5
17	9.2	8.1	e7.2	7.0	5.9	6.3	7.2	138	15	9.6	7.1	6.6
18	9.4	8.7	7.2	e6.8	e5.8	6.1	8.4	93	14	9.9	7.3	6.6
19	9.1	8.2	e6.6	6.9	e5.9	6.2	11	69	15	9.2	7.2	7.6
20	9.0	8.2	e6.5	e6.5	e6.1	6.2	8.8	60	15	9.0	7.0	8.2
21	9.0	8.0	e6.9	6.9	6.3	5.9	8.8	52	14	8.8	7.0	8.6
22	8.8	7.8	e7.1	6.6	6.4	6.3	9.3	49	14	8.8	6.9	8.7
23	8.7	7.6	7.0	e6.5	6.4	6.4	10	47	14	8.8	6.7	8.2
24	8.7	7.5	7.0	e6.5	6.4	6.6	13	43	14	8.8	6.6	8.6
25	8.4	7.5	7.0	e6.2	e6.2	6.2	11	40	14	8.7	6.7	8.6
26	8.4	7.6	7.0	6.5	e6.0	6.5	11	39	14	8.6	6.7	7.8
27	8.4	7.7	7.0	6.8	6.3	6.3	11	35	13	8.5	6.7	7.5
28	8.6	7.7	7.0	6.5	6.6	6.6	11	34	13	8.4	6.6	7.2
29	8.4	7.7	6.9	e5.4	6.4	7.3	13	32	12	8.3	6.7	7.2
30	8.4	7.7	7.2	e5.3	---	6.5	13	29	12	8.3	6.8	7.2
31	8.4	---	7.2	e5.2	---	6.5	---	28	---	8.1	7.0	---
TOTAL	277.5	240.7	220.5	203.1	175.9	198.9	259.0	1080	499	300.3	227.5	217.2
MEAN	8.95	8.02	7.11	6.55	6.07	6.42	8.63	34.8	16.6	9.69	7.34	7.24
MAX	9.9	8.7	7.7	7.3	6.6	7.3	13	138	26	12	8.5	8.7
MIN	8.4	7.5	6.5	5.2	5.0	5.9	6.4	14	12	8.1	6.6	6.5
AC-FT	550	477	437	403	349	395	514	2140	990	596	451	431

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2000, BY WATER YEAR (WY)*

MEAN	7.94	7.63	6.69	6.51	6.30	7.56	13.7	34.6	25.9	13.5	9.17	8.05
MAX	9.95	9.30	9.02	8.10	7.98	10.5	25.2	79.9	60.6	26.9	14.9	11.6
(WY)	1996	1996	1996	1996	1996	1997	1994	1995	1995	1995	1995	1995
MIN	5.76	6.34	4.92	4.25	4.02	5.64	8.63	13.0	7.82	5.21	5.07	5.09
(WY)	1990	1990	1991	1988	1989	1991	2000	1985	1985	1985	1985	1989

YELLOWSTONE RIVER BASIN

06289600 WEST PASS CREEK NEAR PARKMAN, WY--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1983 - 2000*	
ANNUAL TOTAL	5362.8		3899.6			
ANNUAL MEAN	14.7		10.7		13.0	
HIGHEST ANNUAL MEAN					21.2	1995
LOWEST ANNUAL MEAN					7.76	1989
HIGHEST DAILY MEAN	57	May 26	138	May 17	291	May 9 1995
LOWEST DAILY MEAN	6.2	Jan 27	5.0	Feb 1,2	a.00	Dec 25 1998
ANNUAL SEVEN-DAY MINIMUM	6.8	Mar 3	5.3	Jan 29		
INSTANTANEOUS PEAK FLOW			235	May 17	340	May 9 1995
INSTANTANEOUS PEAK STAGE			4.13	May 17	b4.76	Apr 28 1984
ANNUAL RUNOFF (AC-FT)	10640		7730		9420	
10 PERCENT EXCEEDS	36		17			
50 PERCENT EXCEEDS	9.2		7.6			
90 PERCENT EXCEEDS	7.0		6.3			

*--During period of operation.
a--Result of channel blockage or diversion upstream.
b--Backwater from ice, site and datum then in use.
e--Estimated.

YELLOWSTONE RIVER BASIN

06289820 EAST PASS CREEK NEAR DAYTON, WY

LOCATION.--Lat 44°59'23", long 107°25'20", in $SE^1/_4SE^1/_4NE^1/_4$ sec.24, T.58 N., R.88 W., Sheridan County, Hydrologic Unit 10080016, on right bank 0.4 mi downstream from bridge on county road 144, 5.0 mi northwest of Parkman, and 11.2 mi northwest of Dayton.

DRAINAGE AREA.--21.7 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,405 ft above sea level, from topographic map. October 1982 to August 1995 at site 270 ft upstream at different datum. August 1995 to April 1996 at site 0.3 mi downstream at different datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Several small reservoirs upstream from station, combined capacity, 415 acre-ft, for irrigation. Diversions for irrigation of about 2,900 acres upstream from station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 7	1645	31	5.96
May 17	2145	*308	*7.09

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	7.1	8.9	8.4	e8.0	8.6	8.5	18	40	16	3.7	5.9
2	8.0	6.9	9.2	8.1	e8.2	8.4	9.6	19	36	16	3.6	5.9
3	7.7	7.1	9.3	e7.2	e7.8	8.5	9.0	22	34	16	3.6	5.8
4	6.6	7.1	e8.8	e7.6	e6.4	8.8	9.5	23	34	16	4.0	5.7
5	6.8	7.7	e8.6	8.3	e8.0	9.4	9.9	25	33	15	4.8	5.9
6	6.9	e8.0	9.0	7.9	7.8	9.7	9.8	26	30	15	4.8	6.5
7	7.1	e8.2	e9.0	7.7	7.7	9.8	9.5	27	28	14	5.3	6.5
8	7.1	e8.2	e8.8	7.6	8.0	10	9.0	24	27	14	8.4	5.9
9	7.4	e8.2	e8.8	7.6	8.7	9.3	8.9	22	26	14	8.3	5.9
10	7.4	e8.4	9.4	6.7	8.8	9.1	8.9	20	26	13	7.3	5.9
11	7.1	e8.6	9.4	7.4	e7.6	8.8	8.7	20	23	12	6.0	5.7
12	7.1	e8.6	9.4	8.0	e8.2	8.7	8.7	19	22	8.2	5.9	5.5
13	7.1	e8.8	e9.0	7.5	e8.0	8.4	9.3	17	21	5.9	5.9	5.1
14	7.1	e8.8	e8.8	8.3	e8.0	8.6	9.8	16	20	6.0	5.8	5.0
15	7.1	e8.8	9.1	7.6	e8.0	8.4	9.4	16	22	6.3	5.8	5.6
16	7.1	e8.8	9.3	7.4	e7.8	7.9	9.3	17	21	6.4	5.7	5.5
17	6.9	e9.0	9.7	7.6	e7.8	8.0	9.0	122	20	6.7	5.8	5.4
18	7.1	e9.2	e9.0	e7.4	e7.6	8.0	9.5	180	19	7.1	6.0	5.5
19	7.2	e9.0	e7.6	7.5	e7.6	7.8	12	132	20	6.9	6.1	6.7
20	7.4	9.0	e8.2	e7.6	e8.0	8.0	12	107	21	6.5	5.9	6.9
21	7.1	9.0	e8.8	7.7	8.2	7.6	11	83	19	6.3	5.9	7.2
22	6.6	9.0	e9.0	7.7	8.4	7.7	12	74	19	6.7	5.7	7.6
23	6.7	8.8	9.0	e7.4	8.4	7.9	15	72	18	7.3	5.6	7.1
24	6.9	8.9	9.0	e7.0	8.4	8.5	17	68	19	6.8	5.5	7.2
25	6.9	8.9	9.0	e7.4	8.8	8.1	16	61	19	6.4	5.5	7.3
26	6.9	8.8	8.6	7.9	e8.2	8.3	15	59	18	6.3	5.5	7.3
27	7.1	9.0	8.7	8.0	e8.4	8.3	14	54	18	5.8	5.6	7.1
28	7.1	8.7	8.7	7.7	8.5	8.6	15	51	17	4.6	5.6	7.0
29	7.1	8.5	8.7	e6.2	8.7	9.3	20	48	17	4.0	5.6	6.8
30	7.7	8.7	8.6	e6.5	---	9.0	20	43	16	3.9	5.7	6.8
31	7.2	---	8.4	e7.8	---	8.7	---	41	---	3.6	6.2	---
TOTAL	221.2	253.8	275.8	234.7	234.0	266.2	345.3	1526	703	282.7	175.1	188.2
MEAN	7.14	8.46	8.90	7.57	8.07	8.59	11.5	49.2	23.4	9.12	5.65	6.27
MAX	8.0	9.2	9.7	8.4	8.8	10	20	180	40	16	8.4	7.6
MIN	6.6	6.9	7.6	6.2	6.4	7.6	8.5	16	16	3.6	3.6	5.0
AC-FT	439	503	547	466	464	528	685	3030	1390	561	347	373
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2000, BY WATER YEAR (WY)												
MEAN	9.00	9.08	8.54	8.66	8.63	9.88	17.1	45.7	37.8	13.6	7.60	7.51
MAX	13.9	11.4	10.5	10.5	10.6	14.2	32.4	90.8	82.8	32.9	14.8	14.8
(WY)	1996	1996	1996	1996	1996	1997	1994	1995	1995	1992	1993	1995
MIN	5.73	6.90	6.69	6.96	6.78	7.29	9.30	15.2	6.65	5.06	2.73	4.02
(WY)	1991	1986	1988	1988	1989	1990	1992	1985	1985	1985	1988	1989

06289820 EAST PASS CREEK NEAR DAYTON, WY--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1983 - 2000	
ANNUAL TOTAL	7193.8		4706.0			
ANNUAL MEAN	19.7		12.9		15.3	
HIGHEST ANNUAL MEAN					23.6	1984
LOWEST ANNUAL MEAN					8.57	1989
HIGHEST DAILY MEAN	112	May 26,29	180	May 18	304	May 9 1995
LOWEST DAILY MEAN	1.6	Sep 1	3.6	Jul 31,Aug 2,3	1.6	Sep 1 1999
ANNUAL SEVEN-DAY MINIMUM	2.5	Sep 1	3.8	Jul 29	2.1	Aug 20 1988
INSTANTANEOUS PEAK FLOW			308	May 17	a511	May 9 1995
INSTANTANEOUS PEAK STAGE			7.09	May 17	b9.00	Feb 6 1996
INSTANTANEOUS LOW FLOW					1.7	Aug 6 1988
ANNUAL RUNOFF (AC-FT)	14270		9330		11070	
10 PERCENT EXCEEDS	58		21		31	
50 PERCENT EXCEEDS	9.7		8.4		9.4	
90 PERCENT EXCEEDS	6.7		5.9		6.2	

a--Gage height, 4.47 ft, site and datum then in use from rating curve extended above 221 ft^3/s.
b--Ice jam, site and datum then in use.
e--Estimated.

YELLOWSTONE RIVER BASIN

06290000 PASS CREEK NEAR WYOLA, MT

LOCATION.--Lat 45°03'23", long 107°21'19", in NE$^1/_4$NE$^1/_4$SE$^1/_4$ sec.13, T.9 S., R.35 E., Big Horn County, Hydrologic Unit 10080016, on right bank 125 ft downstream from bridge on U.S. Highway 87, 2.0 mi downstream from Twin Creek, 5.5 mi south of Wyola, and at river mile 10.2.
DRAINAGE AREA.--111 mi^2. Drainage area at site used prior to Sept. 30, 1956, 119 mi^2.
PERIOD OF RECORD.--June 1935 to September 1956 (no winter records prior to 1939), October 1982 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 3,920 ft above sea level, from topographic map. Dec. 21, 1950, to Sept. 30, 1956, water-stage recorder, and June 4, 1935, to Dec. 20, 1950, nonrecording gage at site 0.3 mi upstream at different datum. Flow is equivalent.
REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 2,500 acres upstream of station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	18	17	e15	e21	e33	e35	e50	e180	e34	e9.0	e33
2	21	18	17	e12	e15	e35	e39	e35	e150	e33	e16	e30
3	21	19	17	e14	e14	e35	e43	e38	e110	e34	e21	e29
4	21	19	19	e17	e18	e35	e40	e28	e100	e30	e23	e29
5	19	19	27	e16	e20	e35	e40	e20	e100	e32	e27	e30
6	18	19	19	e17	e20	e35	e40	e45	e94	e31	e25	e33
7	18	19	18	e15	e25	e40	e40	e80	e100	e24	e18	e33
8	17	19	16	e16	e24	e45	e37	e120	e100	e17	e16	e28
9	16	19	14	e17	e20	e40	e35	e100	e88	e16	e18	e29
10	17	19	e13	e18	e20	e35	e35	e80	e100	e15	e17	e29
11	17	19	e13	e16	e21	e30	e30	e70	e120	e15	e20	e28
12	18	18	e13	e14	e20	e25	e27	e73	e88	e14	e24	e27
13	17	18	e12	e15	e20	e25	e27	e82	e45	e15	e26	e26
14	18	18	e15	e15	e23	e24	e27	e80	e100	e18	e25	e24
15	18	18	e16	e17	e21	e24	e30	e63	e100	e23	e25	e25
16	18	18	e15	e15	e21	e22	e35	e50	e86	e27	e25	e24
17	18	19	e15	e14	e19	e23	e30	e200	e54	e22	e28	e24
18	19	22	e13	e13	e19	e25	e28	e1000	e54	e17	e30	e25
19	19	23	e14	e13	e20	e29	e30	e540	e80	e12	e29	e32
20	19	20	e15	e16	e25	e30	e30	e370	e64	e10	e25	e25
21	19	20	e18	e17	e25	e32	e30	e280	e80	e9.0	e27	e20
22	18	19	e16	e14	e24	e35	e30	e180	e62	e9.0	e26	e8.0
23	18	21	e15	e14	e27	e35	e32	e145	e50	e9.0	e26	e5.0
24	18	22	e14	e14	e26	e38	e44	e145	e45	e9.0	e27	e4.5
25	18	19	e14	e17	e22	e38	e60	e130	e45	e9.0	e29	e4.5
26	18	18	e16	e17	e24	e35	e60	e125	e56	e7.0	e29	e4.0
27	19	19	e15	e15	e35	e35	e50	e120	e42	e7.0	e31	e6.0
28	19	17	e14	e14	e33	e35	e38	e125	e48	e8.0	e32	e7.0
29	19	17	e15	e13	e33	e35	e30	e130	e36	e12	e33	e6.0
30	19	17	e17	e13	---	e36	e60	e120	e37	e15	e32	e6.0
31	19	---	e16	e15	---	e35	---	e110	---	e14	e38	---
TOTAL	572	570	488	468	655	1014	1112	4734	2414	547.0	777.0	634.0
MEAN	18.5	19.0	15.7	15.1	22.6	32.7	37.1	153	80.5	17.6	25.1	21.1
MAX	21	23	27	18	35	45	60	1000	180	34	38	33
MIN	16	17	12	12	14	22	27	20	36	7.0	9.0	4.0
AC-FT	1130	1130	968	928	1300	2010	2210	9390	4790	1080	1540	1260

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2000, BY WATER YEAR (WY)*

MEAN	17.8	18.8	17.3	18.7	26.3	39.5	52.9	103	91.7	30.9	13.8	14.0
MAX	27.8	27.9	33.6	32.3	57.8	115	106	324	375	92.6	38.5	29.1
(WY)	1945	1946	1943	1984	1948	1947	1994	1984	1944	1944	1944	1944
MIN	5.73	10.8	10.1	6.97	9.93	17.5	20.3	31.1	16.6	5.91	1.86	2.24
(WY)	1955	1986	1991	1950	1940	1950	1992	1985	1985	1985	1940	1940

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1939 - 2000*	
ANNUAL TOTAL	15123.6		13985.0			
ANNUAL MEAN	41.4		38.2		37.0	
HIGHEST ANNUAL MEAN					76.8	1944
LOWEST ANNUAL MEAN					17.4	1940
HIGHEST DAILY MEAN	340	May 29	1000	May 18	1120	Jun 20 1947
LOWEST DAILY MEAN	8.4	Aug 11	4.0	Sep 26	.20	Aug 1 1956
ANNUAL SEVEN-DAY MINIMUM	11	Aug 8	5.3	Sep 23	.46	Aug 11 1956
INSTANTANEOUS PEAK FLOW					a1150	Jun 4 1944
INSTANTANEOUS PEAK STAGE					6.96	May 9 1995
INSTANTANEOUS LOW FLOW					.00	Aug 3 1935
ANNUAL RUNOFF (AC-FT)	30000		27740		26840	
10 PERCENT EXCEEDS	102		80		79	
50 PERCENT EXCEEDS	19		23		22	
90 PERCENT EXCEEDS	13		14		9.0	

*--During period of operation (1939-56, 1983 to current year).
a--Gage height, 4.83 ft, from rating curve extended above 400 ft^3/s.
e--Estimated.

06290500 LITTLE BIGHORN RIVER BELOW PASS CREEK, NEAR WYOLA, MT

LOCATION.--Lat 45°10'38", long 107°23'36", in W1/2SW$^1/_4$ sec.35, T.7 S., R.35 E., Big Horn County, Hydrologic Unit 10080016, on right bank 3.5 mi north of Wyola, 6 mi downstream from Pass Creek, and at river mile 92.3.
DRAINAGE AREA.--428 mi^2.
PERIOD OF RECORD.--March 1939 to December 1958, August 1959 to September 1975, October 1976 to current year. Prior to October 1940, published as Little Horn River below Pass Creek, near Wyola.
REVISED RECORDS.--WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 3,600 ft above sea level, from topographic map.
REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 8,300 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128	116	116	113	e95	111	103	171	818	267	115	66
2	135	110	116	110	e110	109	116	183	724	261	112	66
3	130	116	115	e105	e100	112	117	206	682	256	106	65
4	127	119	113	e110	e90	116	115	233	664	246	103	64
5	127	119	109	e120	e100	122	119	267	635	239	103	63
6	126	118	115	e110	e105	126	117	297	607	231	104	63
7	123	117	113	e110	107	125	115	328	586	219	104	63
8	121	118	108	e110	112	134	108	331	563	205	104	65
9	119	119	e105	e105	124	120	105	292	540	200	101	64
10	119	119	e120	e110	123	115	104	263	577	192	100	63
11	120	119	e110	e115	e100	116	102	245	533	176	97	63
12	120	118	114	e110	e105	116	101	237	483	171	92	63
13	125	117	115	e100	e100	111	103	238	466	162	89	62
14	121	115	e105	e110	e100	110	108	234	445	151	88	61
15	121	115	e110	e115	103	110	113	228	429	143	87	60
16	121	115	115	113	101	105	111	242	460	136	86	60
17	119	117	123	110	100	105	108	646	435	133	83	60
18	125	131	119	e110	98	105	108	1560	391	141	81	60
19	126	125	120	107	e90	104	147	996	365	151	81	61
20	123	121	126	e100	e95	104	137	801	385	154	81	67
21	122	120	125	e105	97	100	124	700	386	155	79	72
22	123	113	124	106	106	101	126	701	351	147	79	82
23	123	109	118	e100	107	102	133	764	333	140	77	87
24	121	107	116	e95	109	107	139	824	324	137	75	88
25	120	116	116	e95	113	107	146	820	321	132	73	89
26	120	120	114	e105	107	106	146	875	321	130	70	90
27	120	123	113	106	101	105	141	875	305	130	69	90
28	121	119	113	104	111	105	138	851	301	127	68	89
29	120	117	112	e90	115	108	160	936	286	124	68	88
30	118	117	113	e90	---	108	174	916	277	119	66	88
31	119	---	113	e85	---	106	---	838	---	115	65	---
TOTAL	3803	3525	3564	3274	3024	3431	3684	17098	13993	5290	2706	2122
MEAN	123	118	115	106	104	111	123	552	466	171	87.3	70.7
MAX	135	131	126	120	124	134	174	1560	818	267	115	90
MIN	118	107	105	85	90	100	101	171	277	115	65	60
AC-FT	7540	6990	7070	6490	6000	6810	7310	33910	27760	10490	5370	4210

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2000, BY WATER YEAR (WY)*

MEAN	123	120	107	106	117	141	186	473	654	239	115	111
MAX	163	153	162	165	232	281	327	1318	1395	758	237	186
(WY)	1942	1971	1965	1975	1972	1972	1970	1978	1975	1975	1975	1968
MIN	79.4	77.3	68.1	55.4	70.9	76.9	63.1	146	167	57.4	23.8	54.9
(WY)	1957	1986	1949	1950	1989	1961	1961	1953	1985	1960	1961	1960

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1940 - 2000*	
ANNUAL TOTAL	79756		65514			
ANNUAL MEAN	219		179		208	
HIGHEST ANNUAL MEAN					381	1978
LOWEST ANNUAL MEAN					92.7	1961
HIGHEST DAILY MEAN	1110	May 30	1560	May 18	6090	May 19 1978
LOWEST DAILY MEAN	85	Jan 24	60	Sep 15-18	13	Aug 4 1961
ANNUAL SEVEN-DAY MINIMUM	94	Aug 27	61	Sep 13	14	Aug 3 1961
INSTANTANEOUS PEAK FLOW			1800	May 18	a8010	May 19 1978
INSTANTANEOUS PEAK STAGE			5.54	May 18	10.02	May 19 1978
INSTANTANEOUS LOW FLOW					b12	Aug 5 1961
ANNUAL RUNOFF (AC-FT)	158200		129900		150600	
10 PERCENT EXCEEDS	480		355		439	
50 PERCENT EXCEEDS	120		116		126	
90 PERCENT EXCEEDS	101		83		80	

*--During period of operation (1940-58, 1960-75, 1977 to current year).
a--From rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flows.
b--Gage height, 0.89 ft.
e--Estimated.

06291500 LODGE GRASS CREEK ABOVE WILLOW CREEK DIVERSION, NEAR WYOLA, MT

LOCATION.--Lat 45°07'39", long 107°36'01", in $SE^1/_4NE^1/_4NE^1/_4$ sec.24, T.8 S., R.33 E., Big Horn County, Hydrologic Unit 10080016, on left bank 0.2 mi upstream from Willow Creek diversion canal, 1.1 mi downstream from Spring Creek, 10 mi west of Wyola, 17 mi southwest of Lodge Grass, and at river mile 43.0.

DRAINAGE AREA.--80.7 mi^2.

PERIOD OF RECORD.--March 1939 to September 1974, October 1982 to current year.

REVISED RECORDS.--WSP 1559: 1944-47. WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,170 ft above sea level, from topographic map. March 1939 to September 1974 recording gage 0.1 mi upstream at different datum. Flows are equivalent.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 400 acres upstream of station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e19	19	19	21	e16	21	14	34	242	86	32	e25
2	e19	18	19	20	24	21	20	39	219	83	33	e24
3	e19	20	18	19	e17	21	19	48	221	80	e32	e24
4	e19	20	18	19	e15	22	22	56	224	77	e32	e23
5	e20	20	17	20	e17	23	18	72	219	74	e33	e24
6	e20	20	19	20	20	23	16	79	218	70	e33	e24
7	e20	19	19	20	20	22	16	92	212	67	e31	e24
8	e19	19	16	19	26	25	14	79	207	64	e30	e23
9	e18	19	16	19	27	21	13	68	202	62	e30	e23
10	e19	20	18	e16	24	22	12	65	204	60	e30	e23
11	e19	20	17	e17	19	22	11	63	182	58	e29	e22
12	e19	19	18	e16	20	21	11	63	167	56	e29	e22
13	19	19	20	19	19	20	12	60	158	53	e29	e22
14	18	19	17	20	19	20	14	56	142	51	e28	e21
15	19	19	16	20	20	20	14	55	145	49	e28	e21
16	19	19	19	19	19	18	14	59	137	49	e28	e21
17	20	19	22	20	18	18	15	252	126	51	e28	e21
18	21	24	19	19	18	16	17	292	119	55	e27	e21
19	21	20	20	19	17	17	32	224	118	54	e27	e23
20	20	20	19	20	19	16	21	200	121	51	e27	e24
21	20	19	19	19	21	14	20	185	114	47	e27	e23
22	20	18	19	19	22	16	19	196	110	45	e26	e22
23	22	18	21	20	22	16	22	227	109	42	e26	e22
24	23	17	20	19	21	16	24	240	111	41	e26	e22
25	22	18	20	18	23	15	23	242	114	40	e25	e23
26	21	20	20	20	21	16	22	254	105	39	e25	e22
27	21	20	20	19	21	15	22	251	102	39	e26	e21
28	21	19	20	18	23	15	23	266	98	38	e25	e21
29	21	19	20	e16	23	18	31	289	93	37	e25	e21
30	20	19	20	e15	---	16	35	261	89	36	e25	e21
31	20	---	20	e14	---	15	---	241	---	34	e26	---
TOTAL	618	579	585	579	591	581	566	4608	4628	1688	878	673
MEAN	19.9	19.3	18.9	18.7	20.4	18.7	18.9	149	154	54.5	28.3	22.4
MAX	23	24	22	21	27	25	35	292	242	86	33	25
MIN	18	17	16	14	15	14	11	34	89	34	25	21
AC-FT	1230	1150	1160	1150	1170	1150	1120	9140	9180	3350	1740	1330

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2000, BY WATER YEAR (WY)*

MEAN	21.3	19.1	16.9	16.7	17.0	20.4	32.4	120	201	64.9	28.7	22.9
MAX	35.5	28.0	25.0	30.3	32.0	36.9	71.4	257	445	176	50.7	40.1
(WY)	1942	1943	1969	1974	1972	1972	1994	1984	1964	1964	1968	1964
MIN	11.5	10.7	8.58	4.87	9.00	10.4	12.6	36.2	57.4	20.1	10.3	8.11
(WY)	1961	1961	1950	1950	1940	1961	1961	1950	1985	1961	1961	1960

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1940 - 2000*	
ANNUAL TOTAL	15991		16574			
ANNUAL MEAN	43.8		45.3		48.5	
HIGHEST ANNUAL MEAN					85.6	1970
LOWEST ANNUAL MEAN					21.8	1961
HIGHEST DAILY MEAN	250	Jun 8	292	May 18	908	Jun 9 1964
LOWEST DAILY MEAN	13	Jan 24	11	Apr 11,12	3.0	Jan 17 1950
ANNUAL SEVEN-DAY MINIMUM	15	Mar 4	12	Apr 8	4.0	Jan 25 1950
INSTANTANEOUS PEAK FLOW			418	May 17	a1130	Jun 9 1964
INSTANTANEOUS PEAK STAGE			4.32	May 17	6.14	Jun 9 1964
ANNUAL RUNOFF (AC-FT)	31720		32870		35120	
10 PERCENT EXCEEDS	110		114		118	
50 PERCENT EXCEEDS	21		21		22	
90 PERCENT EXCEEDS	17		17		13	

*--During period of operation (1940-74, 1983 to current year).
a--From rating curve extended above 600 ft^3/s.
e--Estimated.

YELLOWSTONE RIVER BASIN

453350107263301 LITTLE BIGHORN RIVER AT LITTLE BIGHORN BATTLEFIELD, MT

LOCATION.--Lat 45°33'50", long 107°26'33", in NE$^1/_4$ NW$^1/_4$ NW$^1/_4$ sec.19, T 3 S., R. 35 E., Big Horn County, Hydrologic Unit 10080016, about 1 mile west of the Little Bighorn Battlefield and 1 mi southeast of Interstate 90 bridge near Crow Agency.

PERIOD OF RECORD.--July 1999 to current year (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
MAR 2000												
22...	0830	144	686	8.4	786	5.0	3.5	11.8	99	300	65	34
MAY												
19...	0930	1970	681	7.7	568	23.0	13.5	7.7	83	200	48	20

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
MAR 2000												
22...	2.1	1	45	241	2.9	.2	4.6	180	481	.65	187	<.01
MAY												
19...	4.7	1	36	155	1.6	.2	7.6	130	340	.46	1810	.02

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
MAR 2000											
22...	<.05	<.02	--	<.01	<.05	<.9	<3	<.1	<.1	E.6	1
MAY											
19...	.15	.12	.44	.01	2.0	E.8	10	<.1	.6	E.7	34

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAR 2000											
22...	16	198	<1	<1	15	19	2	11	11	4.3	97
MAY											
19...	12	31000	<1	33	2	1140	3	121	2660	14200	93

E--Estimated.

453354107262801 GROUND WATER WELL, 03S35E18DDCB01, AT LITTLE BIGHORN BATTLEFIELD, MT

LOCATION.--Lat 45°33'54", long 107°26'28", in SE$^1/_4$ SW$^1/_4$ SW$^1/_4$ sec.18, T 3 S., R. 35 E., Big Horn County, Hydrologic Unit 10080016, about .75 mi west of the Little Bighorn Battlefield and .75 upstream of Interstate 90 bridge near Crow Agency.

PERIOD OF RECORD.--July 1999 to present (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
MAY 2000										
18...	1300	662	7.4	1060	20.5	9.0	.5	5	240	55

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
MAY 2000									
18...	24	1.7	4	140	353	0.0	289	296	4.9

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)
MAY 2000									
18...	.3	13	270	689	.94	<.01	<.05	.08	.10

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
MAY 2000									
18...	.01	<.05	E.8	<.1	<1	230	<1	145	8

DATE	ALDRIN, TOTAL (UG/L) (39330)	ALPHA-HCH-D6 SUR SCD 1398 WATER UNFLTRD PERCENT (99777)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN I TOTAL (UG/L) (39388)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	ISODRIN SUR SCD 1398 WTR, UNFLTRD PERCENT (90571)	LINDANE TOTAL (UG/L) (39340)
MAY 2000										
18...	<.001	123	<.1	<.001	<.001	<.001	<.001	<.001	80	<.001

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	MIREX, TOTAL (UG/L) (39755)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	PCB, TOTAL (UG/L) (39516)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)
MAY 2000									
18...	<.01	<.01	<.001	<.001	<.001	<.1	<.1	<.1	<1

E--Estimated.

YELLOWSTONE RIVER BASIN

06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT

LOCATION.--Lat 45°44'09", long 107°33'24", in $SE^1/_4NE^1/_4NE^1/_4$ sec.19, T.1 S., R.34 E., Big Horn County, Hydrologic Unit 10080016, on left bank 50 ft downstream from bridge on Sarpy Road, 0.2 mi upstream of terminal wasteway of Agency Canal, 0.6 mi upstream from mouth, and 2.3 mi east of Hardin.

DRAINAGE AREA.--1,294 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1953 to current year.

REVISED RECORDS.--WDR MT-86-1: 1978.

GAGE.--Water-stage recorder. Datum of gage is 2,882.29 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Oct. 7, 1953, nonrecording gage at site 0.4 mi downstream. Oct. 7, 1953 to May 6, 1963, water-stage recorder at site 0.3 mi downstream. May 6, 1963 to Nov. 6, 1963, nonrecording gage at site 0.4 mi downstream. All at different datums. Nov. 7, 1963 to Aug. 15, 1976, water-stage recorder at site 35 ft downstream at present datum. Aug. 15, 1976 to Sept. 30, 1979, water-stage recorders were located on each bank downstream of Sarpy Road bridge and were used depending on control conditions.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow partly regulated by Willow Creek Reservoir (capacity 23,000 acre-ft). Diversions for irrigation of 20,980 acres upstream from station. Figures of discharge given herein include flow of terminal wasteway of Agency Canal. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146	147	154	e120	e100	232	163	200	1040	384	85	64
2	154	147	152	e110	e120	244	162	202	1000	365	78	84
3	152	147	150	e100	e110	239	161	200	892	360	71	93
4	163	144	145	e90	e120	241	174	209	813	362	62	61
5	168	154	145	e120	e150	257	172	226	790	350	49	40
6	169	167	140	e110	e150	278	171	261	751	276	48	34
7	165	163	e130	e120	e200	272	177	301	721	287	57	40
8	149	157	e120	e110	e200	258	176	331	680	284	62	52
9	143	152	e100	e110	e180	239	158	356	660	265	67	81
10	142	154	e120	e120	e180	215	148	330	675	251	60	76
11	139	154	e130	e130	e180	195	143	293	703	231	45	65
12	140	148	e130	e120	e190	190	134	269	638	202	38	50
13	139	150	e120	e100	e180	193	130	259	576	177	36	46
14	148	150	e100	e110	e180	182	131	253	535	158	28	46
15	171	147	e140	e120	e190	178	134	246	519	134	23	43
16	187	144	e130	e140	e180	176	142	230	495	134	20	37
17	194	143	e130	e130	e170	166	139	242	525	114	16	35
18	175	154	e130	e120	e160	169	136	475	501	94	16	26
19	181	161	e120	e120	e160	162	135	1530	448	112	15	8.7
20	193	176	e110	e130	e180	162	148	1550	421	171	19	18
21	198	168	e120	e140	e190	159	188	1080	455	197	29	42
22	185	160	e150	e130	195	160	174	912	485	185	35	95
23	180	154	e130	e110	188	152	169	844	464	146	33	124
24	182	137	e120	e110	202	149	175	900	449	138	35	136
25	172	140	e110	e120	202	148	179	983	440	127	38	135
26	158	153	e110	e130	218	164	182	995	439	102	44	109
27	159	161	e120	e130	233	166	186	1050	451	94	49	104
28	155	161	e110	e120	211	169	185	1050	423	121	39	102
29	151	160	e110	e110	204	162	176	1030	411	107	32	99
30	150	155	e120	e100	---	163	176	1120	392	110	37	93
31	149	---	e130	e95	---	165	---	1120	---	108	63	---
TOTAL	5057	4608	3926	3625	5123	6005	4824	19047	17792	6146	1329	2038.7
MEAN	163	154	127	117	177	194	161	614	593	198	42.9	68.0
MAX	198	176	154	140	233	278	188	1550	1040	384	85	136
MIN	139	137	100	90	100	148	130	200	392	94	15	8.7
AC-FT	10030	9140	7790	7190	10160	11910	9570	37780	35290	12190	2640	4040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2000, BY WATER YEAR (WY)

MEAN	158	156	138	144	207	321	322	632	855	277	123	132
MAX	276	248	223	366	610	987	748	2852	1981	1333	382	267
(WY)	1979	1979	1979	1975	1971	1972	1965	1978	1968	1975	1975	1978
MIN	67.6	84.6	68.7	71.6	70.3	92.7	54.8	71.9	117	8.50	2.46	19.1
(WY)	1957	1986	1962	1988	1989	1961	1961	1961	1961	1961	1961	1960

06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1954 - 2000	
ANNUAL TOTAL	104340		79520.7			
ANNUAL MEAN	286		217		289	
HIGHEST ANNUAL MEAN					676	1975
LOWEST ANNUAL MEAN					70.4	1961
HIGHEST DAILY MEAN	1740	Jun 8	1550	May 20	15800	May 20 1978
LOWEST DAILY MEAN	82	Jul 23	8.7	Sep 19	.30	Aug 5 1961
ANNUAL SEVEN-DAY MINIMUM	96	Aug 26	20	Aug 14	.40	Aug 3 1961
INSTANTANEOUS PEAK FLOW			1980	May 20	a22600	May 19 1978
INSTANTANEOUS PEAK STAGE			5.19	May 20	b11.78	Mar 20 1960
INSTANTANEOUS LOW FLOW					c.20	Aug 7 1961
ANNUAL RUNOFF (AC-FT)	207000		157700		209100	
10 PERCENT EXCEEDS	661		450		631	
50 PERCENT EXCEEDS	160		154		168	
90 PERCENT EXCEEDS	110		56		80	

a--Gage height, 11.20 ft.
b--Site and datum then in use, backwater from ice.
c--Result of discharge measurement.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970-79, 1987-89, May 1993 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1969 to September 1979.
WATER TEMPERATURE: October 1969 to September 1979.
SUSPENDED-SEDIMENT DISCHARGE: October 1969 to September 1977.

REMARKS.--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 (water years 1970-79): Maximum daily, 1,870 microsiemens per centimeter (µS/cm) at 25.0°C, Apr. 7, 1979; minimum daily, 377 µS/cm at 25.0°C, June 18, 1974.
WATER TEMPERATURE (water years 1970-79): Maximum, 30.0°C, Aug. 9, 12, 1971; minimum, 0.0°C, on many days during winter periods.
SEDIMENT CONCENTRATION (water years 1970-77): Maximum daily mean, 6,660 mg/L, Mar. 20, 1975; minimum daily mean, 7 mg/L, Oct. 29, 30, 1973, Sep 4, 1976.
SEDIMENT LOAD (water years 1970-77): Maximum daily, 58,000 tons, May 9, 1975; minimum daily, 1.9 tons, Sept. 4, 1976.

WATER-QUALITY DATA,WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
NOV 1999								
16...	0740	143	8.7	713	1.0	4.0	<.02	.05
JAN 2000								
05...	0900	E120	8.5	737	3.0	0.5	<.02	.14
MAR								
17...	1100	165	8.4	817	8.0	10.0	<.02	<.05
MAY								
22...	1245	914	8.3	531	25.0	19.5	<.02	.18
JUN								
20...	1130	409	8.4	477	20.5	16.5	<.02	<.05
AUG								
10...	1245	50	8.1	678	30.0	24.5	<.02	.12

YELLOWSTONE RIVER BASIN

06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
16...	<.01	<.01	<.05	K12	2600	47	18	82
JAN 2000								
05...	<.01	<.01	<.05	--	330	38	E12	81
MAR								
17...	<.01	<.01	E.03	20	K10	28	12	82
MAY								
22...	<.01	<.01	.34	540	800	1260	3100	52
JUN								
20...	<.01	<.01	E.04	K70	200	55	61	89
AUG								
10...	<.01	<.01	<.05	270	K160	33	4.5	90

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
MAR 2000												
17...	1100	320	70	36	2.3	1	56	235	4.0	.2	4.1	223
AUG												
10...	1245	270	57	31	2.8	1	40	191	4.0	.2	3.8	161

DATE	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELENIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
MAR 2000												
17...	.73	240	538	<3	<.1	<1	E1	470	E1	E1	E1	<31
AUG												
10...	.56	56	415	<3	<.1	<1	E1	210	<1	E1	E2	<31

E--Estimated.
K--Results based on non-ideal colony count.

YELLOWSTONE RIVER BASIN

06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MT

LOCATION.--Lat 46°07'29", long 107°28'06", in $SE^1/_4SE^1/_4NE^1/_4$ sec.3, T.4 N., R.34 E., Treasure County, Hydrologic Unit 10080015, on right bank 1.9 mi upstream from Tullock Creek, 3.6 mi southwest of Bighorn, 4.5 mi southeast of Custer, and at river mile 3.0.

DRAINAGE AREA.--22,414 mi^2. Area at site used Oct. 7, 1955, to Sept. 30, 1981, 22,885 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1981 to current year. Previously published as "06294700 Bighorn River at Bighorn, MT" 1956-81, and as "near Custer" 1945-55. Flows are equivalent at all sites.

GAGE.--Water-stage recorder. Elevation of gage is 2,700 ft above sea level, from topographic map. May 11, 1945 to Dec. 6, 1945, nonrecording gage, and Dec. 7, 1945 to Oct. 6, 1955, water-stage recorder 1.7 mi upstream at different datum. Oct. 7, 1955 to Sept. 30, 1981, at site 2.3 mi downstream at different datum.

REMARKS.--Water-discharge records good. Flow regulated by Bighorn Lake beginning November 1965 (usable capacity, 1,312,000 acre-ft). Major regulation prior to November 1965 by 14 reservoirs in Wyoming and 1 in Montana with combined usable capacity of about 1,400,000 acre-ft. Diversion for irrigation of about 445,200 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3870	3730	3330	2950	2780	2790	2770	2940	3500	2620	2560	2350
2	3990	3750	3240	2950	2790	2750	2780	2970	3420	2730	2560	2390
3	4000	3800	3050	2940	2830	2710	2770	2950	3350	2740	2730	2410
4	3990	3580	3060	2900	2820	2720	2770	2950	3250	2730	2800	2390
5	4010	3280	3040	2920	2830	2730	2780	2900	3200	2710	2750	2360
6	4040	3310	3060	2950	2850	2780	2760	2980	3160	2650	2750	2320
7	4080	3310	3070	2930	2840	2770	2790	3140	3090	2600	2740	2280
8	4080	3350	3030	2850	2860	2790	2770	3280	3060	2440	2690	2240
9	4140	3350	3020	2860	2900	2730	2750	3250	3050	2450	2640	2250
10	4190	3390	3050	2870	2930	2710	2740	3170	3290	2470	2500	2270
11	4230	3450	3100	2850	2760	2820	2730	3100	3360	2450	2620	2230
12	4250	3460	3150	2900	2740	3050	2740	3050	3270	2400	2760	2180
13	4300	3470	3170	2840	2720	3060	2750	3020	3160	e2400	2770	2100
14	4420	3510	3120	2830	2670	3040	2770	2960	3080	e2400	2740	2050
15	4210	3520	3140	2860	2660	2990	2740	2910	3130	e2400	2620	2040
16	3930	3540	3200	2870	2640	2980	2730	2720	3070	e2400	2440	2020
17	3930	3470	3210	2890	2630	2970	2740	2850	3080	e2400	2470	1990
18	3970	3450	3200	2900	2640	2960	2730	3370	3100	2480	2490	1960
19	4010	3340	3190	2900	2620	2970	2660	4370	3070	2510	2480	1960
20	4000	3200	3170	2870	2610	2960	2720	4690	3060	2510	2490	1960
21	4050	3200	3200	2850	2630	2950	2720	3940	2990	2560	2490	1990
22	4110	3200	3200	2880	2620	2920	2760	3570	2880	2600	2440	2250
23	4090	3210	3240	2890	2650	2940	2750	3270	2880	2580	2390	2240
24	4150	3230	3240	2880	2670	2950	2800	3190	2830	2540	2400	2200
25	4170	3290	3210	2840	2820	2940	2800	3220	2790	2510	2370	2190
26	4190	3360	3200	2820	2720	2950	2800	3230	2790	2530	2350	2150
27	4220	3310	3230	2860	2670	2950	2800	3360	2680	2530	2330	2130
28	3960	3310	3260	2860	2680	2950	2810	3380	2440	2550	2320	2090
29	3660	3330	3140	2850	2710	3020	2920	3390	2530	2580	2300	2060
30	3700	3330	2920	2840	---	2930	2970	3460	2590	2590	2310	2070
31	3690	---	2940	2810	---	2790	---	3540	---	2590	2330	---
TOTAL	125630	102030	97380	89210	79290	89570	83120	101120	91150	78650	78630	65120
MEAN	4053	3401	3141	2878	2734	2889	2771	3262	3038	2537	2536	2171
MAX	4420	3800	3330	2950	2930	3060	2970	4690	3500	2740	2800	2410
MIN	3660	3200	2920	2810	2610	2710	2660	2720	2440	2400	2300	1960
AC-FT	249200	202400	193200	176900	157300	177700	164900	200600	180800	156000	156000	129200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2000, BY WATER YEAR (WY)

MEAN	3309	3371	3203	3081	3251	3776	3625	4503	7176	5489	2908	2904
MAX	5546	5599	4907	5478	5314	6580	7881	9102	15180	19090	6972	4952
(WY)	1972	1974	1968	1968	1971	1972	1997	1947	1948	1967	1997	1973
MIN	1391	1223	1280	1382	1843	908	1063	1304	1050	707	868	1009
(WY)	1990	1978	1961	1961	1966	1966	1966	1966	1966	1960	1961	1966

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1945 - 2000	
ANNUAL TOTAL	1940800		1080900			
ANNUAL MEAN	5317		2953		3866	
HIGHEST ANNUAL MEAN					5594	1997
LOWEST ANNUAL MEAN					1623	1961
HIGHEST DAILY MEAN	12200	Jun 8	4690	May 20	50000	May 20 1978
LOWEST DAILY MEAN	2710	Sep 24	1960	Sep 18	400	Apr 4 1967
ANNUAL SEVEN-DAY MINIMUM	3050	Dec 3	1990	Sep 15	528	May 6 1961
INSTANTANEOUS PEAK FLOW			4870	May 20	a59200	May 20 1978
INSTANTANEOUS PEAK STAGE			3.16	May 20	14.15	May 20 1978
INSTANTANEOUS LOW FLOW					b275	Nov 15 1959
ANNUAL RUNOFF (AC-FT)	3850000		2144000		2800000	
10 PERCENT EXCEEDS	9360		3670		6500	
50 PERCENT EXCEEDS	4210		2870		3270	
90 PERCENT EXCEEDS	3240		2390		1860	

06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MT--Continued

	WATER YEARS 1946-1961*		WATER YEARS 1967 - 2000**	
ANNUAL MEAN	3358		3989	
HIGHEST ANNUAL MEAN	5501	1947	5594	1997
LOWEST ANNUAL MEAN	1623	1961	1999	1989
HIGHEST DAILY MEAN	25700	Jun 23 1947	50000	May 20 1978
LOWEST DAILY MEAN	462	May 12 1961	400	Apr 4 1967
ANNUAL SEVEN-DAY MINIMUM	528	May 6 1961	843	Nov 18 1977
INSTANTANEOUS PEAK FLOW	c26200	Jun 24 1647	59200	May 20 1978
INSTANTANEOUS PEAK STAGE	d10.65	Mar 20 1947	14.15	May 20 1978
INSTANTANEOUS LOW FLOW	b275	Nov 15 1959		
ANNUAL RUNOFF (AC-FT)	2578000		2890000	
10 PERCENT EXCEEDS	6200		6390	
50 PERCENT EXCEEDS	2810		3510	
90 PERCENT EXCEEDS	1500		2050	

*--Prior to construction of Yellowtail Dam.
**--After completion of Yellowtail Dam.
a--Gage height, 14.50 ft, at different site and datum.
b--About, result of freezeup.
c--Gage height, 8.79 ft, at different site and datum.
d--Backwater from ice.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1999 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April to September 2000 (seasonal record).

INSTRUMENTATION.--Temperature recorder installed Aug. 27, 1999.

REMARKS.--Minimum water temperature not available on Aug. 23 due to equipment problems. 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 (seasonal records): Maximum, 22.0°C, July 8, 9, 2000; minimum, 3.5°C, Apr. 3, 2000.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of collection (April to September), maximum, 22.0°C, several days in July; minimum, 3.5°C, Apr. 3.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT 1999								
05...	1105	4010	8.6	699	9.0	12.5	.41	.429
MAR 2000								
29...	0825	3040	8.4	796	6.5	7.0	.31	.084
JUN								
01...	1040	3510	8.5	620	12.5	10.0	.67	.256
JUL								
20...	0900	2490	8.6	687	22.0	15.0	.38	.216

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
05...	.003	<.01	.001	.029	24	260	92
MAR 2000							
29...	.001	.01	.003	.013	16	131	87
JUN							
01...	.004	.10	.031	.115	173	1640	97
JUL							
20...	.004	<.01	.001	.032	39	262	98

06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT 1999											
05...	1105	250	64	21	3.7	2	62	155	7.1	.4	8.6
JUN 2000											
01...	1040	250	63	22	2.7	1	49	188	6.3	.3	6.7

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
OCT 1999											
05...	200	458	.62	4950	E2	<.1	<1	3	2	2	E15
JUN 2000											
01...	190	451	.61	4270	3	E.09	3	8	10	6	23

E--Estimated.

WATER TEMPERATURE, DEGREES CELSIUS, APRIL TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1							6.5	5.0	6.0	13.5	9.5	11.5
2							6.5	4.5	5.5	14.5	12.0	13.0
3							6.5	3.5	5.0	15.0	12.0	13.5
4							9.0	5.0	7.0	15.0	12.5	14.0
5							9.5	7.5	8.5	14.0	13.0	13.5
6							9.0	6.5	8.0	14.0	12.0	12.5
7							7.0	5.5	6.0	12.0	9.5	11.0
8							8.5	5.0	6.5	11.5	9.0	10.0
9							9.5	6.5	8.0	11.5	9.0	10.5
10							9.0	7.0	7.5	13.0	10.0	11.5
11							9.0	6.5	7.5	12.0	10.0	11.0
12							10.0	7.5	9.0	10.0	8.0	8.5
13							9.0	7.0	8.5	9.0	6.5	8.0
14							7.0	5.0	5.5	11.5	7.5	9.5
15							6.0	4.5	5.0	14.0	11.0	12.5
16							8.0	4.5	6.5	14.5	12.5	13.5
17							9.5	7.0	8.5	13.0	11.5	12.5
18							9.5	8.5	9.0	12.5	10.0	11.5
19							10.5	8.0	9.0	13.5	11.0	12.5
20							11.5	8.0	10.0	14.5	12.0	13.0
21							13.0	9.5	11.0	14.5	13.0	14.0
22							14.0	11.0	12.5	15.5	13.5	14.5
23							13.0	11.5	12.0	16.5	14.0	15.0
24							11.5	9.5	10.5	16.0	13.5	14.5
25							10.5	8.0	9.0	16.0	13.5	15.0
26							12.0	9.0	10.5	15.0	13.5	14.5
27							13.0	10.0	11.5	16.0	13.0	14.5
28							13.5	10.5	12.0	15.5	14.5	15.0
29							12.5	10.0	11.0	14.5	13.0	14.0
30							12.0	9.0	10.5	13.0	11.5	12.0
31							---	---	---	12.0	11.0	11.5
MONTH							14.0	3.5	8.5	16.5	6.5	12.5

YELLOWSTONE RIVER BASIN

06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, APRIL TO SEPTEMBER 2000--Continued

	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.5	10.0	11.0	20.0	18.0	18.5	20.0	17.5	18.5	16.0	12.5	14.0
2	15.0	11.0	13.0	19.5	16.5	18.0	19.5	18.5	19.0	17.0	14.0	15.5
3	16.0	13.5	15.0	20.5	17.0	18.5	20.0	17.5	19.0	17.5	14.5	16.0
4	17.0	14.5	15.5	20.0	17.0	18.5	19.5	18.0	18.5	17.5	15.0	16.0
5	17.5	14.5	16.0	20.0	16.0	18.0	19.0	16.5	18.0	18.5	15.5	16.5
6	19.0	15.5	17.5	21.0	17.0	19.0	19.0	16.0	17.5	16.5	14.0	15.5
7	20.0	16.5	18.5	21.5	18.0	19.5	18.5	16.0	17.5	15.5	12.5	14.0
8	19.0	17.0	18.0	22.0	18.5	20.0	19.5	16.0	17.5	16.0	12.0	14.0
9	18.0	16.5	17.5	22.0	19.0	20.5	18.5	16.5	17.5	15.0	13.0	14.0
10	17.5	15.0	16.0	21.0	17.5	19.5	18.0	16.5	17.0	13.0	11.5	12.5
11	17.5	15.0	16.0	21.5	15.0	19.0	19.0	16.5	17.5	15.5	11.5	13.5
12	16.5	15.0	15.5	21.5	17.5	20.0	19.5	16.0	18.0	16.5	13.0	14.5
13	15.0	12.5	13.5	20.5	18.5	19.0	19.5	16.5	18.0	17.0	14.0	15.5
14	14.0	11.5	13.0	18.5	18.5	18.5	19.0	16.5	18.0	17.5	14.0	15.5
15	14.0	13.0	13.5	18.5	18.0	18.0	19.0	15.5	17.5	18.0	14.0	16.0
16	14.0	12.0	13.0	18.0	17.5	18.0	18.5	16.5	17.5	18.5	15.0	16.5
17	14.5	12.0	13.0	17.5	17.0	17.5	18.0	15.5	17.0	18.0	15.5	16.0
18	16.5	12.5	14.5	18.0	16.0	17.0	18.0	15.5	16.5	15.5	13.5	14.5
19	16.0	14.0	15.0	17.0	15.0	16.0	18.0	15.5	16.5	14.0	11.5	13.0
20	14.5	12.5	13.5	19.0	15.0	17.0	17.0	15.0	16.0	13.0	9.5	11.5
21	16.5	12.5	14.5	21.0	17.0	19.0	17.0	14.0	15.5	11.0	8.0	9.5
22	17.0	15.0	16.0	21.0	17.5	19.5	17.6	14.6	16.0	8.0	5.5	6.5
23	18.0	15.5	17.0	21.5	18.5	20.0	18.0	---	16.0	7.5	5.0	6.0
24	19.0	16.0	17.5	21.0	18.0	19.5	17.5	15.9	16.5	9.0	5.5	7.0
25	18.0	16.0	17.0	20.0	17.5	18.5	19.0	16.0	17.5	10.5	7.0	8.5
26	16.5	13.5	15.5	20.5	17.5	19.0	19.0	16.5	18.0	12.0	8.5	10.0
27	18.0	15.0	16.5	20.5	18.0	19.5	19.0	16.0	17.5	13.0	9.5	11.0
28	19.5	15.5	17.5	20.5	17.5	19.0	18.0	15.0	16.5	13.0	10.0	11.5
29	19.5	16.5	18.0	20.5	18.0	19.5	18.0	14.5	16.0	13.0	11.0	12.0
30	20.5	17.0	19.0	20.5	18.0	19.5	16.5	13.0	15.0	12.5	11.5	12.0
31	---	---	---	19.5	18.0	19.0	14.5	12.0	13.0	---	---	---
MONTH	20.5	10.0	15.5	22.0	15.0	19.0	20.0	---	17.0	18.5	5.0	13.0

YELLOWSTONE RIVER BASIN

06295000 YELLOWSTONE RIVER AT FORSYTH, MT

(National water-quality assessment program)

LOCATION.--Lat 46°15'58", long 106°41'24", in $NE^1/_4NW^1/_4NW^1/_4$ sec.23, T.6 N., R.40 E., Rosebud County, Hydrologic Unit 10100001, on right bank 0.3 mi downstream from U.S. Highway 12 bridge, at intake for Forsyth water supply, at Forsyth, and at river mile 238.2.
DRAINAGE AREA.--40,339 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 16, 1921 to September 30, 1923 (no winter records), October 1977 to current year. Miscellaneous discharge measurements were made in 1974 to 1976 and are available in files of Helena district office.
GAGE.--Water-stage recorder. Datum of gage is 2,504.62 ft above sea level, from nearby elevation determined by City of Forsyth. July 1921 to March 1922, nonrecording gage on discontinued highway bridge 10 ft downstream from gage at different datum. March 1922 to September 1923, nonrecording gage on discontinued highway bridge 10 ft downstream from gage at datum 2 ft higher.
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 838,000 acres upstream from station. Flow regulated to some extent by Bighorn Lake, usable capacity, 1,356,000 acre-ft, on Bighorn River. Small diversion dam about 4,200 ft downstream from station. Bureau of Reclamation satellite telemeter at station.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1918 reached a stage of about 20 ft, datum used in 1921, information from local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7520	7380	6760	5800	5330	5260	5210	9910	30700	15700	6390	4510
2	7900	7400	6700	5790	4680	5420	5120	11500	28200	15600	6230	4600
3	8130	7430	6460	5780	4810	5320	5040	10000	24900	16100	6140	4690
4	8190	7460	6350	e5500	e4900	5230	5000	11100	23300	16300	6080	4760
5	8140	7040	6330	e5500	e5100	5190	4970	13100	25300	15900	5930	4720
6	8060	6910	6160	e5400	5320	5190	4920	15100	27000	15100	5800	4720
7	8000	7040	6020	5310	5290	5240	4930	15400	28100	13700	5930	4670
8	7980	7070	5970	5420	5490	5230	5100	14500	29000	12500	5910	4690
9	7890	7020	5970	5330	5440	5370	5300	13200	30500	11900	5830	4570
10	7940	6970	5860	5230	5480	5510	5240	11800	30600	12100	5480	4600
11	7920	6920	5850	e5000	5410	5360	5090	10700	28700	11800	5200	4620
12	7950	6960	5880	e5000	5390	5480	5030	10200	25300	11200	5200	4560
13	8000	6950	6110	e5000	5380	5550	5140	9700	22100	10700	5150	4540
14	8130	6920	6090	5010	e5000	5540	5280	9220	21300	10100	5120	4430
15	8110	6930	6170	4900	e5000	5450	5430	8550	23100	9780	4990	4320
16	7790	6900	6280	e5000	e4900	5330	5850	7730	20600	9280	4680	4190
17	7610	6910	6150	e5500	e5000	5320	6330	6990	21700	9050	4440	4120
18	7720	6920	6290	e5800	e5000	5220	6360	7310	22000	8970	4310	4030
19	7860	6870	6370	e5500	e5000	5180	6150	13000	19400	9060	4270	4000
20	7930	6600	6210	e5500	5080	5190	6290	14400	17900	9230	4250	4080
21	8030	6490	6170	e5500	4810	5190	6390	13500	19700	9450	4280	4310
22	8070	6490	6240	e5400	4890	5150	6350	13900	21100	9410	4280	4660
23	7990	6450	6380	e5400	5050	5140	6450	15200	18600	9050	4240	5240
24	7980	6440	6410	e5400	5070	5010	7510	17500	18500	8440	4180	5660
25	8020	6310	6330	e5400	5280	5060	8780	21200	19100	7990	4190	5860
26	8010	6550	6230	e5400	5500	5110	9550	e23000	20100	7590	4190	5930
27	7980	6480	6150	5450	5310	5150	8930	e25000	20700	7300	4210	5940
28	8000	6630	6070	5540	5150	5120	8120	e27000	18900	7050	4210	5790
29	7480	6780	6130	5420	5110	5180	7650	e26000	17200	6830	4180	5650
30	7490	6820	5960	5290	---	5410	7780	e30000	16400	6680	4200	5640
31	7450	---	5810	5310	---	5180	---	e33000	---	6570	4350	---
TOTAL	245270	206040	191860	166780	149170	163280	185290	468710	690000	330430	153840	144100
MEAN	7912	6868	6189	5380	5144	5267	6176	15120	23000	10660	4963	4803
MAX	8190	7460	6760	5800	5500	5550	9550	33000	30700	16300	6390	5940
MIN	7450	6310	5810	4900	4680	5010	4920	6990	16400	6570	4180	4000
AC-FT	486500	408700	380600	330800	295900	323900	367500	929700	1369000	655400	305100	285800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2000, BY WATER YEAR (WY)

MEAN	7732	7191	6295	5884	6339	7335	7993	17760	30560	19060	8521	7256
MAX	10720	10490	8927	7796	10210	15120	13270	27850	63710	34430	17570	11320
(WY)	1983	1983	1983	1983	1997	1979	1997	1997	1997	1982	1997	1978
MIN	3881	4413	4062	3945	3579	4309	4220	11920	14690	6135	3175	3939
(WY)	1989	1989	1989	1989	1989	1991	1981	1985	1987	1988	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1978 - 2000	
ANNUAL TOTAL	4472930		3094770			
ANNUAL MEAN	12250		8456		11000	
HIGHEST ANNUAL MEAN					17590	1997
LOWEST ANNUAL MEAN					7398	1988
HIGHEST DAILY MEAN	51400	Jun 24	33000	May 31	97000	May 21 1978
LOWEST DAILY MEAN	5300	Apr 20	4000	Sep 19	1400	Nov 23 1977
ANNUAL SEVEN-DAY MINIMUM	5680	Apr 15	4150	Sep 15	2500	Feb 20 1993
INSTANTANEOUS PEAK FLOW			a35200	May 31	106000	May 21 1978
INSTANTANEOUS PEAK STAGE			a6.96	May 31	14.53	May 21 1978
INSTANTANEOUS LOW FLOW					1400	Nov 23 1977
ANNUAL RUNOFF (AC-FT)	8872000		6138000		7972000	
10 PERCENT EXCEEDS	28800		17300		23600	
50 PERCENT EXCEEDS	7890		6170		7470	
90 PERCENT EXCEEDS	6380		4710		4800	

a--Observed, but may have been higher during period of no gage-height record, May 26-31.
e--Estimated.

YELLOWSTONE RIVER BASIN

06295000 YELLOWSTONE RIVER AT FORSYTH, MT--Continued

(National water-quality assessment program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to 1982, January 1999 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District Office. Samples collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
OCT 1999											
07...	0930	7970	--	8.4	541	16.0	13.5	--	--	9.9	--
NOV											
08...	1130	7060	690	8.4	582	23.0	8.5	--	--	1.4	13
DEC											
02...	1030	6710	690	7.8	611	8.0	5.0	--	--	11.7	101
JAN 2000											
10...	1230	5410	690	8.5	635	1.0	0.5	--	--	14.4	111
FEB											
23...	1100	5010	692	8.3	640	12.0	3.5	--	--	14.7	122
MAR											
22...	1100	5170	700	8.5	651	17.0	6.0	--	--	11.4	100
APR											
06...	1300	4940	683	8.3	651	10.0	9.0	--	--	10.6	103
MAY											
24...	0900	16800	697	8.2	316	15.0	20.0	--	--	7.9	96
31...	1000	E32000	693	8.3	196	16.0	13.0	--	--	9.8	102
JUN											
10...	1100	30600	693	8.0	191	20.0	17.0	--	--	8.6	98
26...	1200	19900	702	8.3	267	19.0	19.0	57	--	10.2	120
JUL											
07...	1100	13800	694	8.6	309	24.0	22.5	K15	--	8.2	105
AUG											
16...	1500	4550	700	8.9	636	27.5	22.0	21	--	9.5	119
SEP											
25...	1700	5870	698	8.30	635	18.0	10.0	K33	K25	--	--

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	TUR-BID-ITY (NTU) (00076)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)
OCT 1999											
07...	190	--	50	17	2.9	1	42	--	--	--	144
NOV											
08...	200	--	51	18	2.7	1	42	175	3	148	152
DEC											
02...	220	--	58	19	3.0	1	46	--	0	--	156
JAN 2000											
10...	210	--	53	19	3.1	1	45	171	2	144	158
FEB											
23...	220	4.0	56	19	3.5	1	47	172	6	151	157
MAR											
22...	230	8.0	56	20	3.3	1	49	179	6	156	165
APR											
06...	230	9.8	57	21	3.3	1	50	--	--	--	160
MAY											
24...	110	130	28	9.4	2.2	.8	19	110	0	90	90
31...	69	--	19	5.3	1.5	.5	10	76	0	62	62
JUN											
10...	63	120	17	5.2	1.2	.6	11	71	0	58	59
26...	91	25	23	8.0	1.6	.8	17	92	0	76	77
JUL											
07...	110	18	27	9.5	2.0	.9	21	99	1	82	90
AUG											
16...	190	7.0	47	18	3.5	2	48	134	5	118	149
SEP											
25...	220	--	53	20	3.5	1	50	194	0	159	157

E--Estimated.
K--Results based on non-ideal colony count.

YELLOWSTONE RIVER BASIN

06295000 YELLOWSTONE RIVER AT FORSYTH, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)
OCT 1999											
07...	6.8	.4	9.2	130	353	347	.48	7600	<.01	.17	<.02
NOV											
08...	7.4	.5	8.8	140	378	363	.51	7200	<.01	.17	<.02
DEC											
02...	8.4	.5	12	160	396	400	.54	7170	<.01	.35	<.02
JAN 2000											
10...	8.5	.5	12	160	415	387	.56	6060	<.01	.38	<.02
FEB											
23...	8.4	.5	9.9	160	421	399	.57	5690	<.01	.33	.02
MAR											
22...	9.3	.5	9.5	170	435	419	.59	6070	<.01	.22	<.02
APR											
06...	9.1	.5	8.0	170	430	419	.58	5740	<.01	.07	<.02
MAY											
24...	4.6	.3	13	60	198	192	.27	8980	<.01	.16	.02
31...	2.3	.2	11	29	129	117	.18	--	<.01	.18	.03
JUN											
10...	2.7	.2	11	31	127	114	.17	10500	<.01	.10	<.02
26...	3.5	.3	11	50	164	161	.22	8810	<.01	.07	<.02
JUL											
07...	6.0	.3	7.5	65	201	187	.27	7490	<.01	<.05	<.02
AUG											
16...	8.4	.5	4.4	170	414	372	.56	5090	<.01	<.05	<.02
SEP											
25...	8.8	.5	7.3	160	413	402	.56	6550	<.01	.24	<.02

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BORON, DISSOLVED (UG/L AS B) (01020)
OCT 1999											
07...	.2	.3	<.01	.006	.056	--	--	--	--	--	--
NOV											
08...	.1	.3	<.01	<.006	.024	1	<1	6	48	<1	--
DEC											
02...	.2	.2	<.01	E.004	.028	--	--	--	--	--	--
JAN 2000											
10...	E.08	.2	<.01	.006	.018	4	<1	7	45	<1	--
FEB											
23...	.2	.2	<.01	.007	.023	6	<1	7	45	<1	159
MAR											
22...	.2	.3	<.01	.007	.019	2	<1	10	46	<1	159
APR											
06...	.2	.4	<.01	.006	.036	9	<1	8	44	<1	159
MAY											
24...	.2	1.8	.02	.023	.66	15	<1	5	31	<1	78
31...	.2	1.0	.02	.021	.59	18	<1	4	22	<1	36
JUN											
10...	.2	.6	.02	.023	.28	15	<1	3	19	<1	54
26...	.2	.3	<.01	.014	.090	12	<1	4	26	<1	71
JUL											
07...	.1	.3	<.01	.006	.061	16	<1	6	30	<1	86
AUG											
16...	.2	.4	<.01	E.005	.034	2	<1	6	46	<1	149
SEP											
25...	.2	.4	<.01	E.004	.039	1	<1	6	48	<1	154

E--Estimated.

YELLOWSTONE RIVER BASIN

06295000 YELLOWSTONE RIVER AT FORSYTH, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)
OCT 1999											
07...	--	--	--	--	<10	--	--	3	--	--	--
NOV											
08...	<1	<.8	<1	1	E5	<1	--	5	<.2	2	2
DEC											
02...	--	--	--	--	<10	--	--	4	--	--	--
JAN 2000											
10...	<1	<.8	<1	1	<10	<1	--	6	--	2	4
FEB											
23...	<1	<1	<1	1	<10	<1	43	11	--	2	<1
MAR											
22...	<1	<1	<1	2	<10	<1	47	8	--	2	<1
APR											
06...	<1	<.8	<1	1	<10	<1	47	10	--	2	3
MAY											
24...	<1	<.8	<1	1	E8	<1	20	1	--	1	1
31...	<1	<.8	<1	<1	14	<1	12	2	--	<1	1
JUN											
10...	<1	<.8	<1	<1	E7	<1	12	1	--	<1	2
26...	<1	<.8	<1	<1	E6	<1	20	2	--	<1	<1
JUL											
07...	<1	<.8	<1	2	<10	<1	21	2	--	1	2
AUG											
16...	<1	E.7	<1	2	<10	<1	38	3	--	2	<1
SEP											
25...	<1	E.6	<1	1	<10	<1	41	3	--	2	1

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	THAL-LIUM, DIS-SOLVED (UG/L AS TL) (01057)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT 1999											
07...	--	--	--	--	--	--	--	2.9	.3	58	1250
NOV											
08...	E1	<1	--	--	4	--	<1	2.6	.3	14	267
DEC											
02...	--	--	--	--	--	--	--	3.3	.3	31	562
JAN 2000											
10...	<2	<1	--	--	4	--	1	2.4	.3	9	131
FEB											
23...	1	<1	542	<.9	4	1.7	2	2.6	.2	8	108
MAR											
22...	1	<1	574	<.9	4	<1.0	6	2.7	.3	15	209
APR											
06...	1	<1	582	<.9	4	1.2	3	2.9	.4	24	320
MAY											
24...	E.5	<1	252	<.9	1	2.1	3	3.6	2.2	260	11800
31...	<.7	<1	147	<.9	<1	2.2	3	3.1	2.4	660	--
JUN											
10...	<.7	<1	132	<.9	<1	1.7	2	2.5	1.9	280	23100
26...	<.7	<1	206	<.9	1	1.4	3	2.4	.6	84	4510
JUL											
07...	E.6	<1	264	<.9	2	2.1	3	2.5	.3	52	1940
AUG											
16...	.9	<1	515	<.9	4	2.2	3	3.3	.9	18	221
SEP											
25...	1	<1	532	<.9	4	1.4	1	2.8	.4	--	--

E--Estimated.

06295000 YELLOWSTONE RIVER AT FORSYTH, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DISSOLVED (UG/L) (34253)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
OCT 1999										
07...	0930	<.003	<.002	<.002	<.002	.004	<.002	<.002	<.003	<.003
NOV										
08...	1130	<.003	<.002	<.002	<.002	.006	<.002	<.002	<.003	<.003
DEC										
02...	1030	<.003	<.002	<.002	<.002	.006	<.002	<.002	<.003	<.003
JAN 2000										
10...	1230	<.003	<.002	<.002	<.002	<.005	<.002	<.002	<.003	<.003
FEB										
23...	1100	<.003	<.002	<.002	<.002	<.005	<.002	<.002	<.003	<.003
MAR										
22...	1100	<.003	<.002	<.002	<.002	<.005	<.002	<.002	<.003	<.003
APR										
06...	1300	<.003	<.002	<.002	<.002	.008	<.002	<.002	<.003	<.003
MAY										
24...	0900	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003
31...	1000	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	E.034
JUN										
10...	1100	<.003	<.002	<.002	<.002	.005	<.002	<.002	<.003	<.020
26...	1200	<.003	<.002	<.002	<.002	.009	<.002	<.002	<.003	<.003
JUL										
07...	1100	<.003	<.002	<.002	<.002	E.004	<.002	<.002	<.003	<.003
AUG										
16...	1500	<.003	<.002	<.002	<.002	E.004	<.002	<.002	<.003	<.013
SEP										
25...	1700	<.003	<.002	<.002	<.002	E.003	<.002	<.002	<.003	<.003

DATE	CHLORPYRIFOS DISSOLVED (UG/L) (38933)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DIAZINON, DISSOLVED (UG/L) (39572)	DIELDRIN DISSOLVED (UG/L) (39381)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
OCT 1999										
07...	<.004	<.004	<.002	E.002	95	<.002	<.001	<.017	<.002	<.004
NOV										
08...	<.004	<.004	<.002	E.004	108	<.002	<.001	<.017	<.002	<.004
DEC										
02...	<.004	<.004	<.002	<.002	109	<.002	<.001	<.017	<.002	<.004
JAN 2000										
10...	<.004	<.004	<.002	E.004	96	<.002	<.001	<.017	<.060	<.004
FEB										
23...	<.004	<.004	<.002	<.002	88	<.002	<.001	<.017	<.002	<.004
MAR										
22...	<.004	<.004	<.002	<.002	97	<.002	<.001	<.017	<.002	<.004
APR										
06...	<.004	<.004	<.002	<.002	116	<.002	<.001	<.017	<.002	<.004
MAY										
24...	<.004	<.004	<.002	<.002	98	<.002	<.001	<.017	<.002	<.004
31...	<.004	<.004	<.002	<.002	97	<.002	<.001	<.017	<.010	<.004
JUN										
10...	<.004	<.004	<.002	<.002	101	<.002	<.001	<.017	.016	<.004
26...	<.004	<.004	<.002	E.003	103	<.002	<.001	<.017	E.002	<.004
JUL										
07...	<.004	<.004	<.002	E.004	98	<.002	<.001	<.017	<.002	<.004
AUG										
16...	<.004	<.004	<.002	E.005	106	<.002	<.001	<.017	<.002	<.004
SEP										
25...	<.004	.012	<.002	<.002	116	<.002	<.001	<.017	<.00	<.004

E--Estimated.

YELLOWSTONE RIVER BASIN

06295000 YELLOWSTONE RIVER AT FORSYTH, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)
OCT 1999										
07...	<.003	<.003	95	<.004	<.002	<.005	<.001	<.006	<.002	<.004
NOV										
08...	<.003	<.003	98	<.004	<.002	<.005	<.001	<.006	<.005	<.004
DEC										
02...	<.003	<.003	100	<.004	<.002	<.005	<.001	<.006	<.002	<.004
JAN 2000										
10...	<.003	<.003	91	<.004	<.002	<.005	<.001	<.006	<.005	<.004
FEB										
23...	<.003	<.003	74	<.004	<.002	<.005	<.001	<.006	<.002	<.004
MAR										
22...	<.003	<.003	76	<.004	<.002	<.005	<.001	<.006	<.002	<.004
APR										
06...	<.003	<.003	100	<.004	<.002	<.005	<.001	<.006	<.002	<.004
MAY										
24...	<.003	<.003	100	<.004	<.002	<.005	<.001	<.006	<.002	<.004
31...	<.003	<.003	86	<.004	<.002	<.005	<.001	<.006	<.002	<.004
JUN										
10...	<.003	<.003	84	<.004	<.002	<.005	<.001	<.006	<.004	<.004
26...	<.003	<.003	98	<.004	<.002	<.005	<.001	<.006	.007	<.004
JUL										
07...	<.003	<.003	96	<.004	<.002	<.005	<.001	<.006	E.003	<.004
AUG										
16...	<.003	<.003	94	<.004	<.002	<.005	<.001	<.006	E.004	<.004
SEP										
25...	<.003	<.003	108	<.004	<.002	<.005	<.001	<.006	<.002	<.004

DATE	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT 1999										
07...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
NOV										
08...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	E.007	<.003
DEC										
02...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
JAN 2000										
10...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
FEB										
23...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
MAR										
22...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
APR										
06...	<.004	<.003	E.002	<.004	<.004	<.004	<.005	<.002	<.018	<.003
MAY										
24...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
31...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
JUN										
10...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
26...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
JUL										
07...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
AUG										
16...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
SEP										
25...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	E.006	<.003

E--Estimated.

06295000 YELLOWSTONE RIVER AT FORSYTH, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	PROPACHLOR, WATER, DISS, REC (UG/L) (04024)	PROPANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PROPARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SIMAZINE, WATER, DISS, REC (UG/L) (04035)	TEBUTHIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TERBACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TERBUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIOBENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIALLATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRIFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT 1999										
07...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002
NOV										
08...	<.007	<.004	--	<.005	E.002	<.007	<.013	<.002	<.001	<.002
DEC										
02...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002
JAN 2000										
10...	<.007	<.004	<.013	<.005	E.005	<.007	<.013	<.002	E.003	<.002
FEB										
23...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002
MAR										
22...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002
APR										
06...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002
MAY										
24...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	.008	<.002
31...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	.007	<.002
JUN										
10...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	.005	<.002
26...	<.007	<.004	--	<.005	<.010	<.007	<.013	<.002	E.003	<.002
JUL										
07...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002
AUG										
16...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.005	<.002
SEP										
25...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002

E--Estimated.

06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT

LOCATION.--Lat 45°21'40", long 106°59'23", in NE$^1/_4$NE$^1/_4$SW$^1/_4$ sec.36, T.5 S., R.38 E., Big Horn County, Hydrologic Unit 10100003, on right bank, 0.2 mi upstream from Dry Creek, 0.5 mi north of reservation boundary, 1.9 mi downstream from Cache Creek, 2.0 mi north of Kirby, and at river mile 179.6.

DRAINAGE AREA.-- 123 mi^2.

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,780 ft above sea level, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Numerous small diversions for irrigation upstream from station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of 231 ft^3/s was measured May 9, 1978, at site 1.9 mi upstream from present site. Flow was known to be higher during flood of May 19-21, 1978, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	2.4	4.0	e4.7	e5.0	e5.8	9.9	7.2	e5.0	e2.2	4.5	.51
2	4.0	2.5	4.2	e4.5	e4.5	e5.8	11	6.8	e5.4	e2.1	4.5	.54
3	4.0	2.7	4.1	e4.5	e4.2	e5.8	11	6.6	e5.4	e2.0	4.9	.48
4	3.4	3.1	e3.5	e4.7	e4.5	e6.0	11	6.4	e5.0	e2.0	4.3	.46
5	3.2	3.4	e3.5	4.9	e5.0	e6.4	12	5.9	e5.0	e1.9	3.3	.56
6	3.2	3.4	e3.7	e5.0	e5.2	e6.4	12	5.7	e4.7	e1.9	3.6	.72
7	3.0	3.4	e3.8	e4.7	e6.0	e6.4	12	6.0	e4.5	e1.9	2.8	.87
8	2.9	3.5	e3.9	e5.0	e5.0	e6.0	13	6.7	e4.2	e2.0	2.9	1.1
9	2.9	3.3	4.2	e5.2	e5.0	e7.0	14	6.7	e3.8	e2.1	3.3	1.2
10	2.8	3.2	4.1	e5.2	e5.0	e8.0	13	7.1	e3.6	2.1	2.1	1.3
11	2.8	3.3	4.2	5.3	e4.2	e9.0	12	7.2	e3.8	3.1	1.7	1.3
12	2.8	3.2	4.2	e5.0	e4.0	9.5	11	7.0	e3.5	4.5	1.4	1.3
13	2.8	3.3	4.3	e5.2	e4.2	9.2	11	6.7	e3.3	4.9	1.1	1.7
14	2.7	3.2	4.3	5.9	e4.5	8.6	11	6.4	e3.3	4.7	.93	1.8
15	2.8	3.3	4.4	5.9	e4.4	8.1	10	6.4	e3.3	4.7	.74	1.6
16	2.9	3.4	4.5	6.1	e4.4	7.8	11	6.2	e3.5	5.1	.64	1.6
17	2.8	3.3	4.6	e5.4	e4.8	7.7	11	7.5	e3.5	5.5	.33	1.8
18	2.8	3.8	4.5	e5.2	e4.8	7.4	9.0	10	e3.5	6.2	.00	2.0
19	2.9	4.2	4.5	e5.1	e5.0	7.4	8.1	13	e3.3	6.4	.01	2.6
20	2.8	3.9	4.5	e5.6	e5.8	7.1	7.7	14	e3.0	6.5	.01	3.2
21	2.7	3.9	4.7	e5.6	e5.8	6.9	7.2	13	e2.8	6.3	.01	3.3
22	2.6	3.8	4.9	e5.2	e5.6	6.9	7.0	10	e2.7	6.2	.01	3.5
23	2.6	3.7	5.1	e5.0	e6.0	7.1	7.2	8.6	e2.6	6.0	.02	3.5
24	2.6	3.7	e4.7	e5.2	e6.0	7.6	7.4	7.6	e2.6	5.5	.05	4.3
25	2.6	4.0	e4.7	e5.6	e5.4	7.7	7.2	6.9	e2.7	5.3	.05	3.2
26	2.5	4.4	e4.7	e5.6	e6.0	8.5	7.1	6.7	e2.5	5.6	.07	3.1
27	2.6	4.4	e4.8	e5.2	e6.4	8.7	7.4	6.4	e2.4	5.1	.12	3.0
28	2.7	4.1	e4.8	e5.0	e6.0	8.7	7.2	5.8	e2.3	5.3	.15	3.0
29	2.7	4.1	e4.8	e4.8	e5.8	9.1	7.8	5.5	e2.3	5.5	.17	2.8
30	2.6	4.0	e5.0	e4.7	---	9.6	7.9	5.4	e2.3	4.5	.27	2.6
31	2.7	---	e4.8	e5.0	---	9.9	---	e5.4	---	4.3	.32	---
TOTAL	90.1	105.9	136.0	160.0	148.5	236.1	294.1	230.8	105.8	131.4	44.30	58.94
MEAN	2.91	3.53	4.39	5.16	5.12	7.62	9.80	7.45	3.53	4.24	1.43	1.96
MAX	4.0	4.4	5.1	6.1	6.4	9.9	14	14	5.4	6.5	4.9	4.3
MIN	2.5	2.4	3.5	4.5	4.0	5.8	7.0	5.4	2.3	1.9	.00	.46
AC-FT	179	210	270	317	295	468	583	458	210	261	88	117

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2000, BY WATER YEAR (WY)

MEAN	3.04	3.48	3.51	3.60	6.84	14.6	15.7	13.1	9.16	3.95	1.80	1.78
MAX	8.02	11.7	12.7	10.0	29.0	41.8	40.7	23.9	19.7	11.1	4.60	3.18
(WY)	1980	1980	1980	1980	1996	1996	1985	1984	1986	1993	1993	1984
MIN	.79	1.12	.99	1.17	1.71	3.05	3.00	4.39	3.35	.70	.27	.085
(WY)	1992	1993	1991	1991	1989	1991	1992	1992	1992	1989	1990	1990

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1980 - 2000	
ANNUAL TOTAL	2992.73		1741.94			
ANNUAL MEAN	8.20		4.76		6.70*	
HIGHEST ANNUAL MEAN					11.7	1996
LOWEST ANNUAL MEAN					2.70	1992
HIGHEST DAILY MEAN	55	Apr 23	14	Apr 9	170	Mar 13 1996
LOWEST DAILY MEAN	.31	Aug 26	.00	Aug 18	.00	Sep 16 1990
ANNUAL SEVEN-DAY MINIMUM	.37	Aug 22	.02	Aug 18	.02	Aug 18 2000
INSTANTANEOUS PEAK FLOW			a15	Apr 9	c219	Mar 17 1996
INSTANTANEOUS PEAK STAGE			b3.63	Mar 5	b8.28	Mar 13 1996
ANNUAL RUNOFF (AC-FT)	5940		3460		4850	
10 PERCENT EXCEEDS	20		8.0		15	
50 PERCENT EXCEEDS	4.4		4.5		3.8	
90 PERCENT EXCEEDS	2.0		1.8		1.2	

*--Median of yearly mean discharge, 5.99 ft^3/s, 4,340 acre-ft/yr.
a--Gage height, 2.98 ft.
b--Backwater from ice.
c--Gage height, 6.30 ft.
e--Estimated.

06295250 ROSEBUD CREEK NEAR COLSTRIP, MT

LOCATION.--Lat 45°46'03", long 106°34'10", in $SE^1/_4SW^1/_4NE^1/_4$ sec.8, T.1 S., R.42 E., Rosebud County, Hydrologic Unit 10100003, on left bank 10 ft downstream from bridge on FAS Route 315, 1.5 mi downstream from Lee Coulee, 8.4 mi southeast of Colstrip, and at river mile 85.6.
DRAINAGE AREA.--799 mi^2.
PERIOD OF RECORD.--October 1974 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 3,000 ft above sea level, from topographic map.
REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 800 acres upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	6.6	12	e10	e15	e22	13	15	16	6.5	2.0	.01
2	.11	6.9	11	e9.0	e15	e25	13	14	17	6.3	1.9	.00
3	1.1	6.8	e10	e8.0	e15	e25	12	14	17	6.2	1.5	.00
4	2.5	7.2	e9.0	e9.0	e15	e25	12	15	16	6.2	1.0	.00
5	2.4	6.9	e8.0	11	e15	e25	12	14	16	6.1	1.4	.00
6	3.3	7.3	e9.0	10	e15	e25	12	15	16	6.2	1.3	.00
7	4.6	8.0	e8.0	11	e15	e25	13	15	15	7.0	1.1	.00
8	5.6	7.7	e8.0	11	e12	e30	12	15	13	7.3	.78	.00
9	5.4	7.5	e8.0	11	e10	34	13	15	12	7.7	.59	.00
10	5.5	7.5	9.4	10	e7.0	33	13	16	12	8.3	.47	.00
11	5.2	7.3	8.7	e9.0	e8.0	32	12	16	12	8.8	.36	.00
12	4.5	7.8	9.2	e8.0	e9.0	29	12	15	11	9.7	.28	.00
13	4.5	8.1	9.2	e9.0	e9.0	31	12	15	10	10	.20	.00
14	4.0	8.2	9.3	e10	e9.0	25	12	15	10	11	.15	.00
15	4.8	8.6	9.4	e10	e8.0	25	13	15	10	11	.13	.00
16	5.5	8.4	9.3	e9.0	e10	25	13	15	11	9.5	.16	.00
17	5.0	8.4	9.6	e8.0	e12	23	12	16	11	8.5	.10	.00
18	4.4	8.9	10	e9.0	e15	25	12	16	11	7.9	.08	.00
19	3.9	8.8	e9.0	e10	e15	22	11	17	10	6.9	.09	.00
20	3.5	8.9	e8.0	e10	e15	21	12	16	9.3	9.7	.05	.00
21	3.9	8.5	e9.0	e10	e16	20	11	16	9.1	4.9	.04	.00
22	4.7	8.6	9.9	e10	e16	19	11	16	8.4	4.4	.03	.00
23	4.8	7.2	10	e10	e18	19	12	16	7.8	4.2	.03	.00
24	5.1	e6.0	10	e11	e18	19	13	17	7.9	4.2	.02	.00
25	4.9	e5.0	11	e12	e20	19	15	18	7.9	3.9	.02	.00
26	5.6	e6.0	9.9	e12	e20	18	17	18	7.6	3.6	.02	.00
27	6.2	e7.0	10	e12	e20	17	16	19	7.3	3.6	.01	.00
28	6.7	e9.0	10	e12	e20	15	16	18	6.7	3.1	.02	.00
29	6.2	10	e10	e12	e20	14	16	17	6.8	2.7	.01	.00
30	6.5	12	e10	e12	---	14	15	16	6.7	2.3	.01	.00
31	6.6	---	e10	e15	---	14	---	16	---	1.9	.01	---
TOTAL	137.12	235.1	293.9	320.0	412.0	715	388	491	331.5	199.6	13.86	0.01
MEAN	4.42	7.84	9.48	10.3	14.2	23.1	12.9	15.8	11.1	6.44	.45	.000
MAX	6.7	12	12	15	20	34	17	19	17	11	2.0	.01
MIN	.11	5.0	8.0	8.0	7.0	14	11	14	6.7	1.9	.01	.00
AC-FT	272	466	583	635	817	1420	770	974	658	396	27	.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2000, BY WATER YEAR (WY)

MEAN	10.4	13.2	13.3	15.8	28.8	48.0	42.9	55.0	38.9	19.8	9.93	7.32
MAX	47.5	46.2	46.0	70.3	105	164	185	306	212	104	57.1	55.8
(WY)	1979	1979	1979	1975	1996	1994	1979	1975	1978	1975	1975	1978
MIN	.000	1.84	2.47	3.56	5.04	7.42	8.88	7.20	4.44	2.07	.026	.000
(WY)	1991	1991	1991	1992	1989	1991	1992	1992	1992	1989	1990	1983

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1975 - 2000	
ANNUAL TOTAL	6832.01		3537.09			
ANNUAL MEAN	18.7		9.66		d25.2	
HIGHEST ANNUAL MEAN					95.9	1975
LOWEST ANNUAL MEAN					4.78	1992
HIGHEST DAILY MEAN	100	Jan 16	34	Mar 9	668	Mar 3 1994
LOWEST DAILY MEAN	.11	Oct 1	a.00	Sep 2	a.00	Aug 31 1981
ANNUAL SEVEN-DAY MINIMUM	.64	Sep 27	a.00	Sep 2	.00	Aug 31 1981
INSTANTANEOUS PEAK FLOW			b42	Mar 9	f754	Mar 2 1994
INSTANTANEOUS PEAK STAGE			c2.68	Mar 7	9.03	May 21 1978
INSTANTANEOUS LOW FLOW					.15	Sep 13 1994
ANNUAL RUNOFF (AC-FT)	13550		7020		18290	
10 PERCENT EXCEEDS	44		18		52	
50 PERCENT EXCEEDS	12		9.3		13	
90 PERCENT EXCEEDS	3.0		.02		2.1	

a--No flow many days most years.
b--Gage height, 1.88 ft.
c--Backwater from ice.
d--Median of yearly mean discharge 17.4 ft^3/s, 12,600 acre-ft/yr.
e--Estimated.
f--Gage height, 8.42 ft.

YELLOWSTONE RIVER BASIN

06296003 ROSEBUD CREEK AT MOUTH, NEAR ROSEBUD, MT

LOCATION.--Lat 46°15'53", long 106°28'30", in $SW^1/_4NW^1/_4NE^1/_4$ sec.21, T.6 N., R.42 E., Rosebud County, Hydrologic Unit 10100003, on left bank 0.4 mi upstream from bridge on Interstate Highway 94, 0.8 mi upstream from mouth, and 1.6 mi southwest of Rosebud.

DRAINAGE AREA.--1,302 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,480 ft above sea level, from topographic map.

REMARKS.--Water-discharge records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 2,000 acres upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	1.1	9.4	e8.5	e15	e17	15	1.8	1.0	.85	.01	.28
2	.22	1.9	11	e8.5	e15	e20	14	6.1	3.5	.64	.00	.30
3	.24	3.2	8.2	e9.0	e13	e20	14	4.9	1.1	.64	.00	.24
4	.28	2.6	9.0	e9.5	e13	e20	14	1.2	1.5	.64	.00	.16
5	.28	2.2	7.2	e10	e13	e25	14	1.1	.99	.89	.00	.14
6	.30	2.1	8.8	e11	e14	e25	13	1.1	.00	1.2	.00	.16
7	.29	2.2	7.5	e11	e15	e25	13	.70	.00	1.6	.00	.17
8	.25	2.5	6.7	e11	e15	e22	12	.48	.00	1.8	.00	.13
9	.25	4.2	7.5	e11	e14	e25	13	.35	.23	2.1	.00	.08
10	.25	2.9	8.2	e11	e8.0	e25	13	.35	54	2.5	.00	.10
11	.25	2.7	7.6	e10	e9.0	e28	13	.28	20	2.8	.00	.16
12	.27	3.4	7.3	e10	e7.0	e30	12	.29	4.1	4.0	.00	.16
13	.26	3.2	7.9	e12	e10	32	13	.30	1.3	5.2	.00	.14
14	.26	3.1	7.1	e12	e9.0	31	12	.29	.67	6.8	.00	.10
15	.29	3.0	8.1	e12	e10	29	12	.25	.83	6.0	.00	.05
16	.29	3.1	8.2	e12	e9.0	30	12	.34	15	3.6	.00	.04
17	.29	3.2	8.1	e13	e10	26	12	.51	6.7	2.6	.00	.03
18	2.6	4.2	8.4	e13	e11	26	11	.44	4.9	2.1	.00	.01
19	.47	4.6	e5.0	e13	e12	26	11	.16	1.7	1.5	.00	.10
20	.39	5.1	e7.0	e13	e13	24	4.6	.04	2.4	5.3	.00	.17
21	.42	5.0	e9.0	e13	e14	24	2.6	.01	1.3	.63	.00	.23
22	.39	5.2	10	e12	e17	22	3.2	.01	2.7	.47	.00	.37
23	.39	5.1	9.5	e13	e20	21	3.6	.01	3.1	.42	.00	.29
24	.39	e3.5	9.5	e13	e20	20	3.6	.16	2.1	.43	.00	.25
25	.43	e5.0	10	e14	e20	19	1.8	.14	2.6	.34	.00	6.5
26	.47	e5.5	9.9	e15	e18	19	.80	.39	5.4	.28	.00	2.7
27	.52	e6.0	9.8	e14	e20	18	.87	.97	3.6	.28	.00	1.0
28	.53	6.3	9.8	e13	e19	19	.74	.93	1.2	.18	.00	.82
29	.61	8.3	10	e13	e18	19	.46	.74	1.2	.08	.00	.64
30	.58	8.0	9.8	e13	---	18	.30	1.3	1.2	.03	.13	.34
31	.66	---	e9.0	e15	---	16	---	.67	---	.00	.22	---
TOTAL	13.36	118.4	264.5	368.5	401.0	721	265.57	26.31	144.32	55.90	0.36	15.86
MEAN	.43	3.95	8.53	11.9	13.8	23.3	8.85	.85	4.81	1.80	.012	.53
MAX	2.6	8.3	11	15	20	32	15	6.1	54	6.8	.22	6.5
MIN	.22	1.1	5.0	8.5	7.0	16	.30	.01	.00	.00	.00	.01
AC-FT	26	235	525	731	795	1430	527	52	286	111	.7	31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2000, BY WATER YEAR (WY)

MEAN	9.03	10.2	10.9	20.6	41.2	77.0	46.3	65.4	43.8	19.2	8.64	9.16
MAX	45.7	47.6	47.8	159	187	428	180	478	286	133	47.8	77.3
(WY)	1979	1979	1979	1999	1997	1994	1979	1978	1978	1993	1975	1978
MIN	.037	.19	.089	.13	1.27	2.47	7.80	.85	.48	.20	.001	.000
(WY)	1991	1991	1993	1991	1993	1991	1984	2000	1988	1988	1988	1990

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1975 - 2000	
ANNUAL TOTAL	11683.90		2395.08			
ANNUAL MEAN	32.0		6.54		a30.1	
HIGHEST ANNUAL MEAN					113	1978
LOWEST ANNUAL MEAN					2.57	1992
HIGHEST DAILY MEAN	500	Jan 12	54	Jun 10	2800	Mar 4 1994
LOWEST DAILY MEAN	.15	Sep 23	.00	Jun 6	b.00	Aug 28 1984
ANNUAL SEVEN-DAY MINIMUM	.21	Sep 21	.00	Aug 2	.00	Aug 5 1988
INSTANTANEOUS PEAK FLOW			115	Jun 10	3700	Mar 4 1994
INSTANTANEOUS PEAK STAGE			2.34	Jun 10	7.70	Mar 4 1994
INSTANTANEOUS LOW FLOW					b.00	Aug 28 1984
ANNUAL RUNOFF (AC-FT)	23180		4750		21790	
10 PERCENT EXCEEDS	62		18		65	
50 PERCENT EXCEEDS	9.8		3.1		9.3	
90 PERCENT EXCEEDS	.30		.01		.24	

a--Median of yearly mean discharge, 23.8 ft^3/s, 17,200 acre-ft/yr.
b--No flow many days in August and September 1984, 1990-92, 2000.
e--Estimated.

06296003 ROSEBUD CREEK AT MOUTH, NEAR ROSEBUD, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-86, 1988-93, May 1999 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
05...	0830	2.6	8.3	3770	2.0	2.5	.001
MAR 2000							
28...	1215	19	8.4	1740	17.0	8.5	.001
MAY							
16...	1125	.18	8.9	2660	23.0	18.0	<.001
JUL							
05...	1100	1.1	8.5	2680	27.5	20.0	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
05...	.076	.87	<.001	.081	210	1.5	94
MAR 2000							
28...	.005	.55	.003	.077	206	11	99
MAY							
16...	.018	.65	.001	.063	240	.12	99
JUL							
05...	<.005	.59	.001	.029	54	.16	99

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1999											
05...	0830	730	93	120	13	9	550	610	19	.8	4.9
MAY 2000											
16...	1125	690	71	120	25	6	340	519	28	.7	5.1

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV 1999											
05...	1200	2390	3.25	16.8	E2	E.06	1.4	3	2	4	<31
MAY 2000											
16...	960	1870	2.54	.91	<3	<.1	3	11	3	7	16

E--Estimated.

YELLOWSTONE RIVER BASIN

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT

LOCATION.--Lat 45°00'32", long 106°50'08", in $NW^1/_4NW^1/_4NE^1/_4$ sec.33, T.9 S., R.40 E., Big Horn County, Hydrologic Unit 10090101, on left bank 1 mi north of Wyoming-Montana State line, 1.4 mi southeast of Decker, 1.6 mi upstream from Badger Creek, and at river mile 200.9.

DRAINAGE AREA.--1,477 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1960 to current year. Records published as "near Decker" May 1928 to September 1938, not equivalent owing to intervening drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,429.14 ft above sea level (levels by U.S. Army Corps of Engineers).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated by many small reservoirs in Wyoming, combined capacity, about 15,000 acre-ft. Diversions for irrigation of about 64,300 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	292	216	201	e160	e130	e160	195	428	2130	562	97	100
2	302	210	198	e140	e200	e160	196	458	1910	511	91	108
3	329	179	197	e75	e130	e160	209	557	1600	489	98	100
4	313	198	193	e75	e120	e160	203	623	1500	463	93	92
5	313	215	172	e75	e160	e160	200	752	1470	431	89	85
6	302	214	e160	e140	e190	e180	214	927	1410	407	94	83
7	290	210	e140	e140	e190	e200	218	920	1310	371	109	88
8	283	206	e140	e130	e200	e250	212	938	1180	326	105	96
9	267	202	e120	e140	e250	e250	196	778	1100	283	98	106
10	260	198	e140	e140	e160	e250	197	720	1150	260	101	102
11	252	195	e170	e140	e120	266	202	669	1100	247	99	101
12	254	197	e160	e130	e140	252	196	629	938	221	104	105
13	247	194	e130	e120	e140	248	196	589	842	207	106	107
14	240	185	e160	e140	e140	231	208	550	843	195	109	105
15	237	179	e160	e140	e140	232	224	536	787	186	107	96
16	236	180	e180	e160	e140	228	220	547	948	176	103	86
17	239	177	e170	e150	e140	209	212	870	911	172	106	90
18	226	188	e170	e140	e140	228	208	3210	784	167	110	84
19	251	209	e140	e150	e140	223	221	3200	672	193	108	88
20	243	198	e140	e150	e160	220	287	2610	684	206	113	104
21	241	193	e150	e160	e160	209	274	2250	725	208	115	150
22	242	192	e180	e180	e160	200	277	2080	660	203	117	185
23	239	164	e160	e160	e180	207	307	2100	597	180	112	228
24	230	e140	e150	e150	e180	210	360	2140	601	161	104	248
25	224	e160	e140	e160	e180	215	372	2170	680	145	100	246
26	224	175	e140	e180	e140	208	341	2140	701	135	90	253
27	224	204	e160	e180	e160	212	338	2120	684	121	86	244
28	221	206	e150	e160	e160	210	323	1960	672	113	95	225
29	220	194	e150	e130	e160	209	376	2040	643	106	95	209
30	218	190	e160	e120	---	207	497	2220	619	99	92	201
31	211	---	e170	e120	---	202	---	2170	---	99	94	---
TOTAL	7870	5768	4951	4335	4610	6556	7679	43901	29851	7643	3140	4115
MEAN	254	192	160	140	159	211	256	1416	995	247	101	137
MAX	329	216	201	180	250	266	497	3210	2130	562	117	253
MIN	211	140	120	75	120	160	195	428	597	99	86	83
AC-FT	15610	11440	9820	8600	9140	13000	15230	87080	59210	15160	6230	8160

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2000, BY WATER YEAR (WY)

MEAN	258	227	182	180	233	310	364	1178	1707	480	182	223
MAX	403	324	271	330	672	855	676	3283	3570	1674	475	615
(WY)	1969	1974	1976	1974	1971	1972	1977	1978	1978	1975	1968	1968
MIN	116	133	102	95.9	84.5	129	124	439	342	87.5	16.5	74.2
(WY)	1961	1989	1985	1985	1989	1961	1961	1989	1966	1961	1961	1966

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1961 - 2000	
ANNUAL TOTAL	174135		130419			
ANNUAL MEAN	477		356		460	
HIGHEST ANNUAL MEAN					862	1978
LOWEST ANNUAL MEAN					187	1961
HIGHEST DAILY MEAN	3270	Jun 7	3210	May 18	15400	May 19 1978
LOWEST DAILY MEAN	65	Aug 27	75	Jan 3	5.4	Aug 24 1961
ANNUAL SEVEN-DAY MINIMUM	74	Aug 23	93	Sep 3	7.2	Aug 22 1961
INSTANTANEOUS PEAK FLOW			3890	May 18	17500	May 12 1978
INSTANTANEOUS PEAK STAGE			7.87	May 18	14.25	May 12 1978
INSTANTANEOUS LOW FLOW					3.0	Aug 23 1961
ANNUAL RUNOFF (AC-FT)	345400		258700		333500	
10 PERCENT EXCEEDS	1290		780		1100	
50 PERCENT EXCEEDS	212		198		240	
90 PERCENT EXCEEDS	120		104		120	

e--Estimated.

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1965 to September 1976, November 1980 to December 1986, August to September 2000.
WATER TEMPERATURE: October 1965 to September 1976.
INSTRUMENTATION: Specific conductance probe installed Aug. 21, 2000.
REMARKS.--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 (water years 1966-76, 1981-87, 2000): Maximum daily, 1,490 microsiemens per centimeter (µS/cm) at 25.0°C, Aug. 12, 1966, Jan. 11, 1972; minimum daily, 192 microsiemens per centimeter (µS/cm) at 25.0°C, June 7, 1976.
WATER TEMPERATURE (water years 1966-76): Maximum, 30.5°C, July 16, 1966; minimum, 0.0°C on many days during winter.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: During period of collection; maximum daily, 817 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 6; minimum daily, 553 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 27.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 1999											
14...	1700	241	666	8.7	629	17.0	12.5	--	--	290	57
JAN 2000											
05...	0820	74	692	8.2	818	1.0	0.0	11.7	88	360	71
MAY											
15...	1115	519	670	7.9	348	25.5	12.5	11.8	126	130	29
JUN											
21...	0800	725	673	7.8	362	13.0	13.5	13.1	143	150	34
JUL											
25...	1335	146	679	8.3	587	32.0	24.0	9.8	131	210	44
AUG											
02...	0800	90	674	8.0	724	20.5	22.0	5.4	70	290	57
SEP											
12...	0750	103	675	8.4	819	10.5	14.5	7.2	80	370	71

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT 1999										
14...	35	2.5	.6	23	--	208	3.0	.2	4.6	120
JAN 2000										
05...	45	2.8	1	42	--	249	4.7	.3	8.8	180
MAY										
15...	13	1.1	.4	10	128	130	1.8	.1	7.8	58
JUN										
21...	17	1.5	.4	11	135	--	1.7	.1	8.0	51
JUL										
25...	25	2.2	.6	22	201	201	3.0	.2	3.1	110
AUG										
02...	36	1.6	.9	35	238	241	3.8	.3	6.9	150
SEP										
12...	46	4.2	1	42	260	264	4.4	.1	6.6	190

YELLOWSTONE RIVER BASIN

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT 1999										
14...	376	.51	245	--	--	--	--	--	--	--
JAN 2000										
05...	502	.68	100	--	--	--	--	--	--	--
MAY										
15...	199	.27	278	--	--	--	--	--	--	--
JUN										
21...	206	.28	403	.001	.034	.4	.007	.068	68	133
JUL										
25...	327	.44	129	.001	<.005	.3	.003	.023	78	31
AUG										
02...	432	.59	105	.001	.015	.4	.004	.027	64	16
SEP										
12...	518	.70	144	.014	.014	.4	<.001	.026	103	29

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												767
2												739
3												743
4												766
5												778
6												817
7												807
8												800
9												791
10												796
11												782
12												781
13												764
14												748
15												747
16												769
17												778
18												756
19												727
20												725
21												711
22											736	648
23											739	595
24											749	588
25											744	567
26											756	555
27											752	553
28											759	553
29											736	569
30											747	574
31											769	---
MEAN											749	710
MAX											769	817
MIN											736	553

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT

LOCATION.--Lat 45°08'29", long 106°46'15", in $SW^1/_4SE^1/_4SE^1/_4$ sec.12, T.8 S., R.40 E., Big Horn County, Hydrologic Unit 10090101, on left bank 0.5 mi downstream from Tongue River Dam, 4 mi upstream from Post Creek, 8 mi northeast of Decker, 16 mi southeast of Kirby, and at river mile 188.4.

DRAINAGE AREA.--1,770 mi^2.

PERIOD OF RECORD.--May 1939 to current year.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,344.40 ft above sea level (levels by Bureau of Reclamation). Prior to Aug. 5, 1975, at datum 10.00 ft lower.

REMARKS.--Records good. Flow regulated by Tongue River Reservoir (station number 06307000) and many small reservoirs, combined capacity, about 15,000 acre-ft. Diversion for irrigation of about 64,800 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	295	223	223	171	169	172	200	205	2010	582	404	388
2	295	223	223	171	171	172	182	204	1990	538	406	375
3	295	223	223	172	172	172	175	206	1880	508	407	361
4	295	223	223	170	172	172	175	210	1220	471	408	350
5	295	223	223	168	172	172	175	208	1070	445	409	337
6	301	223	223	167	172	172	175	208	1270	433	396	329
7	383	223	223	167	172	170	175	210	1320	430	384	325
8	333	223	220	168	172	177	175	210	1270	431	389	321
9	334	222	220	168	172	185	175	211	1200	433	394	317
10	333	220	220	169	172	195	175	232	1190	432	399	298
11	272	220	209	169	172	195	175	259	1100	429	405	284
12	227	220	201	169	172	195	175	266	1010	425	412	282
13	227	220	201	169	172	195	175	265	929	422	407	264
14	227	220	193	169	172	195	175	265	881	418	400	251
15	227	220	166	169	172	195	175	265	779	439	408	250
16	227	185	166	169	172	195	175	265	712	442	417	249
17	226	195	166	169	172	223	175	267	833	438	424	248
18	225	202	166	169	172	237	175	268	836	435	418	247
19	223	207	166	169	172	241	175	368	759	431	413	245
20	223	214	166	169	172	244	174	733	701	428	420	245
21	223	224	166	169	172	243	148	819	701	424	426	245
22	223	223	164	169	172	243	148	825	692	421	430	245
23	223	223	166	169	172	274	149	925	654	418	434	244
24	223	223	169	169	172	295	150	1060	655	416	437	245
25	223	224	169	169	172	295	180	1250	653	413	438	245
26	223	224	169	170	172	295	204	1460	617	411	437	247
27	223	223	169	169	172	295	203	1500	644	411	433	246
28	223	223	171	169	172	295	205	1780	643	409	428	247
29	223	223	172	169	172	295	205	1930	645	407	418	248
30	223	223	172	169	---	295	204	1960	607	407	409	248
31	223	---	171	169	---	254	---	2030	---	406	398	---
TOTAL	7916	6562	5879	5241	4984	6953	5327	20864	29471	13553	12808	8426
MEAN	255	219	190	169	172	224	178	673	982	437	413	281
MAX	383	224	223	172	172	295	205	2030	2010	582	438	388
MIN	223	185	164	167	169	170	148	204	607	406	384	244
AC-FT	15700	13020	11660	10400	9890	13790	10570	41380	58460	26880	25400	16710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2000, BY WATER YEAR (WY)

MEAN	277	259	191	175	182	228	370	926	1467	581	367	314
MAX	665	554	369	287	592	676	958	2714	3824	2083	767	775
(WY)	1946	1942	1979	1983	1971	1971	1965	1978	1944	1975	1975	1998
MIN	71.1	40.6	61.7	79.9	56.9	22.7	14.9	195	235	169	103	130
(WY)	1989	1976	1989	1961	1961	1961	1940	1961	1960	1956	1943	1953

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1939 - 2000	
ANNUAL TOTAL	166168		127984			
ANNUAL MEAN	455		350		446	
HIGHEST ANNUAL MEAN					853	1978
LOWEST ANNUAL MEAN					154	1961
HIGHEST DAILY MEAN	3360	Jun 11	2030	May 31	9580	May 20 1978
LOWEST DAILY MEAN	104	Mar 23	148	Apr 21,22	.50	Apr 17 1940
ANNUAL SEVEN-DAY MINIMUM	106	Mar 23	160	Apr 18	.50	Apr 17 1940
INSTANTANEOUS PEAK FLOW			2050	May 31	10800	May 20 1978
INSTANTANEOUS PEAK STAGE			14.10	May 31	a20.00	May 20 1978
INSTANTANEOUS LOW FLOW					b.00	Nov 12 1969
ANNUAL RUNOFF (AC-FT)	329600		253900		323400	
10 PERCENT EXCEEDS	1090		653		932	
50 PERCENT EXCEEDS	227		223		259	
90 PERCENT EXCEEDS	123		169		124	

a--From floodmark in well.
b--Results of dam closure.

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT

LOCATION.--Lat 45°24'42", long 106°27'26", in $SE^1/_4SW^1/_4SW^1/_4$ sec.8, T.5 S., R.43 E., Rosebud County, Hydrologic Unit 10090102, on left bank, 60 ft upstream from Bureau of Indian Affairs bridge, 0.2 mi east of Birney Day School, 5.5 mi downstream from Cook Creek, 6.5 mi northeast of Birney, and at river mile 144.3.

DRAINAGE AREA.--2,621 mi^2.

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,060 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Tongue River Reservoir (station number 06307000), and many small reservoirs in Wyoming (combined capacity, about 15,000 acre-ft). 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	293	212	218	e165	e165	e160	225	205	1900	544	392	339
2	291	212	218	e160	e160	e160	198	206	1860	522	383	340
3	291	215	217	e160	e145	e160	189	208	1800	606	393	336
4	287	215	215	e165	e160	e165	182	208	1640	467	413	333
5	286	218	e220	e160	e170	e175	181	210	879	426	387	337
6	287	215	e220	e160	e170	188	180	208	1020	398	381	342
7	302	215	e220	e155	e170	187	185	212	1140	390	376	348
8	367	215	e220	e160	e170	188	180	217	1150	388	369	342
9	326	215	e225	e165	e165	190	180	207	1080	387	365	339
10	326	212	e225	e165	e165	191	181	209	1060	391	363	343
11	326	215	e230	e160	e165	196	181	226	1040	393	355	329
12	265	215	e220	e150	e165	197	180	258	914	390	349	321
13	224	215	e210	e160	e160	196	180	263	884	389	353	318
14	224	212	e200	e160	e165	196	180	265	808	393	350	301
15	221	212	e200	e165	e165	195	183	266	795	405	346	293
16	220	212	e190	e160	e160	194	180	269	650	430	350	293
17	218	201	e190	e155	e155	195	180	282	691	432	344	287
18	218	202	e185	e155	e150	205	179	278	764	428	340	290
19	218	204	e180	e160	e155	211	179	266	727	416	332	294
20	217	206	e150	e165	e170	212	178	388	657	416	321	294
21	218	209	e160	e165	e170	212	181	712	624	425	325	291
22	215	217	e160	e160	e165	211	161	736	621	416	324	311
23	215	218	e160	e155	e165	211	158	747	618	417	324	310
24	215	232	e160	e155	e160	238	164	895	594	411	321	305
25	215	218	e165	e165	e150	254	158	960	589	407	308	303
26	214	225	e165	e165	e160	257	172	1270	582	402	308	302
27	213	220	e165	e160	e170	255	202	1350	543	398	314	301
28	215	218	e165	e155	e160	254	202	1450	573	399	314	300
29	218	218	e165	e150	e160	256	204	1790	575	395	313	298
30	212	218	e165	e150	---	254	206	1830	565	391	313	299
31	212	---	e165	e155	---	253	---	1910	---	396	326	---
TOTAL	7769	6431	5953	4940	4710	6416	5489	18501	27343	13068	10752	9439
MEAN	251	214	192	159	162	207	183	597	911	422	347	315
MAX	367	232	230	165	170	257	225	1910	1900	606	413	348
MIN	212	201	150	150	145	160	158	205	543	387	308	287
AC-FT	15410	12760	11810	9800	9340	12730	10890	36700	54230	25920	21330	18720

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2000, BY WATER YEAR (WY)

MEAN	250	226	185	185	205	236	292	697	1202	586	421	338
MAX	381	347	260	287	350	434	583	1769	2921	1269	676	694
(WY)	1996	1987	1987	1983	1983	1996	1996	1984	1984	1995	1997	1998
MIN	84.7	65.6	63.5	91.3	146	78.0	65.9	291	263	321	207	140
(WY)	1989	1989	1989	1989	1989	1987	1992	1983	1989	1994	1985	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1980 - 2000	
ANNUAL TOTAL	165254		120811			
ANNUAL MEAN	453		330		402	
HIGHEST ANNUAL MEAN					644	1984
LOWEST ANNUAL MEAN					204	1989
HIGHEST DAILY MEAN	3680	Jun 12	1910	May 31	3740	Jun 14 1984
LOWEST DAILY MEAN	113	Mar 30	145	Feb 3	28	Apr 6 1987
ANNUAL SEVEN-DAY MINIMUM	114	Mar 29	154	Jan 28	28	Apr 5 1987
INSTANTANEOUS PEAK FLOW			1970	May 31	a4520	Jun 14 1984
INSTANTANEOUS PEAK STAGE			4.52	May 31	b6.92	Feb 8 1996
ANNUAL RUNOFF (AC-FT)	327800		239600		291400	
10 PERCENT EXCEEDS	1030		590		737	
50 PERCENT EXCEEDS	240		218		275	
90 PERCENT EXCEEDS	130		160		140	

a--Gage height, 6.43 ft, from rating curve extended above 2,700 ft^3/s.
b--Backwater from ice.
e--Estimated.

YELLOWSTONE RIVER BASIN

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT

LOCATION (REVISED).--Lat 45°52'18", long 106°11'17", in $SE^1/_4SW^1/_4NE^1/_4$ sec.14, T.1N., R.44E., Rosebud County, Hydrologic Unit 10090102, on right bank downstream of county bridge, 22 mi north of Ashland, and at river mile 81.3.

DRAINAGE AREA.--3,948 mi^2, revised.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to September 20, 1984, July to September 2000.

GAGE--Water-stage recorder. Elevation of gage is 2,760 ft, from topographic map.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated by Tongue River Reservoir (station number 06307000), and many small reservoirs in Wyoming combined capacity, (about 15,000 acre-ft). Diversions for irrigation for about 73,000 acres above station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										e540	406	309
2										e500	407	312
3										e480	378	313
4										e450	378	317
5										e430	409	324
6										e400	385	332
7										e390	380	320
8										e380	360	323
9										e390	342	314
10										e400	336	e310
11										e380	338	e300
12										e360	330	e290
13										e360	313	e290
14										e360	320	e280
15										e350	300	e280
16										e360	297	e280
17										351	298	279
18										373	297	277
19										374	304	287
20										363	298	286
21										357	278	289
22										370	274	303
23										381	283	300
24										383	282	293
25										385	276	291
26										384	273	296
27										383	284	296
28										383	290	293
29										387	292	292
30										403	289	294
31										407	300	
TOTAL										12214	9997	8970
MEAN										394	322	299
MAX										540	409	332
MIN										350	273	277
AC-FT										24230	19830	17790

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2000, BY WATER YEAR (WY)*

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	289	230	207	235	248	321	360	941	1633	746	474	339
MAX	511	388	389	334	406	705	594	2502	3452	2261	915	436
(WY)	1974	1974	1979	1975	1983	1975	1975	1978	1978	1975	1975	1979
MIN	216	84.3	126	140	154	143	98.9	276	587	394	322	242
(WY)	1976	1976	1984	1982	1978	1981	1981	1983	1982	2000	2000	1974

SUMMARY STATISTICS	FOR 2000 WATER YEAR		WATER YEARS 1974 - 2000*	
ANNUAL MEAN			507	
HIGHEST ANNUAL MEAN			885	1975
LOWEST ANNUAL MEAN			337	1980
HIGHEST DAILY MEAN	e540	Jul 1	7600	May 22 1978
LOWEST DAILY MEAN	273	Aug 26	45	Nov 30 1975
ANNUAL SEVEN-DAY MINIMUM			53	Nov 25 1975
INSTANTANEOUS PEAK FLOW	a430	Aug 5	b8340	May 22 1978
INSTANTANEOUS PEAK STAGE	4.26	Aug 5	b9.96	May 22 1978
ANNUAL RUNOFF (AC-FT)			367000	
10 PERCENT EXCEEDS			1010	
50 PERCENT EXCEEDS			326	
90 PERCENT EXCEEDS			160	

*--During period of operation (1974-1984, July 2000 to September 2000).
a--Highest discharge during gage operation. Discharge was higher from measurement made on June 13, 2000, 1,060 ft^3/s, gage height, 5.66 ft. Discharge may have been higher during periods of no gage-height record, July 1-16.
b--Site and datum then in use.
e--Estimated.

YELLOWSTONE RIVER BASIN

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June to August 2000.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Aug. 25, 2000 to September 2000.
INSTRUMENTATION.--Conductance probe installed Aug. 23, 2000.
REMARKS.--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 daily, 582 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 10, 2000; minimum daily, 543 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 6, 7, 25, 2000.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,520 microsiemens per centimeter (µS/cm) at 25.0°C, May 24, 1981; minimum daily, 543 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 6, 7, 25.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
JUN 2000											
13...	1030	1060	685	8.2	400	16.0	18.5	6.75	80	160	34
26...	1115	744	694	8.8	393	19.0	19.5	6.60	79	160	34
JUL											
19...	1020	377	689	8.6	429	21.0	19.5	8.34	101	180	38
AUG											
16...	0945	298	693	8.6	469	27.5	21.0	7.90	98	220	48

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
JUN 2000											
13...	18	2.1	.6	19	130	134	2.0	.2	7.4	70	231
26...	17	2.1	.7	19	127	129	1.7	.2	5.7	70	225
JUL											
19...	20	2.6	.7	22	144	148	2.3	.2	5.8	81	258
AUG											
16...	24	3.2	.8	26	176	176	1.9	.3	9.1	97	315

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUN 2000											
13...	.31	662	.001	.047	--	.5	<.001	.10	127	363	74
26...	.31	452	.001	<.005	--	.4	<.001	.064	63	127	93
JUL											
19...	.35	262	.002	.009	--	.3	.003	.037	36	37	99
AUG											
16...	.43	253	--	<.005	.004	.4	.002	.032	28	23	98

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												555
2												549
3												561
4												568
5												553
6												543
7												543
8												547
9												553
10												582
11												568
12												564
13												575
14												568
15												566
16												572
17												567
18												569
19												566
20												571
21												573
22												564
23												561
24												558
25											555	543
26											553	547
27											548	547
28											546	546
29											553	544
30											563	555
31											565	---
MEAN											555	559
MAX											565	582
MIN											546	543

YELLOWSTONE RIVER BASIN

06308500 TONGUE RIVER AT MILES CITY, MT

LOCATION.--Lat 46°23'05", long 105°50'41", in $SE^1/_4SE^1/_4SE^1/_4$ sec. 4, T.7 N., R.47 E., Custer County, Hydrologic Unit 10090102, on right bank 1.5 mi south of Miles City and at river mile 2.3.

DRAINAGE AREA.--5,397 mi^2. Area at site used prior to Oct. 4, 1995, 5,379 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to April 1942, April 1946 to current year. Published as "near Miles City" April 1938 to April 1942. Not equivalent to records published as "near Miles City" May 1929 to October 1932. April 1946 to Oct. 4, 1995, at site 2.5 mi upstream. Flows at present site are equivalent with site operated from 1946. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,360 ft above sea level, from topographic map. April 1938 to April 1942, nonrecording gage at site 8 mi upstream at different datum. April 1946 to Sept. 30, 1963, at datum 1.00 ft higher. Oct. 4, 1995, gage was moved 2.5 miles downstream.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulation by Tongue River Reservoir (station 0630700) (capacity of 79,100 acre-feet), and many small reservoirs in Wyoming (combined capacity about 15,000 acre-ft). Diversions for irrigation of about 100,800 acres upstream from station. U. S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	217	236	259	e140	e190	e250	311	150	1330	376	96	52
2	198	233	259	e120	e180	e250	317	64	1420	348	97	65
3	214	236	259	e130	e180	e280	317	53	1450	295	112	75
4	223	238	e250	e150	e180	e300	292	46	1460	306	112	78
5	215	241	e250	e150	e180	e360	255	44	1410	338	134	80
6	207	243	e240	e160	e180	e340	228	41	1290	256	120	96
7	201	243	e220	e160	e190	e320	216	28	775	196	142	106
8	199	239	e200	e160	e180	e290	213	26	796	155	108	129
9	199	237	e170	e160	e130	e290	212	24	888	127	124	116
10	218	234	e140	e160	e110	e270	207	26	1040	131	83	114
11	257	236	e150	e160	e120	322	204	24	959	151	82	115
12	243	237	e140	e170	e120	267	201	23	910	160	72	124
13	274	237	e140	e170	e120	254	203	25	894	104	67	146
14	343	240	e150	e170	e120	260	204	25	796	80	76	130
15	283	239	e160	e170	e120	257	201	24	789	63	60	122
16	256	239	e170	e180	e120	250	200	27	758	55	68	107
17	250	240	e170	e170	e120	246	198	26	737	54	66	110
18	250	241	e130	e160	e140	243	197	23	661	56	60	113
19	245	243	e130	e160	e170	238	195	24	602	68	59	117
20	245	240	e140	e170	e190	237	194	54	671	83	60	112
21	245	237	e140	e160	e200	251	193	53	669	83	57	117
22	242	235	e150	e160	e210	265	191	46	598	90	55	127
23	243	236	e150	e170	e220	266	193	163	551	90	49	147
24	246	e230	e160	e170	e200	272	199	356	502	99	47	157
25	244	e250	e170	e180	e170	267	193	376	473	123	49	169
26	237	256	e170	e170	e190	263	184	517	466	102	50	136
27	237	276	e180	e170	e200	283	180	658	444	89	47	144
28	235	280	e170	e170	e220	304	175	813	427	88	46	145
29	238	269	e160	e170	e230	332	169	921	411	74	55	151
30	237	262	e160	e170	---	323	189	1010	396	73	48	163
31	237	---	e160	e180	---	318	---	1240	---	85	45	---
TOTAL	7378	7303	5497	5040	4880	8668	6431	6930	24573	4398	2346	3563
MEAN	238	243	177	163	168	280	214	224	819	142	75.7	119
MAX	343	280	259	180	230	360	317	1240	1460	376	142	169
MIN	198	230	130	120	110	237	169	23	396	54	45	52
AC-FT	14630	14490	10900	10000	9680	17190	12760	13750	48740	8720	4650	7070

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)*

MEAN	250	260	194	199	287	546	451	713	1305	480	188	206
MAX	694	585	423	529	1794	1783	1693	2983	3825	2207	700	599
(WY)	1972	1942	1950	1999	1971	1971	1965	1978	1978	1975	1975	1968
MIN	10.3	60.9	68.0	78.6	102	79.8	12.5	29.2	48.6	12.6	6.08	2.40
(WY)	1961	1989	1990	1961	1961	1961	1961	1961	1960	1960	1949	1938

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000*	
ANNUAL TOTAL	171850		87007			
ANNUAL MEAN	471		238		420	
HIGHEST ANNUAL MEAN					986	1978
LOWEST ANNUAL MEAN					57.2	1961
HIGHEST DAILY MEAN	3070	Jun 14	1460	Jun 4	9290	Jun 15 1962
LOWEST DAILY MEAN	110	Jan 2	23	May 12	.00	Jul 9 1940
ANNUAL SEVEN-DAY MINIMUM	118	Sep 17	24	May 9	.00	Jul 9 1940
INSTANTANEOUS PEAK FLOW			1470	Jun 4	a13300	Jun 15 1962
INSTANTANEOUS PEAK STAGE			5.07	Jun 4	13.27	Mar 19 1960
INSTANTANEOUS LOW FLOW			23	May 12	.00	Jul 9 1940
ANNUAL RUNOFF (AC-FT)	340900		172600		304300	
10 PERCENT EXCEEDS	1130		382		966	
50 PERCENT EXCEEDS	253		182		230	
90 PERCENT EXCEEDS	150		60		73	

*--During period of operation (April 1938 to April 1942, April 1946 to current year).
a--At previous site and datum.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946 to September 1994, October 1977 to December 1985, May to September 1999.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1965 to September 1981.
SUSPENDED-SEDIMENT DISCHARGE: October 1977 to December 1985.
WATER TEMPERATURE: Sesonal record, April to September 2000.
INSTRUMENTATION.--Temperature probe installed Mar. 22, 2000.
REMARKS--Missing temperature data for Apr. 2 and May 5 due to missing transmissions. Unpublished records of instantaneous specific conductance and temperature data are available in files of the District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1965-81): Maximum daily, 1,520 microsiemens per centimeter (µS/cm) at 25.0°C, May 24, 1981; minimum daily, 215 microsiemens per centimeter (µS/cm) at 25.0°C, Feb. 16, 1971.
SEDIMENT CONCENTRATION (water years 1977-85): Maximum daily mean, 14,200 mg/L, Aug. 3, 1985; minimum daily mean, 3 mg/L, Dec. 20, 1983.
SEDIMENT LOAD: Maximum daily, 84,400 tons May 18, 1978; minimum daily, .13 tons May 5, 1981.
WATER TEMPERATURE (seasonal records): Maximum, 29.5°C, Aug. 11 2000; minimum 2.0°C, Apr. 3, 2000.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of data collection (April to September), maximum, 29.5°C, Aug. 11.; minimum 2.0°C, Apr. 3.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV 1999							
22...	1320	234	8.5	850	6.0	5.0	.001
APR 2000							
05...	1015	258	8.5	945	8.5	7.5	<.001
JUN							
07...	1310	760	8.4	447	34.0	22.0	--
JUL							
19...	1310	66	8.6	846	29.0	22.0	.002

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999							
22...	.018	.22	<.001	E.005	48	30	73
APR 2000							
05...	.024	.30	.005	.039	88	61	98
JUN							
07...	--	.60	--	.122	156	320	96
JUL							
19...	.038	.43	.001	.069	56	10	99

E--Estimated.

YELLOWSTONE RIVER BASIN

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
NOV 1999											
22...	1320	320	62	40	4.2	1	56	228	3.7	.2	5.4
JUN 2000											
07...	1310	180	38	21	2.7	.8	25	165	3.0	.2	7.2

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
NOV 1999											
22...	200	507	.69	321	<3	<.1	<1	2	<1	E1	E18
JUN 2000											
07...	92	288	.39	591	<3	E.06	1	6	2	4	12

E--Estimated.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY			JUNE			JULY	
1	8.5	4.5	7.0	22.0	12.5	17.0	14.5	12.0	13.0	23.5	20.0	21.5
2	---	---	---	21.0	15.0	18.5	17.0	12.5	14.5	26.5	19.0	22.5
3	8.0	2.0	5.0	24.5	15.0	19.5	18.5	15.0	17.0	25.5	19.5	22.0
4	11.5	4.5	8.0	24.5	16.0	20.0	19.5	16.5	17.5	26.0	19.0	22.0
5	11.5	7.5	9.5	20.5	15.5	17.5	20.0	16.5	18.0	25.0	18.5	22.0
6	8.5	6.5	7.5	21.0	13.0	16.5	22.0	18.5	20.0	26.5	19.0	22.5
7	7.5	5.0	6.0	17.5	13.0	15.0	24.5	19.0	22.0	28.0	20.5	24.0
8	12.0	3.5	7.5	20.0	10.0	15.0	25.0	21.0	23.0	27.5	21.0	24.0
9	13.0	7.0	10.0	21.0	13.0	17.0	23.5	20.5	22.5	27.5	20.5	23.0
10	11.0	7.0	8.5	23.0	13.0	18.0	22.0	18.5	20.5	27.5	19.0	23.0
11	9.0	5.0	6.5	19.0	9.5	14.5	22.5	19.0	21.0	26.5	18.5	22.5
12	13.0	5.5	9.0	10.0	6.5	8.0	21.0	19.0	20.0	28.0	20.5	24.0
13	12.5	7.5	11.0	16.5	5.5	11.0	19.5	16.5	18.0	29.0	21.5	25.0
14	7.5	4.0	6.0	19.0	9.5	14.5	18.0	15.0	16.5	29.5	21.5	25.5
15	10.5	3.5	6.5	21.5	12.5	17.0	17.5	15.0	16.5	27.5	21.5	24.5
16	12.0	4.0	8.0	23.0	13.5	18.0	16.0	14.0	15.0	26.0	18.5	22.0
17	16.5	8.0	12.0	18.5	14.5	16.0	17.0	14.0	15.5	22.0	18.0	19.0
18	14.5	11.5	13.0	21.5	11.0	16.0	20.5	14.0	17.0	24.5	16.5	20.0
19	16.0	9.5	12.5	21.0	13.0	17.0	19.5	17.0	18.0	25.5	18.0	21.5
20	17.5	9.0	13.5	21.5	14.0	18.0	17.0	15.0	16.0	27.0	18.5	22.5
21	20.5	12.5	16.5	22.0	15.0	18.5	19.5	13.5	16.5	25.5	18.5	22.0
22	21.0	14.0	17.5	22.0	16.0	18.5	20.5	16.5	18.5	27.5	18.0	22.5
23	18.5	13.5	15.0	21.0	15.0	18.0	23.0	18.0	20.5	27.5	20.0	24.0
24	13.5	11.0	12.5	21.5	15.0	18.0	23.0	18.5	20.5	26.0	20.0	23.0
25	17.0	9.0	13.0	---	---	---	20.5	18.0	19.0	26.5	18.5	22.5
26	16.5	12.5	14.5	19.5	15.5	17.0	20.0	16.0	18.0	26.0	19.5	22.5
27	19.0	10.0	14.5	19.5	14.0	17.0	21.5	16.0	18.5	28.5	19.0	23.5
28	19.0	12.0	15.5	20.0	17.5	18.5	23.0	16.5	20.0	29.5	20.5	25.0
29	15.5	11.5	13.0	19.0	17.0	18.0	24.5	18.5	21.5	29.0	21.5	25.5
30	---	---	---	18.5	15.5	17.0	25.0	19.0	22.0	29.0	22.0	25.5
31	---	---	---	17.5	14.5	16.0	---	---	---	27.0	22.0	24.5
MONTH	21.0	2.0	10.5	24.5	5.5	16.5	25.0	12.0	18.5	29.5	16.5	23.0

YELLOWSTONE RIVER BASIN

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN
		AUGUST			SEPTEMBER	
1	28.0	22.0	25.0	24.5	16.0	20.0
2	26.0	22.0	23.5	25.5	19.0	22.5
3	27.0	20.0	23.5	25.5	18.5	21.5
4	28.0	22.0	24.5	27.0	20.0	23.0
5	24.5	20.5	23.0	23.5	20.5	21.5
6	26.5	19.5	23.0	20.5	17.0	19.0
7	25.5	20.0	23.0	22.0	14.0	18.0
8	28.0	19.5	24.0	22.5	15.0	19.0
9	27.0	21.0	24.0	20.0	15.0	16.5
10	26.5	22.0	24.0	17.5	12.0	15.0
11	29.5	21.5	25.0	20.5	14.0	17.0
12	29.0	21.0	25.0	21.5	15.0	18.0
13	29.5	20.5	25.0	22.0	16.0	19.0
14	27.0	21.5	24.0	22.0	15.5	19.0
15	27.5	19.5	23.0	23.5	16.0	19.5
16	23.5	19.5	21.5	23.5	17.5	20.5
17	25.5	18.0	21.5	23.0	18.5	21.0
18	25.0	18.0	21.5	21.0	17.5	19.0
19	25.0	19.5	22.0	17.5	14.0	16.0
20	22.5	18.5	21.0	16.5	11.5	14.0
21	24.5	16.0	20.0	15.0	11.0	13.0
22	25.5	17.5	21.5	11.0	7.5	8.5
23	26.0	18.0	22.0	9.0	6.5	8.0
24	27.0	19.0	23.0	13.0	6.5	9.5
25	27.0	20.5	23.5	14.5	8.5	11.5
26	27.0	19.5	23.5	17.0	10.0	13.5
27	26.5	20.0	23.0	17.5	11.5	14.5
28	24.0	17.5	20.5	17.5	11.5	14.5
29	25.0	16.5	21.0	17.5	12.5	15.0
30	22.0	17.0	19.0	16.5	13.5	15.5
31	19.5	15.0	17.0	---	---	---
MONTH	29.5	15.0	22.5	27.0	6.5	17.0

YELLOWSTONE RIVER BASIN

06309000 YELLOWSTONE RIVER AT MILES CITY, MT

LOCATION.--Lat 46°25'18", long 105°51'38", in $NE^1/_4SW^1/_4NW^1/_4$ sec.28, T.8 N., R.47 E., Custer County, Hydrologic Unit 10100001, on left bank at upstream side of bridge on State Highway 22 at Miles City, 0.8 mi downstream from Tongue River, and at river mile 184.2.

DRAINAGE AREA.--48,253 mi^2.

PERIOD OF RECORD.--September 1922 to September 1923, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,333.3 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to May 6, 1929, nonrecording gages at pumping plant 1.2 mi downstream at different datums. May 6, 1929, to Sept. 30, 1931, nonrecording gage, and Oct. 1, 1931, to Nov. 10, 1937, water- stage recorder 300 ft upstream from present site at same datum. Nov. 11, 1937, to Sept. 30, 1946, water-stage recorder at pumping plant 1.2 mi downstream at different datum. Oct. 1, 1946, to Mar. 15, 1979, water-stage recorder at site 300 ft upstream at present datum. Mar. 16, 1979, to Sept. 21, 1979, nonrecording gage at present site and datum. Sept. 22, 1979, recording gage established at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by reservoirs on tributary streams. Diversions for irrigation of about 1,100,000 acres upstream from station (does not include flood irrigation). Several observations of water temperature and specific conductance were obtained during the year. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7800	7440	6940	e5500	e5000	5840	5850	8180	31400	15000	6250	4430
2	8010	7450	6870	e5000	e4500	6030	5900	10600	28400	14600	6130	4600
3	8440	7460	6820	e4500	e4500	6150	5760	10100	26000	14700	6030	4690
4	8510	7530	6540	e5000	e5000	6110	5700	9640	23500	15300	6030	4880
5	8540	7440	6510	e5500	e5000	6110	5620	11400	23900	15000	5920	4900
6	8470	7010	6440	e5500	e5000	6080	5520	13000	25800	14300	5760	4830
7	8370	7100	6330	e5000	e5000	6080	5490	14700	26500	13300	5730	4860
8	8360	7150	6180	e5000	e5000	6050	5530	14100	27300	11900	5790	4840
9	8310	7160	6150	e5000	e5000	5940	5710	13100	28800	11000	5780	4790
10	8280	7080	6080	e5000	e5000	6100	5820	11700	29900	10900	5560	4720
11	8340	7040	5940	e4500	e5000	6130	5670	10600	29200	11000	5240	4820
12	8340	7040	5950	e4000	e5000	5980	5560	9920	26300	10500	5030	4820
13	8430	7050	6080	e4500	e5000	6150	5590	9690	22900	10000	5070	4800
14	8540	7030	6350	e4500	e4500	6150	5750	9180	20700	9410	4980	4730
15	8550	7010	6240	e4500	e3500	6110	5790	8680	21700	8920	4880	4630
16	8420	7000	6360	e4000	e4000	6010	6040	8070	21300	8480	4780	4540
17	8080	7000	6420	e4500	e4500	5940	6440	7270	19700	8150	4460	4430
18	8030	6990	6390	e6000	e5000	5890	6800	6880	21800	8060	4350	4410
19	8110	7020	6530	e5500	e5000	5820	6620	8750	19700	8020	4280	4310
20	8140	6900	e6000	e5500	e5000	5800	6500	13600	17800	8160	4230	4310
21	8130	6660	6310	e5500	e5000	5810	6690	12900	17600	8380	4200	4450
22	8130	6620	6380	e5500	5460	5840	6650	12700	20200	8520	4270	4760
23	8110	6610	6490	e5500	5530	5790	6640	13500	18800	8380	4240	5100
24	8040	6560	6460	e5500	5720	5780	6950	15300	17400	8020	4190	5680
25	8040	6600	6490	e5500	5990	5660	8080	18400	17900	7560	4120	5990
26	8050	6590	6460	e5500	6050	5740	9040	21700	18500	7200	4150	6130
27	8000	6790	6400	e5500	6060	5790	9140	23400	19500	6890	4160	6210
28	7980	6730	6370	e5000	5870	5820	8430	26000	18800	6710	4150	6150
29	7890	6860	6310	e5500	5840	5910	7860	26400	16900	6520	4190	5990
30	7490	6950	6350	e5500	---	5990	7570	26700	15800	6360	4180	5950
31	7550	---	6110	e5500	---	6020	---	32900	---	6320	4200	---
TOTAL	253480	209870	197250	158500	147020	184620	194710	439060	674000	307560	152330	149750
MEAN	8177	6996	6363	5113	5070	5955	6490	14160	22470	9921	4914	4992
MAX	8550	7530	6940	6000	6060	6150	9140	32900	31400	15300	6250	6210
MIN	7490	6560	5940	4000	3500	5660	5490	6880	15800	6320	4120	4310
AC-FT	502800	416300	391200	314400	291600	366200	386200	870900	1337000	610000	302100	297000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2000, BY WATER YEAR (WY)*

MEAN	7814	7193	5798	5342	6250	8397	8347	17500	35170	20540	8296	7297
MAX	12970	10850	9342	8897	16160	18560	15210	29100	61860	46310	16540	13710
(WY)	1972	1973	1983	1968	1971	1929	1943	1978	1997	1967	1997	1941
MIN	4116	3976	2921	2034	2344	4103	2729	7334	13030	3988	2615	2964
(WY)	1936	1932	1933	1937	1932	1961	1961	1961	1934	1934	1961	1934

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1922 - 2000*	
ANNUAL TOTAL	4582500		3068150			
ANNUAL MEAN	12550		8383		11500	
HIGHEST ANNUAL MEAN					17470	1997
LOWEST ANNUAL MEAN					6141	1934
HIGHEST DAILY MEAN	51200	Jun 24	32900	May 31	92400	May 30 1923
LOWEST DAILY MEAN	5940	Dec 11	3500	Feb 15	996	Dec 14 1932
ANNUAL SEVEN-DAY MINIMUM	6100	Dec 7	4160	Aug 24	1220	Dec 12 1932
INSTANTANEOUS PEAK FLOW			33900	May 31	a102000	May 22 1978
INSTANTANEOUS PEAK STAGE			8.74	May 31	b20.78	Mar 15 1979
INSTANTANEOUS LOW FLOW					1800	Mar 7 1995
ANNUAL RUNOFF (AC-FT)	9089000		6086000		8333000	
10 PERCENT EXCEEDS	28500		16100		25700	
50 PERCENT EXCEEDS	8360		6360		7600	
90 PERCENT EXCEEDS	6530		4580		4200	

06309000 YELLOWSTONE RIVER AT MILES CITY, MT--Continued

SUMMARY STATISTICS	WATER YEARS 1922 - 1961**		WATER YEARS 1967 - 2000***	
ANNUAL MEAN	10710		12210	
HIGHEST ANNUAL MEAN	16600	1943	17470	1997
LOWEST ANNUAL MEAN	6141	1934	7710	1988
HIGHEST DAILY MEAN	92400	May 30 1923	82300	Jun 15 1997
LOWEST DAILY MEAN	996	Dec 14 1932	1640	Nov 25 1977
ANNUAL SEVEN-DAY MINIMUM	1220	Dec 12 1932	2270	Nov 20 1977
INSTANTANEOUS PEAK FLOW	96300	Jun 19 1944	a102000	May 22 1978
INSTANTANEOUS PEAK STAGE	b21.70	Mar 20 1944	b20.78	Mar 15 1979
ANNUAL RUNOFF (AC-FT)	7756000		8843000	
10 PERCENT EXCEEDS	25000		26300	
50 PERCENT EXCEEDS	6620		8430	
90 PERCENT EXCEEDS	3500		5250	

*--During period of operation (1922-23, 1928 to current year).
**--Prior to construction of Yellowtail Dam, during period of operation (1922-23, 1928-61).
***--After completion of Yellowtail Dam.
a--Gage height, 16.50 ft.
b--Backwater from ice jam.
e--Estimated.

06324500 POWDER RIVER AT MOORHEAD, MT

LOCATION.--Lat 45°04'04", long 105°52'10", in $NW^1/_4SE^1/_4NW^1/_4$ sec.8, T.9 S., R.48 E., Powder River County, Hydrologic Unit 10090207, on left bank 500 ft downstream from discontinued post office at Moorhead, 6.2 mi upstream from Buffalo Creek, and at river mile 184.8.

DRAINAGE AREA.--8,088 mi^2.

PERIOD OF RECORD.--May 1929 to September 1972, October 1974 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1932(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,334.6 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Aug. 28, 1931, nonrecording gage at site 0.3 mi upstream at different datum. Aug. 28, 1931, to Mar. 21, 1956, water-stage recorder at site 1.2 mi upstream at different datum. Mar. 22 to July 24, 1956, nonrecording gage at site 0.3 mi downstream at different datum. July 25 to Sept. 12, 1956, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft. Diversions for irrigation of about 66,300 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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 30, 1923, reached a stage of 19 ft, site and datum used 1931-56, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	232	271	319	e270	e270	e380	277	666	1160	357	40	35
2	245	263	323	e250	e250	e350	285	607	1150	339	41	38
3	271	264	315	e240	e230	e350	269	614	1030	301	38	47
4	282	248	302	e300	e250	e330	260	721	901	259	36	74
5	284	254	258	e280	e280	e330	247	630	827	224	42	61
6	277	277	236	e280	e280	e350	232	465	751	181	47	65
7	283	271	203	e280	e300	e400	249	503	677	149	34	66
8	285	267	e110	e280	e300	467	258	737	652	132	42	56
9	279	271	e45	e260	e230	452	255	747	625	121	63	64
10	269	277	e40	e260	e230	412	251	699	645	113	61	75
11	273	276	e70	e250	e270	375	255	626	595	111	53	96
12	261	278	e150	e230	e270	361	271	608	521	88	47	104
13	252	281	e220	e250	e270	358	270	569	431	83	44	103
14	255	277	e200	e300	e270	332	258	706	325	68	44	103
15	258	279	e230	e300	e250	318	257	718	308	59	45	100
16	258	272	e240	e300	e270	304	302	640	339	49	40	101
17	256	275	e230	e290	e270	290	324	581	348	44	34	112
18	262	284	e200	e280	e250	279	322	694	411	58	35	120
19	260	285	e200	e280	e250	268	364	1860	362	68	46	125
20	269	255	e230	e300	e300	277	430	3340	308	55	44	126
21	275	252	e250	e280	e300	275	506	1920	261	68	46	134
22	271	245	e280	e280	e320	267	457	1670	252	65	53	161
23	281	236	e280	e250	e320	263	567	1350	321	46	50	159
24	290	203	e280	e230	e350	263	662	1300	307	38	37	155
25	299	206	e280	e250	e300	260	664	1310	326	33	35	163
26	297	243	e280	e270	e300	265	654	1320	453	32	30	163
27	295	257	e300	e230	e320	263	582	1310	478	34	26	172
28	287	311	e300	e230	e350	262	656	1280	471	37	26	168
29	285	301	e280	e220	e350	281	634	1220	429	38	28	164
30	277	298	e280	e200	---	278	613	1170	411	39	33	184
31	281	---	e280	e200	---	282	---	1220	---	47	34	---
TOTAL	8449	7977	7211	8120	8200	9942	11631	31801	16075	3336	1274	3294
MEAN	273	266	233	262	283	321	388	1026	536	108	41.1	110
MAX	299	311	323	300	350	467	664	3340	1160	357	63	184
MIN	232	203	40	200	230	260	232	465	252	32	26	35
AC-FT	16760	15820	14300	16110	16260	19720	23070	63080	31880	6620	2530	6530

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2000, BY WATER YEAR (WY)*

MEAN	229	227	160	153	291	623	514	1082	1403	477	177	147
MAX	897	660	326	445	1200	2290	1314	5553	4131	2500	1219	686
(WY)	1995	1999	1981	1981	1930	1947	1965	1978	1967	1937	1941	1982
MIN	16.1	80.0	56.2	27.2	20.9	210	117	82.6	39.5	33.9	.60	1.28
(WY)	1955	1936	1933	1950	1933	1935	1961	1934	1954	1961	1966	1960

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1930 - 2000*	
ANNUAL TOTAL	233772		117310			
ANNUAL MEAN	640		321		457	
HIGHEST ANNUAL MEAN					1091	1978
LOWEST ANNUAL MEAN					109	1961
HIGHEST DAILY MEAN	3910	May 4	3340	May 20	27500	May 20 1978
LOWEST DAILY MEAN	40	Dec 10	26	Aug 27	.00	Jul 15 1931
ANNUAL SEVEN-DAY MINIMUM	51	Aug 28	30	Aug 25	.00	Sep 4 1960
INSTANTANEOUS PEAK FLOW			3930	May 20	a33000	May 20 1978
INSTANTANEOUS PEAK STAGE			5.65	May 20	b17.70	Mar 21 1956
INSTANTANEOUS LOW FLOW					.00	Jul 15 1931
ANNUAL RUNOFF (AC-FT)	463700		232700		331000	
10 PERCENT EXCEEDS	1940		631		1070	
50 PERCENT EXCEEDS	281		270		220	
90 PERCENT EXCEEDS	106		46		48	

*--During period of operation (1930-72, 1975 to current year).
a--Gage height, 15.24 ft.
b--Ice jam, site and datum then in use.
e--Estimated.

YELLOWSTONE RIVER BASIN

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY

(National water-quality assessment program)

LOCATION.--Lat 44°55'37", long 105°21'10", in $NW^1/_4SW^1/_4SW^1/_4$ sec.13, T.57 N., R.71 W., Campbell County, Hydrologic Unit 10090208, on left bank 3.1 mi upstream from Dry Creek, 5.0 mi south of the Wyoming-Montana State line, and 20 mi north of Weston.

DRAINAGE AREA.--1,235 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

REVISED RECORDS.--WDR WY-77-1: Drainage area. WDR WY-78-1: 1976(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,410 ft above sea level, from topographic map.

REMARKS.--Water-discharge records fair except those for estimated daily discharges, which are poor. Diversion upstream from station for irrigation of about 80 acres downstream from station. Flow occasionally affected by contributions from mine dewatering. U. S. Geological Survey satellite telemetry at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 130 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 19	0930	*116	*4.38

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.8	3.9	e3.0	e3.3	e8.6	6.8	12	7.3	2.5	.04	.00
2	1.9	1.6	3.6	e2.9	e3.6	e9.2	6.9	10	6.9	2.0	.04	.00
3	2.3	1.6	3.6	e2.8	e4.0	e12	6.9	9.0	6.2	1.8	.04	.00
4	2.4	1.8	e3.0	2.8	4.2	e14	6.9	8.1	6.1	2.0	.03	.00
5	2.1	2.0	e2.5	3.2	4.2	e13	5.2	7.3	5.5	1.7	.03	.01
6	2.2	2.2	e2.6	3.2	4.5	13	4.4	6.9	4.8	1.4	.02	.01
7	2.2	2.1	e2.7	3.3	4.5	12	4.4	7.2	4.2	1.1	.03	.01
8	2.2	2.0	2.8	3.1	4.6	13	4.5	8.1	3.6	.97	.02	.01
9	2.0	2.0	2.8	3.2	4.9	12	4.3	21	e3.7	.91	.02	.01
10	2.0	2.1	2.9	3.2	5.1	11	4.2	17	e3.5	.90	.01	.01
11	2.2	2.3	2.8	3.2	4.8	11	4.4	10	e3.1	.92	.01	.01
12	2.2	2.3	3.0	3.4	e4.6	11	4.4	8.9	e2.8	.90	.01	.01
13	2.0	2.3	2.9	3.6	e5.2	11	4.6	8.5	e3.0	.68	.01	.01
14	2.0	2.3	3.0	3.8	e5.6	11	4.6	11	e3.3	.53	.01	.01
15	1.9	2.4	3.1	3.8	5.9	10	4.6	9.0	3.4	.31	.01	.01
16	2.1	2.7	e2.9	3.7	5.8	8.8	4.6	8.8	3.4	.30	.01	.01
17	1.9	2.7	e2.8	3.8	5.7	8.2	4.7	9.4	3.1	.26	.00	.01
18	1.8	2.6	e2.6	3.7	5.9	8.2	4.9	15	2.7	.21	.00	.01
19	1.9	3.2	e2.8	3.6	5.8	7.7	5.2	93	3.1	.27	.00	.01
20	1.9	4.5	2.9	3.6	6.1	7.6	5.4	29	2.9	.32	.00	.01
21	1.8	3.6	3.2	3.8	6.4	7.1	5.4	42	2.7	.34	.00	e.01
22	1.7	3.9	3.3	3.8	6.3	7.0	7.3	46	1.9	.25	.00	e.01
23	1.8	e3.6	3.3	3.8	6.5	6.5	8.8	24	1.9	.21	.00	e.01
24	2.3	e3.3	3.3	3.9	6.9	6.5	16	17	4.5	.15	.00	e.01
25	1.8	e3.7	3.3	4.2	e7.0	6.1	59	13	2.7	.22	.00	e.01
26	1.9	4.3	3.3	4.3	e7.2	6.4	72	11	3.3	.15	.00	e.01
27	1.9	4.1	3.3	4.3	e7.4	6.0	28	9.5	4.5	.08	.00	e.01
28	1.7	4.1	3.3	3.8	e8.4	5.6	20	9.0	4.6	.06	.00	e.01
29	2.0	4.1	3.3	3.8	e9.6	6.2	18	7.9	4.3	.05	.00	e.01
30	1.9	4.0	3.2	e3.7	---	6.1	15	7.2	3.4	.04	.00	e.01
31	1.8	---	3.3	e3.4	---	6.7	---	6.6	---	.04	.00	---
TOTAL	61.3	85.2	95.3	109.7	164.0	282.5	351.4	502.4	116.4	21.57	0.34	0.26
MEAN	1.98	2.84	3.07	3.54	5.66	9.11	11.7	16.2	3.88	.70	.011	.009
MAX	2.4	4.5	3.9	4.3	9.6	14	72	93	7.3	2.5	.04	.01
MIN	1.5	1.6	2.5	2.8	3.3	5.6	4.2	6.6	1.9	.04	.00	.00
AC-FT	122	169	189	218	325	560	697	997	231	43	.7	.5
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2000, BY WATER YEAR (WY)												
MEAN	12.1	4.02	2.65	8.57	40.2	63.0	24.5	61.9	30.1	10.9	5.89	4.28
MAX	172	25.4	9.97	89.0	336	613	99.3	703	187	68.8	44.8	60.8
(WY)	1995	1999	1995	1974	1997	1978	1999	1978	1984	1982	1993	1986
MIN	.009	.015	.21	.10	.46	1.34	.75	1.04	2.11	.044	.000	.002
(WY)	1992	1982	1982	1991	1989	1981	1981	1992	1988	1980	1991	1991

YELLOWSTONE RIVER BASIN

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

(National water-quality assessment program)

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1973 - 2000	
ANNUAL TOTAL	8013.44		1790.37			
ANNUAL MEAN	22.0		4.89		22.3	
HIGHEST ANNUAL MEAN					127	1978
LOWEST ANNUAL MEAN					1.49	1992
HIGHEST DAILY MEAN	401	Apr 12	93	May 19	5000	May 19 1978
LOWEST DAILY MEAN	.46	Aug 28	.00	Aug 17-Sept 4	.00	Many days, some years
ANNUAL SEVEN-DAY MINIMUM	.57	Aug 23	.00	Aug 17	.00	Many days, some years
INSTANTANEOUS PEAK FLOW			116	May 19	a5300	May 19 1978
INSTANTANEOUS PEAK STAGE			4.38	May 19	11.63	Mar 20 1978
ANNUAL RUNOFF (AC-FT)	15890		3550		16140	
10 PERCENT EXCEEDS	70		9.5		36	
50 PERCENT EXCEEDS	4.3		3.3		3.0	
90 PERCENT EXCEEDS	1.5		.01		.03	

a--Gage height, 11.62 ft.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-82, 1985 to current year.

REMARKS.--Samples collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT											
18...	1720	1.9	683	100	10.7	8.1	3560	4.0	7.0	850	149
NOV											
09...	1540	2.0	678	108	11.2	8.1	3670	22.0	8.0	880	160
DEC											
13...	1415	3.0	668	95	12.0	8.1	3710	1.0	0.0	1000	198
JAN											
06...	1525	3.3	682	89	11.5	8.1	3850	4.0	0.0	1000	200
FEB											
23...	1020	6.3	675	95	12.2	8.0	3080	8.5	0.0	770	156
MAR											
06...	1400	14	670	100	10.3	8.0	2670	15.0	8.0	620	121
23...	1045	6.6	672	92	10.8	8.1	3510	15.5	3.0	980	182
APR											
05...	0815	6.0	674	85	8.8	8.1	3920	8.0	8.0	990	172
MAY											
17...	0820	10	669	85	7.6	8.1	3060	11.0	14.0	810	150
19...	1535	94	674	95	8.4	7.7	932	21.0	15.0	250	52
JUN											
08...	1245	3.3	665	126	8.9	7.9	3890	40.0	25.5	1100	181
JUL											
13...	0815	.59	678	100	7.4	7.9	3670	25.0	23.5	770	109
AUG											
01...	0845	.05	676	88	6.8	7.7	4090	29.0	21.5	930	140
16...	0845	.01	--	--	--	7.8	4360	18.5	19.0	1100	174
SEP											
12...	1440	.01	675	129	9.8	8.0	4460	29.0	22.0	1400	242

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
OCT											
18...	116	20	8	541	312	381	52	.6	2.1	1680	.29
NOV											
09...	118	18	8	579	396	483	62	.7	6.7	1630	.26
DEC											
13...	129	25	8	554	439	535	64	.7	11	1720	.33
JAN											
06...	123	24	7	540	470	573	60	.7	12	1710	.22
FEB											
23...	92	18	7	428	382	466	50	.6	9.6	1290	.34
MAR											
06...	76	15	6	365	296	361	63	.5	7.1	1100	.33
23...	128	17	7	485	385	470	57	.6	2.2	1570	.47
APR											
05...	135	22	8	550	392	478	64	.7	4.6	1790	.39
MAY											
17...	105	15	7	433	325	397	46	.6	7.0	1380	.47
19...	29	9.3	3	111	106	129	7.9	.4	7.0	338	.41
JUN											
08...	163	22	7	538	336	410	48	.6	7.4	1920	.47
JUL											
13...	120	22	8	534	232	283	45	.6	2.2	1770	.46
AUG											
01...	140	24	9	596	253	309	79	1.0	3.6	1950	.41
16...	150	20	7	517	279	340	147	.8	5.5	2050	.39
SEP											
12...	203	27	7	603	279	340	199	.6	22	2150	.37

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)
OCT									
18...	.44	<.02	<.05	<.01	.006	<.01	.019	6.8	.6
NOV									
09...	.42	<.02	<.05	<.01	<.006	<.01	.018	6.0	.4
DEC									
13...	.34	<.02	<.05	<.01	E.004	<.01	.009	7.3	.3
JAN									
06...	.29	<.02	<.05	<.01	E.003	<.01	E.006	6.3	.2
FEB									
23...	.42	<.02	<.05	<.01	.012	<.01	.031	8.8	.3
MAR									
06...	.60	<.02	<.05	<.01	.007	<.01	.037	7.3	.7
23...	.48	<.02	<.05	<.01	.006	<.01	.021	8.5	.4
APR									
05...	.46	<.02	<.05	<.01	.006	<.01	.024	9.1	.5
MAY									
17...	.83	<.02	<.05	<.01	.007	<.01	.058	9.8	2.0
19...	14	<.02	.30	<.01	.007	<.01	1.77	6.1	>10
JUN									
08...	.76	<.02	<.05	<.01	.007	<.01	.046	11	2.0
JUL									
13...	.58	<.02	<.05	<.01	.006	<.01	.011	9.3	.9
AUG									
01...	.59	<.02	<.05	<.01	E.005	<.01	.027	7.8	.4
16...	.53	<.02	<.05	<.01	E.005	<.01	.022	8.2	1.3
SEP									
12...	.58	<.02	<.05	<.01	.007	<.01	.023	9.4	1.2

E--Estimated.

YELLOWSTONE RIVER BASIN

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	TUR-BID-ITY (NTU) (00076)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
18...	2880	2750	14.8	3.91	--	--	--	<30	30	105	.54
NOV											
09...	2890	2810	15.6	3.93	--	--	--	<50	62	40	.22
DEC											
13...	3080	2970	25.0	4.19	--	--	--	<30	78	174	1.4
JAN											
06...	3120	2950	27.8	4.24	--	--	--	20	99	101	.90
FEB											
23...	2390	2270	40.6	3.25	--	--	--	20	198	20	.34
MAR											
06...	2020	1930	76.2	2.74	19	--	--	<30	134	42	1.6
23...	2900	2680	51.7	3.95	--	--	--	<10	173	100	1.8
APR											
05...	3280	2980	53.2	4.47	23	--	--	<30	130	97	1.6
MAY											
17...	2420	2330	65.4	3.30	140	530	520	<30	78	161	4.3
19...	629	621	160	.86	--	--	--	<10	1	19400	4920
JUN											
08...	3330	3080	29.7	4.53	77	490	250	<30	130	124	1.1
JUL											
13...	2960	2750	4.72	4.03	59	210	120	<10	102	64	.10
AUG											
01...	3360	3090	.45	4.58	30	420	200	<30	107	98	.01
16...	3650	3230	.10	4.96	30	280	180	<50	130	60	.00
SEP											
12...	3880	3620	.08	5.27	15	62	100	<50	115	51	.00

DATE	TIME	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
OCT												
18...	1720	1	<1	<2	20	<1	--	<1	<.8	<1	4	<1
FEB												
23...	1020	10	<1	<2	20	<1	--	<1	<1	<1	6	<1
MAR												
06...	1400	6	<1	E.9	20	<1	248	<1	<1	<1	6	<1
23...	1045	3	<1	E.7	26	<1	254	<1	<1	<1	7	<1
APR												
05...	0815	12	<1	.9	23	<1	275	<1	<1	<1	8	<1
MAY												
17...	0820	18	<1	1	54	<1	199	<1	<1	1	6	<1
19...	1535	5	<1	E.8	53	<1	109	<1	<.8	<1	3	<1
JUN												
08...	1245	2	<1	1	56	<1	353	<1	<.8	1	6	<1
JUL												
13...	0815	7	<1	1	40	<1	356	<1	<.8	<1	4	<1
AUG												
01...	0845	43	<2	<2	46	<2	317	<2	<1	<2	7	<1
16...	0845	11	<1	E.9	50	<1	300	<1	<.8	<1	4	<1
SEP												
12...	1440	6	<2	<2	43	<2	247	<2	<.8	<2	5	<2

E--Estimated.

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	THAL-LIUM, DIS-SOLVED (UG/L AS TL) (01057)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
OCT											
18...	--	<.2	1	3	<2	<1	--	--	--	4	10
FEB											
23...	--	<.2	3	3	<2	<1	--	--	--	6	16
MAR											
06...	82	--	3	3	2	<1	1840	<.9	<1	6	12
23...	73	--	4	8	1	<1	2590	<.9	<1	7	21
APR											
05...	88	--	4	3	1	<1	2750	<.9	<1	10	21
MAY											
17...	58	--	3	6	2	<1	2140	<.9	1	6	14
19...	28	--	2	5	2	<1	715	<.9	1	2	5
JUN											
08...	94	--	5	10	2	<1	3170	<.9	2	3	15
JUL											
13...	92	--	4	3	1	<1	2080	<.9	<1	6	14
AUG											
01...	80	--	4	4	2	<2	2300	<2	<2	29	15
16...	84	--	3	5	2	<1	2940	<.9	1	7	21
SEP											
12...	79	--	3	6	2	<2	3260	<2	<2	4	27

E--Estimated.

YELLOWSTONE RIVER BASIN

06326500 POWDER RIVER NEAR LOCATE, MT

(National water-quality assessment program)

LOCATION.--Lat 46°25'48", long 105°18'34", in $SW^1/_4SW^1/_4SE^1/_4$ sec. 23, T.8 N., R.51 E., Custer County, Hydrologic Unit 10090209, on left bank at downstream side of bridge on U.S. Highway 12, 0.1 mi west of Locate, and 25 mi east of Miles City, and at river mile 29.4.

DRAINAGE AREA.--13,189 mi^2.

PERIOD OF RECORD.--March 1938 to current year.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 926: 1939. WSP 1309: 1938-39 (M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,384.79 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to July 11, 1947, nonrecording gage at bridge 1.5 mi upstream, and July 11, 1947 to Sept. 30, 1965, water-stage recorder at site near upstream bridge at different datum. Oct. 1, 1965 to Oct. 4, 1966, nonrecording gage, and Oct. 5, 1966 to Mar. 21, 1978, water-stage recorder at present site and datum. Mar. 22, 1978 to Apr. 23, 1981, water-stage recorder 1.5 mi upstream at different datum, Apr. 24 to Aug. 20, 1981, water-stage recorder at present site and datum, and Aug. 21, 1981 to Sept. 30, 1981, water-stage recorder 1.5 mi upstream at different datum. Oct. 1, 1981 to Apr. 5, 1995 water-stage recorder at site 1.5 miles downstream at different datum. Apr. 7, 1995 to present, water-stage recorders located on each bank and used depending on control conditions.

REMARKS.--Water-discharge records fair except those for estimated daily discharges, which are poor. Some regulation by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft. Diversions for irrigation of about 101,800 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	317	315	377	e250	e240	e460	415	529	817	295	16	5.6
2	343	303	393	e150	e230	e480	429	517	977	287	20	5.4
3	380	314	420	e200	e230	e500	416	449	1030	256	21	8.2
4	401	323	385	e230	e230	e600	420	471	1010	249	21	8.9
5	396	312	380	e250	e230	e700	427	475	981	223	18	9.2
6	326	322	348	e270	e230	733	396	508	865	219	16	9.4
7	287	328	346	e270	e230	878	382	591	731	212	18	9.9
8	295	332	336	e270	e200	875	371	463	649	165	15	9.8
9	307	336	325	e260	e150	712	364	410	632	149	12	11
10	304	349	288	e250	e100	594	348	389	589	926	11	12
11	303	352	250	e250	e110	570	361	601	568	714	8.6	14
12	304	359	227	e250	e120	547	359	497	550	266	7.9	20
13	305	359	213	e250	e130	525	357	454	527	124	5.9	23
14	301	361	e200	e250	e130	542	353	435	495	86	5.0	25
15	300	362	179	e250	e150	514	334	454	481	74	7.6	25
16	292	361	133	e240	e120	503	349	386	424	66	6.6	25
17	276	361	e120	e230	e150	499	358	464	359	60	6.2	24
18	291	371	e110	e210	e200	472	332	488	349	55	6.8	28
19	293	376	e120	e200	e400	448	322	418	307	44	7.6	33
20	286	380	e130	e220	e500	459	316	377	282	41	7.8	40
21	291	388	e150	e230	e500	431	342	1210	286	77	7.1	45
22	295	390	e170	e230	e500	441	330	2080	307	111	6.6	59
23	300	382	e190	e240	e500	444	342	1570	260	56	6.5	63
24	310	353	e190	e240	e500	421	475	1360	240	44	6.2	66
25	309	348	e230	e240	e400	411	490	1210	218	40	5.3	64
26	309	363	e250	e250	e420	423	568	1130	205	32	5.0	71
27	314	361	e300	e250	e440	405	554	1180	215	25	4.7	86
28	315	340	e320	e250	e460	415	531	1190	218	21	4.5	92
29	326	353	e320	e250	e460	427	497	1030	221	18	4.4	95
30	315	366	e320	e250	---	425	460	939	272	15	4.6	98
31	319	---	e300	e250	---	413	---	887	---	14	4.6	---
TOTAL	9710	10520	8020	7430	8260	16267	11998	23162	15065	4964	297.5	1085.4
MEAN	313	351	259	240	285	525	400	747	502	160	9.60	36.2
MAX	401	390	420	270	500	878	568	2080	1030	926	21	98
MIN	276	303	110	150	100	405	316	377	205	14	4.4	5.4
AC-FT	19260	20870	15910	14740	16380	32270	23800	45940	29880	9850	590	2150

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2000, BY WATER YEAR (WY)

MEAN	258	224	153	145	444	1268	756	1187	1664	581	221	172
MAX	921	790	417	476	3850	4627	3062	5970	8045	2015	1096	898
(WY)	1941	1999	1942	1981	1943	1972	1965	1978	1944	1993	1941	1941
MIN	1.77	12.5	12.5	4.53	2.82	80.2	109	142	123	14.4	1.30	.19
(WY)	1961	1961	1961	1950	1950	1950	1961	1961	1966	1988	1988	1960

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

(National water-quality assessment program)

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1939 - 2000	
ANNUAL TOTAL	274608		116778.9			
ANNUAL MEAN	752		319		589	
HIGHEST ANNUAL MEAN					1622	1944
LOWEST ANNUAL MEAN					79.4	1961
HIGHEST DAILY MEAN	4800	May 5	2080	May 22	26000	Feb 19 1943
LOWEST DAILY MEAN	59	Sep 1	4.4	Aug 29	.00	Jan 16 1950
ANNUAL SEVEN-DAY MINIMUM	65	Aug 28	4.7	Aug 25	.00	Jan 16 1950
INSTANTANEOUS PEAK FLOW			3200	May 22	a31000	Feb 19 1943
INSTANTANEOUS PEAK STAGE			4.56	May 22	12.20	Mar 16 1978
INSTANTANEOUS LOW FLOW			3.6	Aug 14	b.00	Jul 30 1998
ANNUAL RUNOFF (AC-FT)	544700		231600		426900	
10 PERCENT EXCEEDS	2120		551		1380	
50 PERCENT EXCEEDS	340		304		246	
90 PERCENT EXCEEDS	132		15		43	

a--Backwater from ice.
b--On many days in 1950, 1960-61, and 1988.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948-63, 1975 to September 1994, January 1999 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1951 to September 1962, October 1974 to September 1981, July 1988 to January 1990.
SUSPENDED-SEDIMENT DISCHARGE: October 1974 to September 1984.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office. Samples collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1951-62, 1975-81, 1988-90): Maximum daily, 4,000 microsiemens per centimeter (µS/cm) at 25.0°C, Apr. 1, 1977; minimum daily, 523 microsiemens per centimeter (µS/cm) at 25.0°C, Mar. 11, 12, 1989.
SEDIMENT CONCENTRATION: Maximum daily mean, 56,800 mg/L May 6, 1975; minimum daily mean, 1.8 mg/L July 30, 1977.
SEDIMENT LOAD: Maximum daily, 906,000 tons May 6, 1975; minimum daily, 1.2 tons Jul. 20, 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
OCT 1999												
27...	1200	304	705	8.4	1700	6.0	6.0	--	--	11.4	99	550
NOV												
09...	0930	330	696	8.2	1780	13.0	7.0	--	--	10.9	99	540
DEC												
01...	1530	392	698	8.3	2000	6.0	1.0	--	--	13.9	108	580
JAN 2000												
11...	1530	E250	692	7.9	2020	0.0	0.0	--	--	13.3	101	620
FEB												
03...	1100	E230	627	8.0	1980	1.0	0.0	--	--	12.8	107	600
MAR												
07...	0930	667	693	8.3	1520	16.0	2.5	--	--	13.1	106	410
21...	1200	418	702	8.1	2020	6.0	4.5	--	--	8.4	71	580
APR												
06...	0900	406	689	8.4	2050	8.0	6.0	--	--	11.4	102	560
MAY												
01...	1200	553	699	8.3	1990	23.0	15.0	--	--	9.5	104	530
22...	1200	1840	690	7.8	1840	23.0	17.5	--	--	8.2	96	510
JUN												
12...	1500	526	693	8.3	1260	26.0	22.5	--	--	8.0	103	330
JUL												
06...	1130	240	693	8.5	1650	28.0	23.5	1400	1300	8.2	108	460
AUG												
16...	1230	7.3	790	8.7	3050	25.0	21.0	150	--	9.2	100	590
SEP												
25...	1245	65	702	7.90	2190	18.5	13.0	60	48	10.6	110	610

E--Estimated.

YELLOWSTONE RIVER BASIN

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TURBIDITY (NTU) (00076)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT 1999												
27...	--	120	61	5.8	4	200	215	5	184	231	70	.3
NOV												
09...	--	120	57	5.3	3	180	212	7	186	210	72	.4
DEC												
01...	--	140	59	5.5	4	220	154	72	246	240	100	.3
JAN 2000												
11...	--	140	66	6.8	4	230	339	0	278	292	92	.3
FEB												
03...	--	140	61	6.1	4	220	325	0	266	282	89	.4
MAR												
07...	--	95	43	5.3	4	170	205	0	168	171	59	.3
21...	--	130	62	6.4	4	240	265	6	227	243	89	.4
APR												
06...	--	120	60	6.7	5	240	229	19	220	235	92	.4
MAY												
01...	--	120	56	6.9	5	250	210	14	196	197	64	.5
22...	--	120	50	6.4	4	230	171	0	140	132	65	.4
JUN												
12...	500	79	33	4.6	3	130	131	24	147	162	47	.4
JUL												
06...	E1000	100	47	7.1	4	210	210	5	180	193	79	.3
AUG												
16...	5	120	68	1.9	8	460	283	17	260	260	89	.3
SEP												
25...	--	130	72	8.4	5	280	311	0	255	210	48	.3

DATE	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)
OCT 1999												
27...	7.8	640	1280	1220	1.74	1050	<.01	<.05	<.02	.2	.6	<.01
NOV												
09...	7.9	640	1300	1200	1.77	1160	<.01	<.05	<.02	.2	.5	<.01
DEC												
01...	7.7	730	1420	1410	1.93	1500	<.01	<.05	<.02	.2	.4	<.01
JAN 2000												
11...	11	710	1510	1420	2.06	--	<.01	.32	<.02	.1	.3	<.01
FEB												
03...	11	660	1420	1350	1.93	--	<.01	.35	<.02	.1	.2	<.01
MAR												
07...	7.1	530	1060	1020	1.44	1910	<.01	.25	.02	.2	1.9	.01
21...	<30	780	1540	1450	2.10	1740	<.01	.22	<.02	.2	.7	<.01
APR												
06...	7.2	780	1540	1450	2.10	1690	<.01	<.05	<.02	.2	.5	.01
MAY												
01...	8.7	770	1450	1410	1.97	2170	<.01	.27	<.02	.2	2.8	<.01
22...	7.8	710	1330	1290	1.81	6630	.01	.81	.03	.3	23	<.01
JUN												
12...	10	430	872	828	1.19	1240	<.01	<.05	<.02	.2	.9	<.01
JUL												
06...	8.6	640	1290	1210	1.76	837	<.01	<.05	<.02	.3	1.5	<.01
AUG												
16...	12	1200	2270	2140	3.09	45	<.01	<.05	<.02	.3	.4	<.01
SEP												
25...	6.6	950	1680	1650	2.29	296	<.01	<.05	<.02	.3	.5	<.01

E--Estimated.

YELLOWSTONE RIVER BASIN

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)
OCT 1999												
27...	<.006	.20	--	--	--	--	--	--	--	--	--	--
NOV												
09...	<.006	.21	3	<1	<2	--	46	<1	--	<1	--	<.8
DEC												
01...	E.004	.14	--	--	--	--	--	--	--	--	--	--
JAN 2000												
11...	<.006	.028	2	<1	E1	--	47	<1	--	<1	--	<.8
FEB												
03...	<.006	.045	1	<1	<2	--	46	<1	--	<1	--	<.8
MAR												
07...	.006	1.1	1	<1	<.9	--	36	<1	118	<1	--	<1
21...	.007	.27	2	<1	<.9	--	48	<1	155	<1	--	<1
APR												
06...	E.004	.17	12	<1	.9	--	46	<1	171	<1	--	<1
MAY												
01...	.009	1.2	3	<1	1	--	47	<1	170	<1	--	E.7
22...	.010	15	7	<1	E.8	38	57	<1	167	<1	6	<.8
JUN												
12...	.011	.40	11	<1	1	--	30	<1	125	<1	--	<.8
JUL												
06...	E.005	.58	9	<1	1	--	49	<1	193	<1	--	<.8
AUG												
16...	E.003	.012	2	<1	1	<3	90	<1	324	<1	<.1	<.8
SEP												
25...	E.003	.071	3	<1	E.7	--	52	<1	160	<1	--	<.8

DATE	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)
OCT 1999												
27...	--	--	--	<10	--	--	--	E2	--	--	--	--
NOV												
09...	<1	3	--	<10	<1	--	--	1	<.2	2	4	--
DEC												
01...	--	--	--	<30	--	--	--	<9	--	--	--	--
JAN 2000												
11...	<1	4	--	<10	<1	--	--	3	--	2	13	--
FEB												
03...	<1	4	--	<10	<1	--	--	3	--	2	2	--
MAR												
07...	<1	3	--	<10	<1	--	52	1	--	2	2	--
21...	<1	4	--	<30	<1	--	81	2	--	3	<1	--
APR												
06...	<1	4	--	<30	<1	--	73	1	--	3	1	--
MAY												
01...	<1	6	--	<30	<1	--	76	<1	--	3	<1	--
22...	<1	7	302	<10	<1	222	62	<1	--	5	3	349
JUN												
12...	<1	3	--	<10	<1	--	37	<1	--	4	6	--
JUL												
06...	<1	4	--	<10	<1	--	61	2	--	4	2	--
AUG												
16...	<1	7	10	<30	<1	<1	95	9	--	6	<1	4
SEP												
25...	<1	3	--	<30	<1	--	48	4	--	4	3	--

E--Estimated.

YELLOWSTONE RIVER BASIN

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	THALLIUM, DISSOLVED (UG/L AS TL) (01057)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT 1999												
27...	--	--	--	--	--	--	--	--	4.3	2.8	418	343
NOV												
09...	<2	<1	--	--	9	--	2	--	4.3	1.5	397	354
DEC												
01...	--	--	--	--	--	--	--	--	3.8	1.1	424	449
JAN 2000												
11...	E1	<1	--	--	10	--	2	--	4.8	.5	85	--
FEB												
03...	E2	<1	--	--	10	--	3	--	3.6	.2	118	--
MAR												
07...	2	<1	1051	<.9	7	<1	2	--	3.6	10	2450	4410
21...	2	<1	1494	<.9	11	<1	26	--	4.2	2.0	593	669
APR												
06...	2	<1	1573	<.9	11	<1	11	--	4.6	1.2	446	489
MAY												
01...	2	<1	1397	<.9	9	<1	4	--	4.8	12	2000	2990
22...	5	<1	1408	<.9	9	1	2	1110	5.2	>50	25400	126000
JUN												
12...	2	<1	882	<.9	7	1	3	--	4.9	5.4	561	797
JUL												
06...	1	<1	1284	<.9	8	1	4	--	6.2	4.1	1040	675
AUG												
16...	1	<1	1794	<.9	16	29	7	8	7.0	.3	38	.75
SEP												
25...	.9	<1	1514	<.9	12	2	2	--	5.8	1.6	--	--

E--Estimated.

YELLOWSTONE RIVER BASIN

06329500 YELLOWSTONE RIVER NEAR SIDNEY

(National stream quality accounting network station)
(National water-quality assessment program)

LOCATION.--Lat 47°40'42", long 104°09'22", in $SW^1/_4NE^1/_4SW^1/_4$ sec.9, T.22 N., R.59 E., Richland County, Hydrologic Unit 10100004, on left bank at Montana-Dakota Utilities Company powerplant, 0.2 mi downstream from bridge on State Highway 23, 2.5 mi south of Sidney, 3.0 mi downstream from Fox Creek, and at river mile 29.2.

DRAINAGE AREA.--69,103 mi^2. Area at site 4.5 mi upstream, 68,812 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to September 1931 (published as "at Intake"), October 1933 to current year. If monthly figures of diversions to Lower Yellowstone Canal at Intake are added to records at this site, records equivalent to those published as Yellowstone River at Glendive (1898-1910, 1931-34) can be obtained. Monthly discharge only for some periods, published in WSP 1309. Monthly figures of diversions into Lower Yellowstone Canal prior to 1951 published in WSP 1309, 1951-60 published in WSP 1729, 1961-65 published in WSP 1916, 1966-70 published in WSP 2116, and 1971 to current year are published in annual reports.

GAGE.--Water-stage recorder. Datum of gage is 1,881.3 ft above sea level (levels by U.S. Army Corps of Engineers). Jan. 1, 1911, to Sept. 30, 1931, nonrecording gage at site 32 miles upstream at different datum. Apr. 9, 1934, water-stage recorder at two sites within 500 ft of highway bridge 0.2 mi upstream and May 17, 1945, to Apr. 3, 1952, nonrecording gage on same bridge at datum 1.36 ft higher. Apr. 4, 1952, to Nov. 19, 1967, water-stage recorder at site 4.5 mi upstream at different datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated to some extent by Bighorn Lake, usable capacity, 1,312,000 acre-ft, on the Bighorn River and on other tributary streams in Wyoming and Montana. Diversion for irrigation of about 1,250,000 acres upstream from station. Lower Yellowstone Project Main Canal diverts from left bank in $NW^1/_4$ sec.36, T.18 N., R.56 E., at Lower Yellowstone diversion dam at Intake about 36.6 mi upstream for irrigation of about 52,000 acres of which about one-third lies upstream from station. U. S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8040	7890	7190	e6500	e6000	e6500	6130	7340	34000	16200	4780	3160
2	7690	7880	7290	e6300	e6000	e6500	6170	7120	34100	15300	4710	3300
3	8230	7830	7270	6200	e6000	e6600	6080	8240	31400	14600	4690	3470
4	8490	7850	7220	4850	e6200	e6600	6080	10600	29400	14900	4640	3670
5	8860	7870	7120	5750	e6500	e6600	5790	9180	26400	16000	4660	3760
6	8960	7920	6910	5180	e6500	e6700	5810	9630	25500	16700	4740	3890
7	8940	7760	6900	5890	e6400	e6600	5700	12000	27500	15200	4570	3980
8	8900	7460	6830	5690	e6300	e6600	5630	14100	28400	14300	4460	4010
9	8830	7560	6720	5760	e6300	e6600	5590	14300	29100	13800	4390	4030
10	8860	7600	6690	e6000	e6300	e6600	5610	13400	30400	11700	4390	4040
11	8770	7570	6610	e6000	e6300	e6600	5660	12200	32000	14500	4380	4060
12	8870	7530	6700	e5500	e6200	e6700	5400	11000	31600	13100	4240	4100
13	8880	7470	6380	e5000	e6100	e6800	5330	10100	29100	11400	3880	4200
14	8880	7460	6220	e5000	e6000	6560	5550	9590	25300	9880	3650	4210
15	8900	7480	6190	e5200	e6000	6600	5690	9120	22400	8900	3600	4180
16	8930	7460	6470	e5500	e5800	6530	5820	8400	22200	7850	3450	4160
17	8920	7460	6820	e6000	e6200	6460	5980	7590	23200	7240	3350	4080
18	8750	7450	6910	5230	e6200	6380	5930	6730	20800	6830	3260	4000
19	8530	7470	6470	6100	e6200	6280	6120	5960	22300	6570	3080	3930
20	8490	7440	6120	6410	e6200	6180	6390	5720	21400	6350	3030	3930
21	8550	7440	7010	6640	e6000	6090	6180	10000	19100	6410	2980	3950
22	8560	7280	6220	6530	e5900	6040	6010	12900	17900	6780	2920	4070
23	8550	7100	6600	6710	e6000	6040	6050	14400	20000	6940	2930	4280
24	8550	7050	e6700	6620	e6200	6030	6050	14100	20400	6910	2940	4530
25	8490	7020	e6800	e6500	e6500	5980	6020	15100	18200	6610	2930	4750
26	8450	6980	e6900	e6400	e6500	5940	6590	17800	18100	6130	2900	5360
27	8440	7000	e6800	e6300	e6500	5860	7900	21600	18700	5720	2880	5720
28	8460	7020	e6800	e6400	e6500	5880	8970	23600	19600	5430	2890	6000
29	8420	7080	e6700	e6800	e6500	5930	8660	26300	19700	5210	2900	6300
30	8430	7030	e6700	e6500	---	6030	7890	27600	17900	5050	2920	6400
31	8140	---	e6600	e6200	---	6010	---	27200	---	4880	3050	---
TOTAL	266760	223410	208860	185660	180300	196820	186780	402920	736100	307390	114190	129520
MEAN	8605	7447	6737	5989	6217	6349	6226	13000	24540	9916	3684	4317
MAX	8960	7920	7290	6800	6500	6800	8970	27600	34100	16700	4780	6400
MIN	7690	6980	6120	4850	5800	5860	5330	5720	17900	4880	2880	3160
AC-FT	529100	443100	414300	368300	357600	390400	370500	799200	1460000	609700	226500	256900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 2000, BY WATER YEAR (WY)*

MEAN	8371	7401	5999	5764	6924	11080	10430	18490	39260	23370	8851	7234
MAX	29130	12150	9594	13110	17750	25980	39160	38100	77280	55000	20470	16000
(WY)	1924	1924	1976	1925	1971	1972	1924	1928	1918	1917	1912	1941
MIN	3726	3700	3019	2087	2702	5191	2821	5409	11580	3311	1602	2389
(WY)	1922	1922	1961	1937	1936	1961	1961	1961	1919	1919	1961	1934

YELLOWSTONE RIVER BASIN

06329500 YELLOWSTONE RIVER NEAR SIDNEY--Continued

(National stream quality accounting network station)
(National water-quality assessment program)

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1911 - 2000*	
ANNUAL TOTAL	4837650		3138710			
ANNUAL MEAN	13250		8576		12780	
HIGHEST ANNUAL MEAN					21250	1924
LOWEST ANNUAL MEAN					5814	1934
HIGHEST DAILY MEAN	53500	Jun 26	34100	Jun 2	142000	Jun 21 1921
LOWEST DAILY MEAN	6120	Dec 20	2880	Aug 27	570	May 17 1961
ANNUAL SEVEN-DAY MINIMUM	6460	Dec 14	2910	Aug 24	1010	Aug 8 1961
INSTANTANEOUS PEAK FLOW			a36000	Jun 1	c159000	Jun 21 1921
INSTANTANEOUS PEAK STAGE			b11.86	Jan 15	b24.03	Mar 6 1994
INSTANTANEOUS LOW FLOW					d470	May 17 1961
ANNUAL RUNOFF (AC-FT)	9595000		6226000		9257000	
10 PERCENT EXCEEDS	29500		17000		28600	
50 PERCENT EXCEEDS	8820		6600		8140	
90 PERCENT EXCEEDS	7030		4090		4200	

SUMMARY STATISTICS	WATER YEARS 1911 - 1965**		WATER YEARS 1967 - 2000***	
ANNUAL TOTAL				
ANNUAL MEAN	12890		12730	
HIGHEST ANNUAL MEAN	21250	1924	19150	1997
LOWEST ANNUAL MEAN	5814	1934	7319	1988
HIGHEST DAILY MEAN	142000	Jun 21 1921	104000	May 23 1978
LOWEST DAILY MEAN	570	May 17 1961	800	Jan 2 1989
ANNUAL SEVEN-DAY MINIMUM	1010	Aug 8 1961	1500	Aug 21 1988
INSTANTANEOUS PEAK FLOW	c159000	Jun 21 1921	g111000	May 23 1978
INSTANTANEOUS PEAK STAGE	f21.85	Mar 22 1947	b24.03	Mar 6 1994
INSTANTANEOUS LOW FLOW	d470	May 17 1961	d470	May 17 1961
ANNUAL RUNOFF (AC-FT)	9341000		9226000	
10 PERCENT EXCEEDS	29900		27400	
50 PERCENT EXCEEDS	7690		8860	
90 PERCENT EXCEEDS	3820		5130	

*--During period of operation 1911-31, 1934-current year. Published as "at Intake" 1911-31.
**--Prior to Bighorn Lake reaching operational level.
***-- After Bighorn Lake reached operational level.
a--Gage height, 11.09 ft.
b--Backwater from ice.
c--Gage height, 12.6 ft, site and datum then in use.
d--Gage height, 2.73 ft, site and datum then in use.
e--Estimated.
f--Backwater from ice, site and datum then in use.
g--Gage height, 20.02 ft.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1964 to September 1981.
WATER TEMPERATURE: January 1951 to September 1985.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1981, October 1982 to September 1991, October 1991 to current year (seasonal records only).

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office. Prior to July 1972, sediment sampling and record computation under supervision of U.S. Army Corps of Engineers. Samples were collected this year as part of both the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District and the National Stream Quality Accounting Network (NASQAN) program under the direction of the Montana District.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1965-81): Maximum daily, 1,220 microsiemens per centimeter (µS/cm) at 25.0°C, Apr. 6, 1979; minimum daily, 261 microsiemens per centimeter (µS/cm) at 25.0°C, June 4, 1966.
WATER TEMPERATURE (water years 1951-85): Maximum, 29.0°C July 23, 1960; minimum, 0.0°C on many days during winter.
SEDIMENT CONCENTRATION: Maximum daily mean, 26,800 mg/L May 8, 1975; minimum daily mean, 8 mg/L Jan. 9, 1973.
SEDIMENT LOAD: Maximum daily, 3,030,000 tons May 8, 1975; minimum daily, 63 tons Jan. 2, 1989.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 3,250 mg/L, July 11; minimum daily mean, 12 mg/L, Nov. 21-22.
SEDIMENT LOAD: Maximum daily, 218,000 tons, June 1; minimum daily, 236 tons, Nov. 22.

06329500 YELLOWSTONE RIVER NEAR SIDNEY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS /CM) (61726)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)
OCT 1999											
06...	0900	8980	.064	--	713	10.8	101	8.5	643	6.0	9.5
NOV											
09...	1430	7570	--	--	710	11.8	105	8.4	673	7.0	7.0
DEC											
01...	0900	7170	--	--	709	13.8	109	8.3	711	6.0	2.5
JAN 2000											
11...	0945	7870	--	--	628	8.4	70	8.0	732	-10.0	0.0
FEB											
02...	1400	7700	--	--	709	15.0	110	8.4	741	5.0	0.0
MAR											
21...	0930	6110	.066	.049	722	11.6	96	8.5	833	5.5	5.0
APR											
19...	1000	6080	.071	.051	717	9.6	91	8.8	798	5.0	10.0
MAY											
02...	0900	6980	.091	.068	714	9.3	100	8.7	585	20.5	15.5
22...	1215	12700	.075	.046	712	8.2	92	8.6	532	21.5	17.5
23...	1430	14400	--	--	702	9.0	105	7.6	549	24.0	18.5
JUN											
05...	1200	26300	.099	.073	720	8.7	95	8.2	289	19.0	17.0
12...	0900	32000	--	--	710	8.0	93	7.9	237	18.0	19.0
26...	1115	17800	.063	.047	723	8.4	96	8.6	316	20.0	19.0
JUL											
19...	0830	6630	.070	.052	721	7.4	90	8.4	476	17.0	22.0
AUG											
07...	1345	4570	.086	.064	714	7.3	93	8.5	614	31.0	24.0
22...	0945	2930	.074	.054	721	7.9	88	8.5	709	20.0	18.0
SEP											
06...	0830	3900	.074	.054	713	7.5	89	8.5	739	17.0	20.5

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1999											
06...	210	51	20	3.7	52	2	156	144	175	0	9.2
NOV											
09...	230	57	22	3.1	54	2	166	134	149	7	10
DEC											
01...	250	63	22	3.1	57	2	171	142	149	12	12
JAN 2000											
11...	250	60	24	3.4	61	2	177	168	205	0	12
FEB											
02...	250	62	24	3.5	60	2	175	189	231	0	11
MAR											
21...	280	67	26	3.9	73	2	185	178	210	40	13
APR											
19...	230	55	23	3.7	70	2	168	167	190	70	13
MAY											
02...	190	46	18	2.9	49	2	129	126	146	40	11
22...	170	43	16	2.8	42	1	129	124	140	50	8.0
23...	170	43	15	3.4	46	2	121	121	147	0	10
JUN											
05...	99	25	8.8	1.8	20	.9	77	75	92	0	4.2
12...	79	20	6.8	1.6	16	.8	69	70	85	0	3.0
26...	100	26	9.4	1.8	23	1	86	83	96	3	4.4
JUL											
19...	150	37	14	2.7	38	1	121	119	134	5	6.8
AUG											
07...	200	48	19	4.2	55	2	156	155	175	7	7.8
22...	230	54	23	4.0	65	2	173	164	194	3	9.2
SEP											
06...	230	52	24	4.2	66	2	174	171	204	2	9.8

YELLOWSTONE RIVER BASIN

06329500 YELLOWSTONE RIVER NEAR SIDNEY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)
OCT 1999											
06...	.4	7.5	160	.2	.3	<.002	.13	.002	E.004	.03	<.001
NOV											
09...	.5	8.4	180	.2	.3	<.02	.15	<.01	<.006	.02	<.01
DEC											
01...	.4	10	190	.2	.2	<.02	.29	<.01	E.005	.01	<.01
JAN 2000											
11...	.4	10	200	.1	.2	<.02	.38	<.01	<.006	.01	<.01
FEB											
02...	.5	10	190	.1	.2	<.02	.34	<.01	E.004	.03	<.01
MAR											
21...	.5	9.9	230	.2	.4	.009	.29	.003	E.004	.07	.003
APR											
19...	.6	6.8	220	.2	.8	.009	.10	.003	<.006	.25	<.001
MAY											
02...	.4	11	150	.2	.5	<.002	.028	.007	E.004	.09	<.001
22...	.4	8.9	130	.1	.7	.006	<.005	<.001	.006	.26	.006
23...	.3	11	140	.2	.7	<.02	.27	.01	.007	.24	<.01
JUN											
05...	.3	11	57	.1	.7	.008	.18	.003	.020	.43	.016
12...	.2	11	41	.2	.8	<.02	.14	<.01	.018	.49	.01
26...	.2	9.7	62	.1	.5	<.002	<.005	.002	E.003	.16	.001
JUL											
19...	.5	7.9	110	.2	.4	<.002	<.005	.001	<.006	.11	.001
AUG											
07...	.5	8.4	150	.2	.6	<.002	<.005	.001	<.006	.17	.001
22...	.4	5.9	180	.2	.5	.003	.011	<.001	E.004	.05	.001
SEP											
06...	.4	4.5	190	.2	.5	.011	.005	.001	E.004	.06	.001

DATE	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	TURBIDITY (NTU) (00076)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)
OCT 1999											
06...	2.9	.3	393	.56	10000	10	--	--	4	--	--
NOV											
09...	2.7	.3	413	.60	9030	--	1	<1	6	49	<1
DEC											
01...	2.6	.3	449	.67	9600	--	--	--	--	--	--
JAN 2000											
11...	3.4	.2	469	.67	10400	--	<1	<1	5	54	<1
FEB											
02...	--	--	480	.67	10200	--	1	<1	6	52	<1
MAR											
21...	2.9	.5	535	.74	8940	33	3	<1	5	49	<1
APR											
19...	3.0	2.2	494	.70	8470	180	1	<1	4	53	<1
MAY											
02...	3.4	1.0	363	.51	7120	26	2	<1	6	40	<1
22...	3.3	1.8	326	.44	11200	39	15	<1	5	44	<1
23...	3.7	4.9	343	.48	13700	--	16	<1	3	49	<1
JUN											
05...	2.9	3.7	175	.24	12800	86	12	<1	3	30	<1
12...	2.6	4.7	142	.20	13000	340	14	<1	3	27	<1
26...	2.3	1.1	187	.26	9320	46	14	<1	4	31	<1
JUL											
19...	2.5	1.1	286	.40	5240	57	11	<1	5	42	<1
AUG											
07...	3.1	2.2	389	.54	4890	99	3	<1	5	52	<1
22...	3.3	.7	445	.62	3630	17	1	<1	4	59	<1
SEP											
06...	3.3	.7	458	.65	5050	25	1	<1	4	60	<1

E--Estimated.

YELLOWSTONE RIVER BASIN

06329500 YELLOWSTONE RIVER NEAR SIDNEY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT 1999											
06...	136	--	--	--	--	<10	--	36	--	--	--
NOV											
09...	--	<1	<.8	<1	1	--	<1	--	6	<.2	2
DEC											
01...	--	--	--	--	--	<10	--	--	6	--	--
JAN 2000											
11...	--	<1	<.8	<1	2	<10	<1	--	10	--	2
FEB											
02...	--	<1	<.8	<1	2	<10	<1	--	4	--	2
MAR											
21...	164	<1	<1	<1	2	<10	<1	43	6	--	2
APR											
19...	162	<1	<.8	<1	3	<10	<1	44	2	--	2
MAY											
02...	127	<1	<.8	<1	2	<10	<1	36	<1	--	2
22...	129	<1	<.8	<1	2	<10	<1	37	<1	--	2
23...	108	<1	<.8	<1	2	<10	<1	29	<1	--	2
JUN											
05...	58	<1	<.8	<1	1	<10	<1	17	<1	--	<1
12...	54	<1	<.8	<1	1	<10	<1	14	<1	--	<1
26...	66	<1	<.8	<1	1	<10	<1	21	<1	--	1
JUL											
19...	107	<1	<.8	<1	2	<10	<1	E27	<1	--	2
AUG											
07...	146	<1	<.8	<1	3	<10	<1	38	1	--	2
22...	172	<1	<.8	<1	2	<10	<1	43	6	--	3
SEP											
06...	173	<1	<.8	<1	2	<10	<1	42	3	--	2

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	THAL-LIUM, DIS-SOLVED (UG/L AS TL) (01057)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999											
06...	--	<2	--	520	--	--	<10	--	27	655	55
NOV											
09...	2	E1	<1	--	--	4	--	1	11	225	--
DEC											
01...	--	--	--	--	--	--	--	--	12	232	--
JAN 2000											
11...	5	E2	<1	--	--	4	--	1	10	212	--
FEB											
02...	<1	E1	<1	--	--	5	--	<1	56	1160	--
MAR											
21...	3	E1	<1	650	<.9	5	<10	<1	73	1200	86
APR											
19...	<1	E2	<1	630	<.9	4	<10	1	448	7350	99
MAY											
02...	<1	<2	<1	460	<.9	3	<10	<1	103	1940	89
22...	1	E1	<1	410	<.9	3	<10	2	312	10700	70
23...	2	1	<1	430	<.9	3	2	4	922	35800	--
JUN											
05...	2	<2	<1	220	<.9	1	<10	2	562	39900	64
12...	2	<.7	<1	184	<.9	1	2	3	684	59100	--
26...	<1	<2	<1	230	<.9	1	E8	2	202	9710	48
JUL											
19...	3	<2	<1	390	<.9	2	E7	3	142	2540	95
AUG											
07...	3	<2	<1	510	<.9	3	<10	<1	255	3150	99
22...	2	<2	<1	590	<.9	4	<10	1	36	285	98
SEP											
06...	<1	<2	<1	590	<.9	4	<10	1	65	684	96

E--Estimated.

DATE	TIME	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAR 2000											
21...	0930	--	1	26	80	86	88	89	90	100	--
MAY											
02...	0900	--	1	43	67	68	70	71	77	100	--
JUN											
05...	1200	--	8	87	91	91	91	91	91	91	100
26...	1115	--	2	32	67	68	68	69	73	91	100
JUL											
19...	0830	--	3	28	61	63	63	64	69	80	100
AUG											
22...	0945	3	17	37	62	64	64	65	68	80	100

DATE	TIME	PHOS-PHORUS SEDI-MENT SUSP. PERCENT (30292)	CARBON, ORGANIC SUS-PENDED, TOTAL PERCENT (50465)	CARBON SED. SUSP. PERCENT (30244)	ALUM-INUM SED,SUS PERCENT (30221)	AN-TIMONY SED. SUSP. (UG/G) (29816)	ARSENIC SED. SUSP. (UG/G) (29818)	BARIUM SED. SUSP. (UG/G) (29820)	BERYL-LIUM SED. SUSP. (UG/G) (29822)	CADMIUM SED. SUSP. (UG/G) (29826)
MAR 2000										
21...	0930	.077	1.7	2.6	5.8	1.0	15	200	2	.2
APR										
19...	1000	.070	1.3	1.3	9.9	1.0	11	650	2	.3
JUN										
05...	1200	.082	1.1	1.7	6.3	.7	12	790	2	.3
AUG										
07...	1345	.068	1.2	1.6	8.3	2.1	9.3	560	2	.3

DATE	CHRO-MIUM SED. SUSP. (UG/G) (29829)	COBALT SEDI-MENT SUSP. (UG/G) (35031)	COPPER SED. SUSP. (UG/G) (29832)	IRON SEDI-MENT SUSP. PERCENT (30269)	LEAD SED. SUSP. (UG/G) (29836)	LITHIUM SEDI-MENT SUSP. (UG/G) (35050)	MAN-GANESE SED. SUSP. (UG/G) (29839)	MERCURY SED. SUSP. (UG/G) (29841)	MOLYB-DENUM SED. SUSP. (UG/G) (29843)	NICKEL SED. SUSP. (UG/G) (29845)
MAR 2000										
21...	72	10	36	2.4	17	44	660	.01	<5	34
APR										
19...	110	19	36	3.8	19	46	470	.05	<5	46
JUN										
05...	65	12	23	2.8	18	28	570	.02	<5	30
AUG										
07...	97	14	28	3.3	21	42	510	.05	1	36

DATE	SELE-NIUM SED. SUSP. (UG/G) (29847)	SILVER SED. SUSP. (UG/G) (29850)	STRON-TIUM SEDI-MENT SUSP. (UG/G) (35040)	THAL-LIUM SUS SED (UG/G) (49955)	TITA-NIUM SEDI-MENT SUSP. PERCENT (30317)	VANA-DIUM SED. SUSP. (UG/G) (29853)	ZINC SED. SUSP. (UG/G) (29855)	URANIUM SEDI-MENT SUSP. (UG/G) (35046)	SEDI-MENT SUSP., FLOW-THROUGH CENTRIF (MG/L) (50279)
MAR 2000									
21...	1	<1	370	<50	.26	91	80	<50	79
APR									
19...	1	<1	250	<50	.44	150	120	<50	391
JUN									
05...	1	<1	260	<50	.30	94	72	<50	471
AUG									
07...	1	<1	180	<50	.39	120	90	<50	244

DATE	TIME	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DISSOLVED (UG/L) (34253)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
OCT 1999										
06...	0900	<.003	<.002	<.002	<.002	.006	<.002	<.002	<.003	<.003
NOV										
09...	1430	<.003	<.002	<.002	<.002	.006	<.002	<.002	<.003	<.003
DEC										
01...	0900	<.003	<.002	<.002	<.002	.006	<.002	<.002	<.003	<.003
JAN 2000										
11...	0945	<.003	<.002	<.002	<.002	<.005	<.002	<.002	<.003	<.003
FEB										
02...	1400	<.003	<.002	<.002	<.002	.004	<.002	<.002	<.003	<.003
MAR										
21...	0930	<.003	<.002	<.002	<.002	<.005	<.002	<.002	<.003	<.003
APR										
19...	1000	<.003	<.002	<.002	<.002	E.003	<.002	<.002	<.003	<.003
MAY										
02...	0900	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003
22...	1215	<.003	<.002	<.002	<.002	E.003	<.002	<.002	<.003	<.003
23...	1430	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003
JUN										
05...	1200	<.003	<.002	E.003	<.002	E.002	<.002	<.002	<.003	E.021
12...	0900	<.003	<.002	<.002	<.002	.004	<.002	<.002	E.005	<.030
26...	1115	<.003	<.002	<.002	<.002	.009	<.002	<.002	<.003	<.003
JUL										
19...	0830	<.003	<.002	<.002	<.002	.008	<.002	<.002	<.003	<.003
AUG										
07...	1345	<.003	.015	<.002	<.002	.019	<.002	<.002	<.003	<.003
22...	0945	<.003	<.002	<.002	<.002	.005	<.002	<.002	<.003	<.003
SEP										
06...	0830	<.003	<.002	<.002	<.002	.005	<.002	<.002	<.003	<.003

DATE	CHLORPYRIFOS DISSOLVED (UG/L) (38933)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DIAZINON, DISSOLVED (UG/L) (39572)	DIELDRIN DISSOLVED (UG/L) (39381)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
OCT 1999										
06...	<.004	<.004	<.002	E.004	99	<.002	<.001	<.017	<.002	<.004
NOV										
09...	<.004	.008	<.002	E.004	106	<.002	<.001	<.017	<.002	<.004
DEC										
01...	<.004	<.004	<.002	<.004	110	<.002	<.001	<.017	<.002	<.004
JAN 2000										
11...	<.004	<.004	<.002	E.005	97	<.002	<.001	<.017	<.002	<.004
FEB										
02...	<.004	<.004	<.002	E.004	93	<.002	<.001	<.017	<.002	<.004
MAR										
21...	<.004	<.004	<.002	<.002	92	<.002	<.001	<.017	<.002	<.004
APR										
19...	<.004	<.004	<.002	E.002	113	<.002	<.001	<.017	<.070	<.004
MAY										
02...	E.002	<.004	<.002	<.002	84	<.002	<.001	<.017	<.002	<.004
22...	<.004	<.004	<.002	<.002	103	<.002	<.001	<.017	<.002	<.004
23...	<.004	<.004	<.002	<.002	107	<.002	<.001	<.017	<.002	<.004
JUN										
05...	<.004	<.004	<.002	<.002	110	<.002	<.001	<.017	<.013	<.004
12...	E.002	<.004	<.002	E.001	96	<.002	<.001	<.017	E.003	<.004
26...	E.002	.004	E.002	E.003	108	<.002	<.001	<.017	<.010	<.004
JUL										
19...	<.004	<.004	<.002	<.002	111	<.002	<.001	<.017	<.002	<.004
AUG										
07...	<.004	<.004	<.002	E.005	100	<.002	<.001	<.017	<.002	<.004
22...	<.004	<.004	<.002	E.004	124	<.002	<.001	<.017	<.002	<.004
SEP										
06...	<.004	.005	<.002	E.004	108	<.002	<.001	<.017	<.002	<.004

E--Estimated.

YELLOWSTONE RIVER BASIN

06329500 YELLOWSTONE RIVER NEAR SIDNEY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)
OCT 1999										
06...	<.003	<.003	94	<.004	<.002	<.005	<.001	<.006	.006	<.004
NOV										
09...	<.003	<.003	97	<.004	<.002	<.005	<.001	<.006	.006	<.004
DEC										
01...	<.003	<.003	93	<.004	<.002	<.005	<.001	<.006	<.002	<.004
JAN 2000										
11...	<.003	<.003	95	<.004	<.002	<.005	<.001	<.006	.005	<.004
FEB										
02...	<.003	<.003	99	<.004	<.002	<.005	<.001	<.006	.005	<.004
MAR										
21...	<.003	<.003	73	<.004	<.002	<.005	<.001	<.006	<.002	<.004
APR										
19...	<.003	<.003	98	<.004	<.002	<.005	<.001	<.006	<.002	<.004
MAY										
02...	<.003	<.003	89	<.004	<.002	<.005	<.001	<.006	<.002	<.004
22...	<.003	<.003	100	<.004	<.002	<.005	<.001	<.006	<.002	<.004
23...	<.003	<.003	101	<.004	<.002	<.005	<.001	<.006	<.002	<.004
JUN										
05...	<.003	<.003	107	<.004	<.002	<.005	<.001	<.006	E.003	<.004
12...	<.003	<.003	83	<.004	<.002	<.005	<.001	<.006	.004	<.004
26...	<.003	<.003	99	<.004	<.002	<.005	<.001	<.006	.006	<.004
JUL										
19...	<.003	<.003	91	<.004	<.002	<.005	<.001	<.006	.012	<.004
AUG										
07...	<.003	<.003	99	<.004	<.002	<.005	<.001	<.006	.009	<.004
22...	<.003	<.003	103	<.004	<.002	<.005	<.001	<.006	.006	<.004
SEP										
06...	<.003	<.003	103	<.004	<.002	.006	<.001	<.006	E.004	<.004

DATE	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT 1999										
06...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
NOV										
09...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	E.007	<.003
DEC										
01...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
JAN 2000										
11...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	E.007	<.003
FEB										
02...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	E.006	<.003
MAR										
21...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
APR										
19...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
MAY										
02...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
22...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	E.011	<.003
23...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
JUN										
05...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	E.001	<.003
12...	<.004	<.003	E.001	<.004	<.004	<.004	<.005	<.002	E.002	<.003
26...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
JUL										
19...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
AUG										
07...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
22...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
SEP										
06...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003

E--Estimated.

06329500 YELLOWSTONE RIVER NEAR SIDNEY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	PROPACHLOR, WATER, DISS, REC (UG/L) (04024)	PROPANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PROPARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SIMAZINE, WATER, DISS, REC (UG/L) (04035)	TEBUTHIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TERBACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TERBUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIOBENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIALLATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRIFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT 1999										
06...	<.007	<.004	<.013	<.005	E.002	<.007	<.013	<.002	<.001	<.002
NOV										
09...	<.007	<.004	--	<.005	<.010	<.007	<.013	<.002	<.001	<.002
DEC										
01...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002
JAN 2000										
11...	<.007	<.004	<.013	<.005	E.007	<.007	<.013	<.002	<.002	<.002
FEB										
02...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002
MAR										
21...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.005	<.002
APR										
19...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	E.002	<.002
MAY										
02...	<.007	<.004	<.013	<.005	E.004	<.007	<.013	<.002	<.001	<.002
22...	<.007	<.004	--	.013	<.010	<.007	<.013	<.002	.006	<.002
23...	<.007	<.004	<.013	.014	<.010	<.007	<.013	<.002	.008	<.002
JUN										
05...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	.006	<.002
12...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	E.002	<.002
26...	<.007	<.004	--	<.005	<.010	<.007	<.013	<.002	E.003	<.002
JUL										
19...	<.007	<.004	<.013	<.005	.017	<.007	<.013	<.002	<.001	<.002
AUG										
07...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002
22...	<.007	<.004	<.013	<.005	<.010	<.007	<.013	<.002	<.001	<.002
SEP										
06...	<.007	<.004	--	<.005	<.010	<.007	<.013	<.002	<.001	<.002

E--Estimated.

YELLOWSTONE RIVER BASIN

06329500 YELLOWSTONE RIVER NEAR SIDNEY--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	26	564	36	767							338	5930
2	24	498	42	894							330	5790
3	23	511	34	719							335	5970
4	26	596	24	509							348	6200
5	29	694	21	446							377	6720
6	30	726	20	428							415	7510
7	30	724	20	419							462	8230
8	30	721	20	403							459	8180
9	30	715	19	388							332	5920
10	29	694	17	349							341	6080
11	28	663	17	347							528	9410
12	28	671	17	346							572	10300
13	29	695	16	323							427	7840
14	33	791	16	322							182	3220
15	38	913	17	343							148	2640
16	37	892	22	443							109	1920
17	33	795	23	463							95	1660
18	29	685	19	382							91	1570
19	26	599	16	323							92	1560
20	22	504	14	281							86	1430
21	22	508	12	241							71	1170
22	21	485	12	236							66	1080
23	21	485	13	249							60	978
24	21	485	14	266							56	912
25	21	481	16	303							57	920
26	21	479	16	302							53	850
27	21	479	15	284							45	712
28	21	480	14	265							41	651
29	21	477	13	249							38	608
30	21	478	13	247							39	635
31	24	527	---	---							39	633
TOTAL	---	19015	---	11537							---	117229

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	51	844	104	2060	2380	218000	211	9230	46	594	47	401
2	66	1100	95	1830	1900	175000	207	8550	45	572	50	446
3	54	886	140	3110	950	80500	250	9860	44	557	53	497
4	96	1580	355	10200	815	64700	380	15300	43	539	55	545
5	148	2310	239	5920	591	42100	1600	69100	44	554	56	569
6	116	1820	204	5300	591	40700	2450	110000	59	755	56	588
7	60	923	391	12700	580	43100	1780	73100	190	2340	49	527
8	41	623	631	24000	570	43700	1680	64900	115	1380	43	466
9	39	589	571	22000	600	47100	2800	104000	51	605	40	435
10	36	545	432	15600	670	55000	2450	77400	54	640	38	415
11	37	565	320	10500	862	74500	3250	127000	59	698	38	417
12	82	1200	258	7660	780	66500	2920	103000	59	675	41	454
13	48	691	190	5180	820	64400	2080	64000	52	545	43	488
14	47	704	184	4760	548	37400	1200	32000	46	453	42	477
15	41	630	164	4040	468	28300	500	12000	43	418	38	429
16	152	2390	126	2860	442	26500	245	5190	42	391	35	393
17	630	10200	109	2230	536	33600	185	3620	41	371	33	364
18	853	13700	98	1780	418	23500	142	2620	42	370	33	356
19	420	6940	82	1320	415	25000	116	2060	44	366	32	340
20	180	3110	75	1160	352	20300	100	1710	43	352	28	297
21	126	2100	280	7560	340	17500	86	1490	39	314	25	267
22	90	1460	340	11800	342	16500	76	1390	36	284	22	242
23	82	1340	840	32700	386	20800	82	1540	36	285	26	300
24	66	1080	2750	105000	320	17600	85	1590	37	294	43	526
25	64	1040	3110	127000	243	11900	80	1430	37	293	75	962
26	74	1320	2610	125000	274	13400	70	1160	38	298	227	3290
27	176	3750	2450	143000	357	18000	60	927	38	295	238	3680
28	230	5570	1950	124000	336	17800	53	777	37	289	143	2320
29	216	5050	1630	116000	275	14600	50	703	35	274	93	1580
30	145	3090	1430	107000	243	11700	48	654	36	284	92	1590
31	---	---	1340	98400	---	---	46	606	41	338	---	---
TOTAL	---	77150	---	1141670	---	1369700	---	906907	---	16423	---	23661

SMALLER RESERVOIRS IN MISSOURI RIVER BASIN IN MONTANA

06012000 LIMA RESERVOIR--Lat 44°39'16", long 112°21'54", 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. Datum 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, 71,690 acre-ft, May 25, elevation 6,580.67 ft; minimum contents, 12,560 acre-ft, Sept. 17, elevation, 6,561.24 ft.

06038000 HEBGEN LAKE.--Lat 44°51'51", long 111°20'09", in SW$^1/_4$NW$^1/_4$ 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. Datum of gage is at sea level (levels by The Montana Power Co.). Prior to earthquake of Aug. 17, 1959, datum 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, 370,700 acre-ft, Oct. 2, elevation, 6,534.24 ft; minimum observed, 282,500 acre-ft, Apr. 11, elevation, 6,526.77 ft.

06040500 ENNIS LAKE.--Lat 45°28'12", long 111°38'15", in NW$^1/_4$SW$^1/_4$ 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 1939, 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. Datum of gage is at Montana Power Company datum (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, 37,300 acre-ft, May 29 and June 6, elevation, 4,840.80 ft; minimum observed, 27,800 acre-ft, Feb. 1, 2 and Mar. 26, 27, elevation, 4,838.20 ft.

06064500 LAKE HELENA.--Lat 46°45'58", long 111°53'10", in SE$^1/_4$SW$^1/_4$ 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. Datum 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, 11,810 acre-ft, Aug. 2, 1960, Dec. 10, 1962, July 19, 20, Sept. 4, 1963, Aug. 15, 1968, Apr. 6, 1973, June 26, 1980, May 14-16, 1991, elevation, 3,635.60 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, on many days, elevation, 3,635.40 ft; minimum observed, 6,530 acre-ft, Sept. 30, elevation, 3,632.90 ft.

SMALLER RESERVOIRS IN MISSOURI RIVER BASIN IN MONTANA--Continued

06065000 HAUSER LAKE.--Lat 46°45'58", long 111°53'10", 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. Datum 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, 55,110 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. 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 since May 1945, 53,630 acre-ft, Aug. 2, 1960, Dec. 10, 1961, July 19, 20, Sept. 4, 1963, Aug. 15, 1968, Apr. 6, 1973, June 26, 1980, May 14-16, 1991, elevation, 3,635.60 ft; no storage Jan. 31, Feb. 29, 1936.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 52,890 acre-ft, on many days, elevation, 3,635.40 ft; minimum observed, 43,900 acre-ft, Sept. 30, elevation, 3,632.90 ft.

06066000 HOLTER LAKE.--Lat 46°59'28", long 112°00'17", 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. Datum 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, 81,670 acre-ft, Dec. 17, elevation, 3,563.95 ft; minimum observed, 78,390 acre-ft, Oct. 8, elevation, 3,563.25 ft.

06079500 GIBSON RESERVOIR.--Lat 47°36'09", long 112°45'39", 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. Datum 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, 96,590 acre-ft, June 15, elevation, 4,724.09 ft; minimum, 5,010 acre-ft, Aug. 31, elevation, 4,609.00 ft.

06136500 FRESNO RESERVOIR.--Lat 48°36'304", long 109°56'45", 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. Datum 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, 544 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, 72,720 acre-ft, May 2, elevation, 2,567.76 ft; minimum observed, 8,960 acre-ft, Aug. 10, elevation, 2,540.76 ft.

SMALLER RESERVOIRS IN MISSOURI RIVER BASIN IN MONTANA--Continued

06204000 MYSTIC LAKE.--Lat 45°13'30", long 109°45'36", 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. Datum 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.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 20,920 acre-ft, Aug. July 10-14, elevation, 7,673.50 ft; no storage Apr. 12 to May 1.

06307000 TONGUE RIVER RESERVOIR.--Lat 45°07'48", long 106°46'13", in $SE^1/_4SE^1/_4NE^1/_4$ sec.13, T.8 W., R.40 E., Big Horn County, Hydrologic Unit 10090101, at dam on Tongue River, 4 mi upstream from Post Creek, 7 mi northeast of Decker, and at river mile 189.1. DRAINAGE AREA, 1,770 mi^2. PERIOD OF RECORD, December 1938 to current year. Record prior to September 1939, published only in WSP 1309 and those for January, February 1956, published only in WSP 1729. Nonrecording gage read most days. Datum of gage is at sea level (levels by Bureau of Reclamation) New capacity table effective September 1, 1996.

Reservoir is formed by earthfill dam with concrete spillway completed in May 1939. Total capacity, 79,070 acre-ft between elevation 3,374.4 ft, bottom of outlet, and 3,428.4 ft, spillway crest. Prior to October 1947, usable contents was 73,950 acre-ft at same elevations, due to sedimentation study. Dead storage, 711 acre-ft below elevation, 3,374.4 ft. Figures given herein represent usable contents. Water is used for irrigation. Records furnished by Montana Department of Natural Resources and Conservation. REVISED RECORDS, WSP 1309: 1947-50. WSP 1729: 1951, drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 79,500 acre-ft, June 21, 1999, elevation, 3,428.70 ft; no storage October 1939 to February 1940.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 79,120 acre-ft, June 7, 8, 18, elevation, 3,428.60 ft; minimum observed, 35,450 acre-ft, Dec. 13, elevation, 3,413.78 ft.

Monthend contents, in acre-feet, water year October 1999 to September 2000

Date	Lima Reservoir	Hebgen Lake	Ennis Lake	Lake Helena	Hauser Lake
Sept. 30	37,520	370,400	35,440	6,690	44,250
Oct. 31	39,180	362,400	36,950	10,680	51,780
Nov. 30	40,220	351,300	29,940	11,130	52,250
Dec. 31	42,270	334,400	28,880	11,130	52,520
Jan. 31	44,320	324,200	28,160	11,130	52,520
Feb. 29	47,000	320,600	28,880	11,360	52,890
Mar. 31	49,540	304,700	29,230	11,130	52,520
Apr. 30	70,250	305,700	32,120	11,130	52,520
May 31	70,310	355,500	36,200	11,130	52,520
June 30	54,800	366,200	35,820	10,900	52,150
July 31	34,480	358,500	36,200	10,900	52,150
Aug. 31	16,320	348,500	35,440	11,360	52,890
Sept. 30	13,040	332,800	34,320	6,530	43,900

Date	Holter Lake	Gibson Reservoir	Fresno Reservoir	Mystic Lake	Tongue River Reservoir
Sept. 30	80,590	29,800	46,820	16,100	a38,180
Oct. 31	80,070	36,740	45,560	9,020	b37,720
Nov. 30	81,250	44,890	44,870	8,140	b36,830
Dec. 31	81,060	43,320	43,060	7,370	a35,270
Jan. 31	81,200	43,540	40,340	6,370	35,940
Feb. 29	80,780	44,900	37,510	5,200	35,940
Mar. 31	80,920	50,290	45,270	966	36,160
Apr. 30	80,820	81,750	72,400	0	b40,380
May 31	81,290	95,770	51,170	5,700	78,740
June 30	80,780	90,020	42,080	18,910	78,740
July 31	80,490	35,200	20,250	20,920	66,730
Aug. 31	80,490	5,010	21,780	18,590	48,710
Sept. 30	80,440	6,220	39,230	14,930	39,710

a--Interpolated.

b--Figure of contents for first day of following month.

06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, SD

LOCATION.--Lat 45°32'49", long 103°58'23", in SW$^1/_4$ sec.2, T.18 N., R.1 E., Harding County, Hydrologic Unit 10110201, on left bank 15 ft upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 mi^2, approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1904. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,108.98 ft above sea level. Sept. 2, 1903, to Nov. 30, 1906, nonrecording gage at site 0.5 mi upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft downstream, and Oct. 9, 1957, to Sept. 30, 1976, water-stage recorder at present site both at datum 2.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Small diversions upstream from station for irrigation. Satellite data-collection platform at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1952 reached a stage of about 18 ft, present datum, from local residents.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	7.8	e11	e10	e8.8	e43	15	21	11	3.3	.91	.70
2	10	7.6	e11	e9.1	e8.9	e41	15	19	11	3.2	1.3	.63
3	12	8.0	e11	e8.3	e8.9	e39	15	17	9.6	3.4	1.5	.82
4	13	7.6	e11	e8.0	e8.9	e39	14	14	8.7	6.2	1.5	.93
5	12	7.8	e10	e8.0	e9.0	e46	13	13	7.6	4.9	1.5	.93
6	11	7.8	e10	e8.2	e9.0	e47	13	15	7.2	3.7	1.4	1.1
7	9.2	8.3	e10	e8.6	e9.5	e42	13	13	6.9	2.4	1.5	1.2
8	8.1	8.2	e9.5	e9.0	e10	e36	15	19	6.7	2.1	1.6	1.0
9	6.6	8.1	e9.4	e9.4	e10	e30	15	19	6.6	1.6	1.5	.70
10	7.6	8.1	e9.4	e9.3	e9.0	e27	15	29	10	2.0	1.4	.71
11	10	14	e9.4	e9.2	e7.9	e26	14	23	8.6	3.8	1.6	.72
12	7.8	11	e9.6	e9.0	e7.4	e25	17	27	13	6.3	1.9	.77
13	6.8	10	e10	e8.7	e7.0	e24	16	30	11	3.8	8.1	1.2
14	6.7	9.1	e10	e8.3	e6.9	e24	14	24	8.1	2.4	4.5	1.1
15	6.9	8.4	e9.6	e8.3	e6.8	e23	14	25	8.5	2.5	3.1	.98
16	7.4	8.0	e9.5	e8.4	e7.0	e26	13	23	9.3	2.3	3.1	.91
17	7.3	7.8	e9.4	e8.4	e8.0	34	13	24	9.0	2.3	2.6	.81
18	7.7	10	e9.3	e8.5	e9.0	40	11	28	7.2	3.2	2.3	.77
19	8.1	12	e9.0	e8.5	e10	32	10	20	6.2	3.1	2.0	.91
20	7.5	13	e9.0	e8.5	e11	30	11	17	6.5	3.2	1.8	1.5
21	8.2	13	e9.0	e8.5	e12	31	11	16	5.6	2.7	.81	1.7
22	8.3	17	e9.0	e8.6	e13	32	11	15	5.8	2.6	1.1	3.8
23	7.5	e13	e9.1	e8.6	e15	26	11	13	5.5	2.0	.86	3.3
24	7.5	e15	e9.4	e8.6	e18	25	15	11	4.5	1.9	.89	2.4
25	7.4	e13	e9.8	e8.6	e22	21	16	11	5.5	2.9	1.8	2.6
26	8.0	e13	e10	e8.7	e35	19	16	13	5.5	1.3	1.1	3.7
27	7.9	e13	e10	e8.7	e52	18	14	15	4.7	.86	.83	2.5
28	7.7	e12	e10	e8.7	e54	17	13	14	5.0	1.3	1.1	2.2
29	7.9	e12	e11	e8.7	e52	16	16	12	3.5	1.1	.66	3.0
30	7.8	e12	e11	e8.8	---	16	25	10	3.5	1.1	.63	2.6
31	8.0	---	e11	e8.8	---	15	---	10	---	.98	.70	---
TOTAL	262.9	315.6	306.4	269.0	446.0	910	424	560	221.8	84.44	55.59	46.19
MEAN	8.48	10.5	9.88	8.68	15.4	29.4	14.1	18.1	7.39	2.72	1.79	1.54
MAX	13	17	11	10	54	47	25	30	13	6.3	8.1	3.8
MIN	6.6	7.6	9.0	8.0	6.8	15	10	10	3.5	.86	.63	.63
AC-FT	521	626	608	534	885	1800	841	1110	440	167	110	92

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1905, 1957 - 2000, BY WATER YEAR (WY)

MEAN	59.4	12.6	6.89	7.70	87.4	352	211	351	260	93.5	42.0	31.4
MAX	876	103	34.9	59.7	1112	2121	1198	1894	1107	961	537	244
(WY)	1972	1972	1972	1974	1996	1978	1971	1978	1967	1905	1906	1905
MIN	.29	.000	.000	.000	.000	1.95	1.97	1.12	.11	.000	.000	.61
(WY)	1905	1905	1905	1905	1969	1992	1981	1992	1961	1961	1904	1958

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1904-1905, 1957-2000	
ANNUAL TOTAL	47066.6		3901.92			
ANNUAL MEAN	129		10.7		b127	
HIGHEST ANNUAL MEAN					492	1978
LOWEST ANNUAL MEAN					4.68	1961
HIGHEST DAILY MEAN	1780	Jun 10	54	Feb 28	8560	Mar 24 1978
LOWEST DAILY MEAN	6.3	Sep 30	.63	Aug 30	c.00	Jul 31 1904
ANNUAL SEVEN-DAY MINIMUM	7.2	Oct 12	.72	Aug 29	.00	Jul 31 1904
INSTANTANEOUS PEAK FLOW			79	Feb 26	9420	Mar 24 1978
INSTANTANEOUS PEAK STAGE			a3.29	Feb 26	16.90	Mar 24 1978
ANNUAL RUNOFF (AC-FT)	93360		7740		91760	
10 PERCENT EXCEEDS	290		23		240	
50 PERCENT EXCEEDS	27		8.9		11	
90 PERCENT EXCEEDS	8.1		1.3		1.2	

a--Backwater from ice.
b--Median of annual mean discharges, 110 ft^3/s.
c--No flow at times in some years.
e--Estimated.

LITTLE MISSOURI RIVER BASIN

06336600 BEAVER CREEK NEAR TROTTERS, ND

LOCATION.--Lat 47°09'47", long 103°59'32", in $SW^1/_4SW^1/_4NE^1/_4$ sec.33, T.143 N., R.105 W., Golden Valley County Hydrologic Unit 10110204, on left bank 100 ft upstream from bridge on county road, 2.4 mi east of Montana-North Dakota State line, 13 mi southwest of Trotters, 17 mi north of Beach, 20 mi upstream from Elk Creek, and 27 mi above mouth.
DRAINAGE AREA.--616 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORDS.--October 1977 to current year (seasonal records only since 1984).
REVISED RECORDS.--1982: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 2,370 ft above sea level, from topographic map.
REMARKS.--Water-discharge records fair except those for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 26 ft^3/s, Mar. 7, gage height, 3.66 ft, backwater from ice; minimum daily, no flow fro many days in July to September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0				e1.0	e10	5.6	4.6	1.1	e.06	.00	.00
2	1.0				e1.0	e8.0	6.9	4.2	1.1	e.06	.00	.00
3	1.2				e1.0	e7.5	7.5	3.7	.86	e.05	.00	.00
4	1.2				e1.0	e7.5	7.3	3.3	.42	e.04	.00	.00
5	1.2				e1.0	7.6	7.4	4.6	.33	e.03	.00	.00
6	1.3				e1.0	8.3	7.3	4.5	.23	e.02	.00	.00
7	---				e1.0	13	6.5	5.9	.13	e.03	.00	.00
8	---				e1.0	9.7	6.7	5.9	e.10	e.03	.00	.00
9	---				e1.0	8.7	6.3	6.4	e.09	e.05	.00	.00
10	---				e1.0	7.0	6.2	5.8	e.08	e.10	.00	.00
11	---				e1.0	6.1	6.0	5.6	.07	e.15	.00	.00
12	---				e1.0	5.9	5.4	5.4	.38	e.20	.00	.00
13	---				e1.0	5.8	5.3	5.4	.43	e.20	.00	.00
14	---				e1.0	5.7	6.2	5.1	.44	e.15	.00	.00
15	---				e1.0	5.8	6.5	4.9	1.2	e.10	.00	.00
16	---				e1.0	5.7	6.7	4.6	1.2	e.10	.00	.00
17	---				e1.0	5.8	7.2	4.1	1.3	e.50	.00	.00
18	---				e1.0	6.1	7.6	3.7	1.3	e2.0	.00	.00
19	---				e1.0	5.8	7.0	3.3	1.2	e1.5	.00	.03
20	---				e1.0	5.0	6.6	3.3	1.2	e1.0	.00	.21
21	---				e1.0	4.4	6.6	3.0	1.0	e.70	.00	.45
22	---				e1.0	4.6	6.1	2.8	.90	e.50	.00	.92
23	---				e2.0	4.4	5.4	2.3	.58	.28	.00	1.1
24	---				e5.0	4.4	e5.2	2.0	.38	.18	.00	.76
25	---				e6.0	4.4	e5.1	1.5	.21	.09	.00	e.40
26	---				e10	4.5	e5.1	1.5	.15	.11	.00	e.10
27	---				e9.0	4.9	e5.1	1.6	.16	.04	.00	e.04
28	---				e8.0	4.8	5.1	1.5	.07	.02	.00	e.00
29	---				e7.0	4.8	4.9	1.6	.07	.00	.00	e.00
30	---				---	5.7	4.9	1.5	e.06	.00	.00	e.00
31	---				---	5.6	---	.95	---	.00	.00	---
TOTAL	6.9				69.0	197.5	185.7	114.55	16.74	8.29	0.00	4.01
MEAN	1.15				2.38	6.37	6.19	3.70	.56	.27	.000	.13
MAX	1.3				10	13	7.6	6.4	1.3	2.0	.00	1.1
MIN	1.0				1.0	4.4	4.9	.95	.06	.00	.00	.00
AC-FT	14				137	392	368	227	33	16	.00	8.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2000, BY WATER YEAR (WY)

MEAN	1.10	2.62	2.59	4.40	30.0	109	49.1	16.5	16.7	10.8	2.25	.75
MAX	3.29	6.34	5.13	14.7	141	609	406	50.2	125	64.2	18.4	4.72
(WY)	1983	1983	1979	1983	1983	1978	1979	1999	1982	1997	1993	1986
MIN	.006	.010	.032	.000	.000	1.21	1.11	1.05	.12	.000	.000	.000
(WY)	1982	1982	1982	1982	1989	1991	1991	1981	1992	1988	1985	1981

SUMMARY STATISTICS	WATER YEARS 1978 - 2000		
ANNUAL MEAN	a33.3		
HIGHEST ANNUAL MEAN	a79.7		1978
LOWEST ANNUAL MEAN	a2.77		1981
HIGHEST DAILY MEAN	2500	Mar 22	1978
LOWEST DAILY MEAN	.00	Aug 1	1981
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 10	1981
INSTANTANEOUS PEAK FLOW	2720	Mar 29	1978
INSTANTANEOUS PEAK STAGE	b19.27	Mar 22	978
ANNUAL RUNOFF (AC-FT)	a24110		
10 PERCENT EXCEEDS	40		
50 PERCENT EXCEEDS	3.3		
90 PERCENT EXCEEDS	.00		

a--Based on complete water years only (1978-83).
b--Backwater from ice.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
MAR 2000											
28...	1600	4.9	8.5	8.3	2180	2210	14.0	8.3	540	90.0	77.0

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR 2000										
28...	8.3	6	340	57	357	9.2	.2	910	21.7	1650

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MAR 2000										
28...	1650	<1	40	<1	40	50	<.1	<1	<1	1200

KOOTENAI RIVER BASIN

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY

LOCATION.--Lat 48°59'44", long 115°10'43", in NE$^1/_4$SW$^1/_4$SE$^1/_4$ sec.1, T.37 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, 0.3 mi south of international boundary, in middle of old channel 1.9 mi upstream from Young Creek, and 6.4 mi north of Rexford.

PERIOD OF RECORD.--Water years 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG) (00025)	TEMPERATURE AIR (DEG C) (00020)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)
OCT 1999							
14...	1030	698	7.5	3.6	<.002	.026	.002
14...	1100	--	--	3.7	.008	.052	.002
JUN 2000							
28...	1630	705	19.5	4.5	<.002	.11	.002
28...	1700	--	--	4.1	.003	.12	.001
JUL							
19...	1000	704	21.0	4.0	<.002	.052	.002
19...	1030	--	--	4.1	<.002	.11	.001
AUG							
15...	1000	703	14.0	3.7	.004	.011	.001
15...	1030	--	--	5.4	.002	.21	.001
SEP							
20...	1000	695	10.6	3.2	<.002	.022	.002
20...	1030	--	--	3.4	.004	.024	.001

DATE	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	DEPTH TO 1% OF SURFACE LIGHT (FEET) (00034)	INCID. LIGHT 400-700NM INTENS. (U-EINS /SQM/S) (00200)	LIGHT ATTENUATION COEFFICIENT (ALPHA/METER) (70971)	SAMPLING DEPTH (FEET) (00003)
OCT 1999						
14...	.003	<.008	39.0	663	.11	10
14...	.004	E.006	--	--	--	120
JUN 2000						
28...	<.001	E.005	30.0	121	.15	10
28...	<.001	E.007	--	--	--	87
JUL						
19...	.001	<.008	32.5	1780	.12	10
19...	.001	<.008	--	--	--	86
AUG						
15...	<.001	<.008	33.0	239	.08	10
15...	<.001	<.008	--	--	--	113
SEP						
20...	.001	<.008	52.0	146	.08	10
20...	.001	<.008	--	--	--	70

E--Estimated.

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)
JUN 2000							
28...	1630	100	29	7.9	.3	.1	2.1
28...	1700	99	27	7.3	.3	.1	1.7
AUG							
15...	1000	110	30	8.1	.4	.1	2.0
15...	1030	110	32	8.2	.4	.1	1.9

DATE	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SAMPLING DEPTH (FEET) (00003)
JUN 2000							
28...	92	1.7	<.1	14	.16	115	10
28...	87	1.4	<.1	12	.15	108	87
AUG							
15...	97	1.7	<.1	15	.16	119	10
15...	102	1.7	<.1	15	.17	127	113

DATE	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	LIGHT INCIDENT PERCENT REMAINING AT DEPTH (00031)	SAMPLING DEPTH (FEET) (00003)
OCT 1999						
14...	10.	7.7	258	13.6	65.8	0.5
14...	9.9	7.7	259	13.6	52.0	2.
14...	9.8	7.7	259	13.6	32.3	5.
14...	9.8	7.7	258	13.6	15.8	10.
14...	9.8	7.8	259	13.6	8.4	15.
14...	9.8	7.9	259	13.6	5.1	20.
14...	9.8	7.9	259	13.6	3.1	25.
14...	9.8	7.9	259	13.6	1.9	30.
14...	9.7	7.9	259	13.6	1.2	35.
14...	9.7	7.9	259	13.6	0.8	40.
14...	9.7	7.9	258	13.6	0.3	45.
14...	9.7	7.9	259	13.6	--	50.
14...	9.7	8.0	258	13.6	--	55.
14...	9.7	8.0	258	13.6	--	60.
14...	9.7	8.0	259	13.6	--	70.
14...	9.7	8.0	259	13.6	--	80.
14...	9.7	8.0	263	13.3	--	90.
14...	9.8	8.0	270	13.0	--	100.
14...	9.9	8.1	290	11.8	--	110.
14...	9.8	8.0	293	11.7	--	120.

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENT PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
JUN 2000						
28...	10.1	8.0	263	17.4	88.4	0.5
28...	10.2	8.0	262	17.3	69.3	2.
28...	10.1	8.1	261	17.2	44.8	5.
28...	10.2	8.2	260	15.2	25.4	10.
28...	10.1	8.2	249	14.2	13.1	15.
28...	10.0	8.2	245	13.7	6.1	20.
28...	9.9	8.1	244	13.5	2.7	25.
28...	9.9	8.1	243	13.4	1.2	30.
28...	9.9	8.1	242	13.3	0.5	35.
28...	9.9	8.2	239	12.9	--	40.
28...	9.9	8.1	236	12.5	--	45.
28...	9.9	8.1	236	12.2	--	50.
28...	9.9	8.1	237	12.1	--	55.
28...	9.9	8.1	238	11.7	--	60.
28...	9.9	8.1	238	11.7	--	65.
28...	9.9	8.1	238	11.7	--	70.
28...	9.9	8.1	238	11.7	--	75.
28...	9.9	8.1	238	11.7	--	80.
28...	9.9	8.1	238	11.7	--	85.
28...	9.9	8.1	237	11.7	--	87.

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENT PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
JUL 2000						
19...	8.7	8.2	214	19.9	51.3	0.5
19...	8.7	8.2	214	19.9	41.3	2.
19...	8.9	8.2	214	19.5	24.2	5.
19...	8.9	8.2	212	19.3	12.0	10.
19...	9.1	8.2	212	18.9	6.5	15.
19...	9.2	8.3	211	18.6	3.8	20.
19...	9.2	8.3	212	17.9	2.2	25.
19...	9.0	8.3	210	16.9	1.3	30.
19...	8.6	8.3	205	16.0	0.8	35.
19...	8.6	8.2	205	15.4	0.4	40.
19...	8.5	8.2	204	15.3	0.2	45.
19...	8.5	8.2	204	15.3	0.1	50.
19...	8.5	8.2	206	15.3	--	55.
19...	8.5	8.2	206	15.1	--	60.
19...	8.5	8.2	207	14.9	--	65.
19...	8.5	8.2	209	13.8	--	70.
19...	8.4	8.2	208	13.2	--	75.
19...	8.4	8.2	205	12.5	--	80.
19...	8.4	8.1	204	12.1	--	86.

KOOTENAI RIVER BASIN

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENT PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
AUG 2000						
15...	7.8	7.2	264	20.8	80.	0.5
15...	7.8	7.3	264	20.8	54.	2.
15...	7.8	7.3	264	20.9	54.	5.
15...	7.8	7.4	264	20.8	35.	10.
15...	7.8	7.4	264	20.9	30.	15.
15...	7.8	7.5	265	20.9	23.	20.
15...	7.8	7.6	264	20.9	16.	25.
15...	7.7	7.6	264	20.8	12.	30.
15...	7.8	7.7	268	20.4	11.	35.
15...	7.6	7.7	279	18.8	7.7	40.
15...	7.6	7.7	280	18.7	4.5	45.
15...	7.5	7.7	276	17.9	2.2	50.
15...	7.4	7.8	274	17.6	1.4	55.
15...	7.1	7.8	271	17.0	1.4	60.
15...	7.1	7.8	259	15.8	0.7	65.
15...	7.2	7.8	257	14.0	0.4	70.
15...	7.3	7.8	255	13.4	--	75.
15...	6.9	7.8	257	12.7	--	80.
15...	6.4	7.7	260	11.8	--	85.
15...	6.0	7.7	261	11.4	--	90.
15...	5.9	7.7	262	11.2	--	95.
15...	5.9	7.7	267	10.6	--	100.
15...	5.8	7.7	270	10.2	--	110.
15...	5.5	7.7	272	10.0	--	113.

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENT PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
SEP 2000						
20...	8.8	7.9	227	16.6	41.	0.5
20...	8.8	7.9	227	16.7	44.	2.
20...	8.8	7.9	226	16.7	35.	5.
20...	8.8	7.9	230	16.7	23.	10.
20...	8.8	7.8	232	16.7	16.	15.
20...	8.8	7.7	234	16.7	11.	20.
20...	8.8	7.7	234	16.7	7.8	25.
20...	8.8	7.7	234	16.7	5.4	30.
20...	8.8	7.7	235	16.7	3.7	35.
20...	8.8	7.7	235	16.6	2.5	40.
20...	8.7	7.7	235	16.6	1.7	45.
20...	8.7	7.7	236	16.6	1.2	50.
20...	8.6	7.8	246	16.0	0.8	55.
20...	8.6	7.8	250	16.0	0.5	60.
20...	8.5	7.8	250	15.9	--	65.
20...	8.5	7.8	254	15.7	--	70.

KOOTENAI RIVER BASIN

12301300 TOBACCO RIVER NEAR EUREKA, MT

LOCATION.--Lat 48°53'37", long 115°05'13", in NW$^1/_4$SE$^1/_4$SE$^1/_4$ sec.9, T.36 N., R.27 W., Lincoln County, Hydrologic Unit 17010101, on right bank 0.2 mi upstream from Indian Creek, 1.8 mi northwest of Eureka, and 2.8 mi upstream from Lake Koocanusa flow line.
DRAINAGE AREA.--440 mi^2.
PERIOD OF RECORD.--September 1958 to current year.
GAGE.--Water-stage recorder. Datum of gage is 2,518.85 ft above sea level.
REMARKS.--Records good. Diversions for irrigation of about 4,500 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.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about May 22, 1948, reached a discharge of 2,810 ft^3/s, from slope-area measurement of peak flow at site 1.5 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	147	186	121	104	127	234	617	507	360	118	60
2	100	142	179	122	121	125	294	719	485	341	112	71
3	99	135	173	116	115	131	336	811	485	323	107	91
4	99	141	161	115	109	143	357	808	505	319	105	77
5	97	137	146	114	111	164	500	722	551	309	93	71
6	97	138	151	112	110	166	579	640	598	308	91	69
7	96	139	157	112	108	159	452	582	648	309	88	67
8	103	136	143	113	111	149	382	532	671	290	84	65
9	128	132	142	113	118	150	383	517	769	279	81	73
10	122	132	145	108	114	146	454	522	743	267	75	73
11	118	134	143	104	104	148	532	501	630	254	81	78
12	134	139	143	111	112	147	609	464	553	240	78	74
13	131	408	146	111	109	143	768	439	615	227	73	70
14	133	612	142	113	92	145	779	422	598	217	68	67
15	126	433	142	111	116	142	651	415	715	208	68	68
16	121	342	151	108	111	140	574	431	706	201	67	66
17	117	297	145	112	120	137	578	480	649	192	65	64
18	113	277	160	107	102	132	628	556	608	184	64	68
19	112	248	137	103	100	138	710	621	589	180	64	81
20	109	231	135	98	89	131	835	647	549	172	63	83
21	108	218	130	141	107	130	947	701	512	168	63	86
22	106	205	128	126	104	129	1020	863	548	159	62	84
23	104	194	129	113	114	150	1020	958	521	154	62	84
24	103	187	127	121	123	182	859	863	494	150	61	86
25	102	187	127	93	117	182	709	786	482	146	62	86
26	117	191	123	105	114	179	600	742	445	142	58	86
27	118	177	117	113	113	187	542	673	418	136	57	85
28	120	172	112	107	115	220	586	637	399	129	57	84
29	138	164	103	104	120	240	684	607	400	126	57	82
30	135	169	94	100	---	230	629	572	377	125	57	103
31	139	---	114	93	---	224	---	544	---	121	57	---
TOTAL	3547	6364	4331	3440	3203	4916	18231	19392	16770	6736	2298	2302
MEAN	114	212	140	111	110	159	608	626	559	217	74.1	76.7
MAX	139	612	186	141	123	240	1020	958	769	360	118	103
MIN	96	132	94	93	89	125	234	415	377	121	57	60
AC-FT	7040	12620	8590	6820	6350	9750	36160	38460	33260	13360	4560	4570
CFSM	.26	.48	.32	.25	.25	.36	1.38	1.42	1.27	.49	.17	.17
IN.	.30	.54	.37	.29	.27	.42	1.54	1.64	1.42	.57	.19	.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2000, BY WATER YEAR (WY)

MEAN	115	135	117	103	113	160	430	788	751	316	130	111
MAX	343	368	415	248	492	422	883	1469	1498	576	235	239
(WY)	1960	1990	1996	1974	1996	1972	1996	1997	1974	1974	1993	1959
MIN	50.7	56.3	63.7	53.5	49.9	73.4	140	376	196	79.7	36.7	31.3
(WY)	1995	1995	1993	1989	1988	1988	1970	1977	1992	1977	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1959 - 2000	
ANNUAL TOTAL	104864		91530			
ANNUAL MEAN	287		250		273	
HIGHEST ANNUAL MEAN					496	1996
LOWEST ANNUAL MEAN					124	1977
HIGHEST DAILY MEAN	1270	May 26	1020	Apr 22,23	2510	May 13 1991
LOWEST DAILY MEAN	75	Feb 12	57	Aug 27-31	20	Jan 11 1963
ANNUAL SEVEN-DAY MINIMUM	85	Feb 11	58	Aug 26	23	Sep 6 1988
INSTANTANEOUS PEAK FLOW			1080	Apr 22	3180	May 13 1991
INSTANTANEOUS PEAK STAGE			4.47	Apr 22	7.16	May 13 1991
INSTANTANEOUS LOW FLOW			55	Aug 29		
INSTANTANEOUS LOW STAGE			2.06	Aug 29		
ANNUAL RUNOFF (AC-FT)	208000		181500		197500	
ANNUAL RUNOFF (CFSM)	.65		.57		.62	
ANNUAL RUNOFF (INCHES)	8.87		7.74		8.42	
10 PERCENT EXCEEDS	722		618		718	
50 PERCENT EXCEEDS	147		138		134	
90 PERCENT EXCEEDS	99		78		70	

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT

LOCATION.--Lat 48°35'06", long 115°13'52", in $NW^1/_4NE^1/_4NW^1/_4$ sec.33, T.33 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, in middle of old channel at Tenmile Creek, and 20.1 mi northeast of Libby.

PERIOD OF RECORD.--Water years 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG) (00025)	TEMPER-ATURE AIR (DEG C) (00020)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
13...	1115	699	10.5	3.6	<.002	.029	.002
13...	1147	--	--	7.5	<.002	.160	.001
MAY 2000							
16...	1100	691	19.0	6.1	.015	.131	.004
16...	1130	--	--	5.7	.008	.155	<.001
JUN							
28...	1100	704	22.0	4.0	.003	.078	.003
28...	1130	--	--	6.1	.005	.172	.001
JUL							
18...	1130	702	19.0	4.6	.002	.025	.002
18...	1200	--	--	6.3	.006	.169	.001
AUG							
14...	1230	720	19.0	4.3	.005	.005	<.001
14...	1305	--	--	6.4	.003	.189	<.001
SEP							
20...	1300	698	21.0	3.0	<.002	<.005	<.001
20...	1330	--	--	6.3	<.002	.218	<.001

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	DEPTH TO 1% OF SURFACE LIGHT (FEET) (00034)	INCID. LIGHT 400-700NM INTENS. (U-EINS /SQM/S) (00200)	LIGHT ATTENU-ATION COEFFI-CIENT (ALPHA/ METER) (70971)	SAM-PLING DEPTH (FEET) (00003)
OCT 1999						
13...	.002	<.008	67.0	75	.06	10
13...	.004	E.007	--	--	--	263
MAY 2000						
16...	<.001	.011	21.0	1590	.18	10
16...	<.001	E.006	--	--	--	184
JUN						
28...	.001	<.008	32.5	1900	.13	10
28...	.001	.010	--	--	--	233
JUL						
18...	<.001	<.008	25.0	2090	.10	10
18...	<.001	<.008	--	--	--	230
AUG						
14...	<.001	<.008	49.0	1970	.08	10
14...	<.001	E.005	--	--	--	236
SEP						
20...	<.001	<.008	54.0	108	.08	10
20...	.001	E.004	--	--	--	240

E--Estimated.

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
MAY 2000											
16...	1100	130	34	10	.7	.2	4.1	121	3.2	<.1	26
16...	1130	140	37	11	.6	.2	4.4	118	3.5	<.1	28
AUG											
14...	1230	110	31	8.4	.4	.1	2.2	97	1.8	<.1	16
14...	1305	140	39	11	.6	.1	4.0	118	3.0	.1	26

DATE	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)
MAY 2000										
16...	.21	157	25	<1	<.9	51	<1	<1	<.8	<1
16...	.22	161	11	<1	<.9	52	<1	<1	<.8	<1
AUG										
14...	.17	122	3	<1	<.9	38	<1	<1	E.5	<1
14...	.22	162	<1	<1	E.4	52	<1	<1	E.5	<1

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	SAMPLING DEPTH (FEET) (00003)
MAY 2000										
16...	1	<1	<1	<.2	<1	<1	<1	5	<1	10
16...	1	<1	<1	<.2	<1	<1	<1	4	<1	184
AUG										
14...	<1	<1	<1	<.2	<1	<1	<1	<1	<1	10
14...	<1	<1	1	<.2	<1	<1	<1	<1	<1	236

DATE	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
OCT 1999		
13...	.8	<.1
MAY 2000		
16...	1.5	<.1
JUN		
28...	1.7	<.1
JUL		
18...	2.3	<.1
AUG		
14...	1.1	<.1
SEP		
20...	1.2	<.1

E--Estimated.

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
OCT 1999						
13...	10.2	7.5	221.	13.4	80.1	0.5
13...	10.2	7.6	221.	13.4	41.4	2.
13...	10.3	7.6	221.	13.5	42.2	5.
13...	10.2	7.7	222.	13.5	35.3	10.
13...	10.4	7.7	222.	13.4	27.5	15.
13...	10.4	7.7	222.	13.4	22.4	20.
13...	10.4	7.8	222.	13.4	15.3	25.
13...	10.3	7.8	221.	13.4	10.3	30.
13...	10.2	7.8	221.	13.4	7.5	35.
13...	10.3	7.9	221.	13.4	5.7	40.
13...	10.2	7.9	221.	13.4	3.3	45.
13...	10.2	7.9	221.	13.4	2.7	50.
13...	9.9	7.9	221.	13.4	1.4	60.
13...	9.8	7.9	221.	13.4	0.9	70.
13...	9.3	7.9	221.	12.8	0.5	80.
13...	9.0	7.9	223.	12.3	--	90.
13...	8.5	7.9	221.	11.8	--	100.
13...	8.5	7.9	216.	11.5	--	110.
13...	8.5	7.9	218.	11.2	--	120.
13...	8.5	7.8	218.	10.7	--	130.
13...	8.5	7.8	217.	10.5	--	140.
13...	8.6	7.8	220.	10.1	--	150.
13...	8.5	7.8	226.	9.7	--	160.
13...	9.1	7.8	228.	9.4	--	170.
13...	8.8	7.8	233.	9.2	--	180.
13...	8.8	7.8	236.	9.1	--	190.
13...	8.8	7.8	240.	8.9	--	200.
13...	8.7	7.7	258.	8.2	--	210.
13...	8.5	7.7	278.	7.5	--	220.
13...	8.4	7.7	298.	6.8	--	230.
13...	7.9	7.7	318.	6.1	--	240.
13...	7.7	7.6	327.	5.8	--	250.
13...	7.7	7.6	330.	5.7	--	260.
13...	7.6	7.6	334.	5.7	--	263.

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
MAY 2000						
16...	13.4	7.8	255.	10.4	57.	0.5
16...	13.2	7.7	254.	10.3	38.	2.
16...	13.2	7.6	264.	10.3	20.	5.
16...	13.1	7.6	253.	10.0	7.1	10.
16...	13.0	7.6	253.	9.7	2.8	15.
16...	12.9	7.6	253.	9.5	1.3	20.
16...	12.7	7.6	253.	9.2	0.5	25.
16...	12.7	7.6	254.	9.0	0.3	30.
16...	12.5	7.6	255.	8.9	0.1	35.
16...	12.4	7.6	255.	8.7	--	40.
16...	12.3	7.6	256.	8.5	--	45.
16...	12.4	7.6	258.	8.3	--	50.
16...	12.1	7.6	267.	7.8	--	55.
16...	12.0	7.5	269.	7.5	--	60.
16...	12.3	7.6	269.	7.1	--	70.
16...	12.6	7.5	273.	6.2	--	80.
16...	12.9	7.6	262.	5.3	--	90.
16...	13.2	7.6	258.	4.7	--	100.
16...	13.2	7.5	258.	4.5	--	110.
16...	13.2	7.5	260.	4.4	--	120.
16...	13.2	7.5	261.	4.3	--	130.
16...	13.2	7.5	261.	4.3	--	140.
16...	13.2	7.5	263.	4.3	--	150.
16...	13.2	7.5	266.	4.3	--	160.
16...	13.1	7.5	271.	4.4	--	170.
16...	12.8	7.5	279.	4.5	--	180.
16...	12.5	7.5	279.	4.6	--	184.

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
JUN 2000						
28...	10.3	7.8	241.	17.9	63.4	0.5
28...	10.4	7.8	240.	17.6	56.2	2.
28...	10.4	7.8	240.	17.4	37.0	5.
28...	10.8	7.9	238.	16.0	18.4	10.
28...	10.7	7.9	234.	15.2	9.2	15.
28...	10.7	8.0	235.	15.1	4.9	20.
28...	10.6	8.0	234.	14.7	2.5	25.
28...	10.5	8.0	234.	14.6	1.4	30.
28...	10.2	8.0	228.	13.8	0.7	35.
28...	9.9	8.0	221.	12.8	0.4	40.
28...	9.9	8.0	220.	12.5	0.2	45.
28...	9.9	8.0	218.	12.2	0.1	50.
28...	9.8	8.0	220.	11.6	--	60.
28...	9.6	8.0	229.	11.0	--	70.
28...	9.7	7.9	219.	10.5	--	80.
28...	9.6	7.9	227.	10.4	--	90.
28...	9.7	7.9	231.	10.1	--	100.
28...	9.6	7.9	234.	9.7	--	110.
28...	9.7	7.9	242.	9.1	--	120.
28...	9.7	7.9	254.	8.7	--	130.
28...	9.9	7.8	269.	7.9	--	140.
28...	10.0	7.8	274.	7.1	--	150.
28...	10.1	7.8	278.	6.2	--	160.
28...	10.3	7.8	279.	5.6	--	170.
28...	10.4	7.8	277.	5.2	--	180.
28...	10.3	7.8	278.	5.	--	190.
28...	10.3	7.8	278.	4.9	--	200.
28...	10.2	7.8	279.	4.8	--	210.
28...	10.1	7.8	279.	4.8	--	220.
28...	9.9	7.8	279.	4.7	--	230.
28...	9.8	7.8	278.	4.8	--	233.

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
JUL 2000						
18...	8.9	7.9	222.	19.8	35.5	0.5
18...	8.9	7.9	222.	19.8	20.2	2.
18...	8.9	8.0	221.	19.7	10.2	5.
18...	9.4	8.1	220.	18.8	2.9	10.
18...	9.6	8.1	216.	17.8	2.1	15.
18...	9.9	8.2	213.	16.8	2.0	20.
18...	9.8	8.2	210.	16.4	1.0	25.
18...	9.4	8.2	208.	15.6	0.7	30.
18...	9.1	8.2	204.	14.6	0.5	35.
18...	8.9	8.1	204.	14.2	0.4	40.
18...	8.7	8.1	203.	13.7	0.3	45.
18...	8.7	8.1	202.	13.5	0.2	50.
18...	8.6	8.1	204.	13.2	--	55.
18...	8.6	8.1	207.	13.1	--	60.
18...	8.7	8.0	216.	12.5	--	70.
18...	8.6	8.0	217.	12.1	--	80.
18...	8.6	8.0	224.	11.7	--	90.
18...	8.6	8.0	226.	11.3	--	100.
18...	8.6	8.0	236.	10.7	--	110.
18...	8.6	8.0	248.	9.9	--	120.
18...	8.7	7.9	263.	9.2	--	130.
18...	8.7	7.9	268.	8.8	--	140.
18...	8.8	7.9	288.	7.9	--	150.
18...	8.9	7.9	294.	6.9	--	160.
18...	9.1	7.8	300.	6.0	--	170.
18...	9.1	7.8	302.	5.5	--	180.
18...	9.2	7.8	301.	5.2	--	190.
18...	9.2	7.8	302.	4.9	--	200.
18...	9.1	7.8	302.	4.8	--	210.
18...	9.1	7.8	302.	4.8	--	220.
18...	8.9	7.8	303.	4.8	--	230.

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
AUG 2000						
14...	8.1	8.1	217.	21.2	65.	0.5
14...	8.2	8.2	221.	21.1	51.	2.
14...	8.1	8.2	221.	20.9	38.	5.
14...	8.0	8.3	221.	20.8	21.	10.
14...	8.2	8.3	220.	20.3	14.	15.
14...	8.2	8.4	220.	20.1	9.4	20.
14...	8.3	8.3	216.	17.8	6.2	25.
14...	8.1	8.3	216.	16.9	4.4	30.
14...	8.1	8.3	214.	16.5	3.0	35.
14...	8.0	8.3	213.	16.1	2.0	40.
14...	8.0	8.2	213.	15.9	1.4	45.
14...	8.1	8.2	211.	15.6	0.9	50.
14...	8.3	8.2	209.	14.9	0.6	55.
14...	8.5	8.2	209.	14.4	0.4	60.
14...	8.5	8.2	207.	13.8	0.2	65.
14...	8.3	8.2	206.	13.3	0.1	70.
14...	7.9	8.1	206.	12.9	0.09	75.
14...	7.8	8.2	207.	12.6	0.06	80.
14...	7.8	8.1	206.	12.1	0.05	85.
14...	7.8	8.1	209.	11.7	--	90.
14...	7.8	8.1	214.	11.1	--	100.
14...	7.8	8.1	218.	10.7	--	110.
14...	7.8	8.0	223.	10.3	--	120.
14...	7.8	8.0	229.	9.9	--	130.
14...	7.7	8.0	240.	9.1	--	140.
14...	8.2	7.9	262.	8.3	--	150.
14...	8.1	8.0	264.	7.5	--	160.
14...	8.2	7.9	273.	6.8	--	170.
14...	8.1	7.9	277.	6.2	--	180.
14...	8.1	7.9	280.	5.8	--	190.
14...	8.2	7.9	281.	5.6	--	200.
14...	8.2	7.8	282.	5.4	--	210.
14...	8.1	7.8	282.	5.2	--	220.
14...	8.1	7.8	283.	5.0	--	230.
14...	8.1	7.8	283.	4.9	--	236.

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
SEP 2000						
20...	9.3	8.2	215.	16.5	67.	0.5
20...	9.2	8.2	215.	16.5	53.	2.
20...	9.2	8.2	215.	16.5	32.	5.
20...	9.2	8.2	215.	16.5	26.	10.
20...	9.1	8.2	214.	16.5	18.	15.
20...	9.1	8.2	214.	16.5	12.	20.
20...	9.0	8.2	215.	16.5	8.3	25.
20...	9.0	8.2	215.	16.5	5.7	30.
20...	9.0	8.3	215.	16.5	3.8	35.
20...	9.	8.2	215.	16.4	2.6	40.
20...	8.8	8.2	220.	16.3	1.9	45.
20...	8.6	8.2	222.	16.0	1.5	50.
20...	8.5	8.2	221.	15.9	0.9	55.
20...	8.3	8.2	220.	15.8	0.6	60.
20...	7.8	8.2	218.	14.5	--	65.
20...	7.8	8.2	214.	13.6	--	70.
20...	7.6	8.1	212.	13.2	--	75.
20...	7.7	8.2	212.	12.6	--	80.
20...	7.7	8.1	215.	11.9	--	90.
20...	7.8	8.1	216.	11.3	--	100.
20...	7.9	8.1	223.	10.6	--	110.
20...	7.7	8.0	231.	10.0	--	120.
20...	7.6	8.0	233.	9.8	--	130.
20...	7.5	8.0	238.	9.4	--	140.
20...	7.6	8.0	241.	9.2	--	150.
20...	7.9	8.0	244.	8.9	--	160.
20...	7.8	8.0	262.	7.5	--	170.
20...	7.8	7.9	266.	7.1	--	180.
20...	8.0	7.9	273.	6.6	--	190.
20...	8.1	7.9	280.	5.8	--	200.
20...	8.1	7.9	284.	5.3	--	210.
20...	8.2	7.9	283.	5.2	--	220.
20...	8.1	7.9	283.	5.0	--	230.
20...	8.0	7.9	283.	5.0	--	240.

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT

LOCATION.--Lat 48°24'43", long 115°18'33", in $SW^1/_4NW^1/_4NE^1/_4$ sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, in middle of old channel 0.2 mi upstream from Libby Dam, and 11.6 mi east of Libby.

PERIOD OF RECORD.--Water years 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG) (00025)	TEMPERATURE AIR (DEG C) (00020)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)
OCT 1999							
13...	1330	699	12.0	3.6	<.002	.03	.002
13...	1400	--	--	7.3	<.002	.16	.001
MAY 2000							
16...	1400	695	23.0	5.9	<.002	.09	<.001
16...	1430	--	--	6.0	.010	.17	.001
JUN							
28...	1300	703	23.0	5.3	.006	.05	.003
28...	1330	--	--	6.0	.005	.18	.001
JUL							
18...	1330	702	25.0	4.6	.003	.03	.003
18...	1400	--	--	6.3	.009	.18	.001
AUG							
14...	1430	720	25.0	3.8	.003	.01	.002
14...	1500	--	--	5.9	.005	.19	.001
SEP							
20...	1500	694	10.0	3.2	<.002	<.005	<.001
20...	1530	--	--	6.5	.003	.22	.001

DATE	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	DEPTH TO 1% OF SURFACE LIGHT (FEET) (00034)	INCID. LIGHT. 400-700NM INTENS. (U-EINS /SQM/S) (00200)	LIGHT ATTENUATION COEFFICIENT (ALPHA/METER) (70971)	SAMPLING DEPTH (FEET) (00003)
OCT 1999						
13...	.003	<.008	56.0	228	.08	10
13...	.004	E.004	--	--	--	317
MAY 2000						
16...	<.001	E.006	31.0	2350	.14	10
16...	<.001	E.006	--	--	--	244
JUN						
28...	.001	E.004	31.0	1900	.14	10
28...	.001	E.006	--	--	--	292
JUL						
18...	<.001	<.008	36.0	1800	.11	10
18...	<.001	<.008	--	--	--	299
AUG						
14...	<.001	<.008	45.0	1780	.09	10
14...	<.001	E.005	--	--	--	315
SEP						
20...	.001	<.008	44.5	165	.09	10
20...	.003	E.007	--	--	--	304

E--Estimated.

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)
MAY 2000							
16...	1400	130	34	10	.6	.2	3.9
16...	1430	140	37	11	.6	.2	4.1
AUG							
14...	1430	110	31	8.2	.4	.1	2.1
14...	1500	150	40	11	.6	.1	3.9

DATE	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SAMPLING DEPTH (FEET) (00003)
MAY 2000							
16...	112	3.1	<.1	25	.20	150	10
16...	119	3.4	<.1	27	.22	161	244
AUG							
14...	94	1.7	<.1	15	.16	118	10
14...	119	2.9	.1	26	.22	163	315

DATE	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	LIGHT INCIDENCE PERCENT REMAINING AT DEPTH (00031)	SAMPLING DEPTH (FEET) (00003)
OCT 1999						
13...	9.9	7.9	240.	13.5	76.8	0.5
13...	9.9	7.9	240.	13.5	66.2	2.
13...	9.9	7.8	240.	13.5	51.3	5.
13...	9.9	7.8	240.	13.5	32.7	10.
13...	9.9	7.9	240.	13.5	22.8	15.
13...	9.8	7.9	240.	13.5	15.7	20.
13...	9.8	8.0	239.	13.5	11.0	25.
13...	9.8	8.0	239.	13.5	8.8	30.
13...	9.8	8.0	239.	13.5	6.1	35.
13...	9.8	8.0	239.	13.5	4.2	40.
13...	9.7	8.0	238.	13.5	3.1	45.
13...	9.7	8.0	239.	13.5	2.2	50.
13...	9.7	8.0	239.	13.5	1.2	55.
13...	9.7	8.1	240.	13.5	0.5	60.
13...	9.7	8.1	240.	13.5	--	70.
13...	9.7	8.1	239.	13.5	--	80.
13...	9.6	8.1	239.	13.5	--	90.
13...	8.4	8.1	232.	12.2	--	100.
13...	8.5	8.1	232.	11.5	--	110.
13...	8.9	8.0	232.	10.6	--	125.
13...	9.2	8.0	240.	10.0	--	140.
13...	9.3	8.0	247.	9.6	--	155.
13...	9.3	7.9	257.	9.3	--	170.
13...	9.3	7.9	269.	8.8	--	185.
13...	9.2	7.9	300.	7.8	--	200.
13...	9.1	7.9	316.	7.2	--	215.
13...	9.1	7.8	335.	6.2	--	230.
13...	9.0	7.8	341.	5.7	--	245.
13...	9.0	7.8	343.	5.4	--	260.
13...	9.0	7.8	345.	5.2	--	275.
13...	8.8	7.8	346.	5.1	--	290.
13...	8.7	7.8	346.	5.0	--	305.
13...	8.3	7.7	347.	5.0	--	317.

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
MAY 2000						
16...	13.5	7.8	254.	11.6	81.	0.5
16...	13.5	7.8	254.	11.7	58.	2.
16...	13.6	7.8	254.	11.2	41.	5.
16...	13.8	7.8	254.	10.5	17.	10.
16...	13.7	7.8	253.	10.4	9.	15.
16...	13.8	7.8	252.	10.2	4.6	20.
16...	13.8	7.8	252.	10.1	1.8	25.
16...	13.7	7.9	252.	10.0	1.2	30.
16...	13.8	7.9	252.	9.6	0.6	35.
16...	13.8	7.9	252.	9.5	0.3	40.
16...	13.8	7.9	252.	9.4	0.1	45.
16...	13.8	7.9	253.	9.1	0.1	50.
16...	13.9	7.9	254.	8.6	--	55.
16...	13.7	7.9	254.	8.5	--	60.
16...	13.4	7.9	256.	7.9	--	70.
16...	13.3	7.9	256.	7.6	--	80.
16...	13.1	7.8	259.	7.3	--	90.
16...	12.9	7.8	259.	7.	--	100.
16...	13.2	7.8	255.	5.8	--	115.
16...	13.2	7.8	260.	4.1	--	130.
16...	13.0	7.8	264.	3.9	--	145.
16...	12.8	7.8	268.	3.8	--	160.
16...	12.6	7.7	269.	3.8	--	175.
16...	12.6	7.7	270.	3.7	--	190.
16...	12.5	7.7	271.	3.7	--	205.
16...	12.4	7.7	271.	3.7	--	220.
16...	12.3	7.7	272.	3.8	--	235.
16...	12.2	7.7	276.	3.7	--	244.

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
JUN 2000						
28...	10.4	8.0	249.	19.	85.9	0.5
28...	10.3	8.0	249.	18.9	68.9	2.
28...	10.6	8.1	249.	18.2	44.4	5.
28...	11.1	8.2	247.	16.9	22.7	10.
28...	11.0	8.2	247.	16.7	10.1	15.
28...	11.2	8.2	246.	15.4	4.8	20.
28...	11.0	8.2	245.	14.8	2.2	25.
28...	10.9	8.2	244.	14.3	1.1	30.
28...	10.5	8.2	238.	13.4	0.5	35.
28...	10.1	8.2	235.	12.9	0.3	40.
28...	10.0	8.2	235.	12.7	0.1	45.
28...	9.8	8.1	233.	12.4	--	50.
28...	9.7	8.1	230.	11.7	--	60.
28...	9.6	8.1	230.	11.5	--	70.
28...	9.6	8.1	237.	11.0	--	80.
28...	9.6	8.1	239.	10.8	--	90.
28...	9.6	8.1	243.	10.4	--	100.
28...	9.6	8.0	252.	9.6	--	115.
28...	9.8	8.0	267.	8.8	--	130.
28...	10.1	8.0	273.	7.7	--	145.
28...	10.3	8.0	274.	6.7	--	160.
28...	10.5	8.0	275.	5.5	--	175.
28...	10.6	7.9	277.	4.7	--	190.
28...	10.5	7.9	278.	4.5	--	205.
28...	10.5	7.9	277.	4.4	--	220.
28...	10.4	7.9	277.	4.3	--	235.
28...	10.4	7.9	275.	4.2	--	250.
28...	10.3	7.9	288.	4.1	--	265.
28...	10.1	7.9	297.	4.1	--	280.
28...	10.0	7.8	304.	4.1	--	292.

KOOTENAI RIVER BASIN

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
JUL 2000						
18...	9.3	8.1	234.	19.8	65.2	0.5
18...	9.3	8.2	234.	19.8	43.6	2.
18...	9.4	8.2	234.	19.5	32.5	5.
18...	10.3	8.3	232.	17.9	17.0	10.
18...	10.6	8.3	230.	16.5	9.6	15.
18...	10.5	8.3	230.	15.7	5.1	20.
18...	10.1	8.3	228.	15.2	3.0	25.
18...	9.8	8.3	226.	14.8	1.8	30.
18...	9.4	8.3	219.	14.3	1.1	35.
18...	9.3	8.3	226.	14.0	0.6	40.
18...	9.3	8.3	227.	13.8	0.4	45.
18...	9.1	8.2	224.	13.5	0.3	50.
18...	8.9	8.2	220.	13.0	0.2	55.
18...	8.7	8.2	218.	12.7	--	60.
18...	8.6	8.2	218.	12.3	--	70.
18...	8.5	8.2	220.	11.9	--	80.
18...	8.4	8.1	225.	11.6	--	90.
18...	8.4	8.1	229.	11.2	--	100.
18...	8.4	8.1	242.	10.5	--	115.
18...	8.4	8.0	251.	9.9	--	130.
18...	8.7	8.0	274.	8.8	--	145.
18...	9.2	8.0	283.	7.4	--	160.
18...	9.4	8.0	288.	6.3	--	175.
18...	9.5	8.0	292.	5.4	--	190.
18...	9.6	7.9	294.	5.0	--	205.
18...	9.6	7.9	298.	4.5	--	220.
18...	9.4	7.9	298.	4.4	--	235.
18...	9.3	7.9	299.	4.3	--	250.
18...	9.3	7.9	301.	4.2	--	265.
18...	9.2	7.9	301.	4.2	--	280.
18...	8.9	7.8	303.	4.1	--	295.
18...	8.8	7.8	302.	4.1	--	299.

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
AUG 2000						
14...	9.3	7.8	224.	19.8	69.	0.5
14...	9.3	7.9	223.	19.8	62.	2.
14...	9.6	8.0	221.	19.5	45.	5.
14...	9.8	8.1	219.	18.2	27.	10.
14...	9.7	8.1	219.	17.7	16.	15.
14...	9.5	8.1	219.	17.5	9.8	20.
14...	9.1	8.1	218.	16.6	3.6	30.
14...	8.8	8.1	218.	16.2	1.5	40.
14...	8.7	8.1	217.	15.7	0.6	50.
14...	8.7	8.1	216.	15.0	0.2	60.
14...	8.3	8.1	216.	14.0	0.1	70.
14...	7.8	8.1	216.	12.9	0.04	80.
14...	7.6	8.1	219.	12.1	--	90.
14...	7.6	8.0	225.	11.5	--	100.
14...	7.6	8.0	229.	11.1	--	110.
14...	7.6	8.0	234.	10.7	--	120.
14...	7.7	8.0	239.	10.2	--	130.
14...	7.8	8.0	245.	9.7	--	140.
14...	8.0	7.9	260.	9.1	--	155.
14...	8.3	7.9	275.	7.7	--	170.
14...	8.6	7.9	278.	6.6	--	185.
14...	8.7	7.9	281.	5.4	--	200.
14...	8.8	7.8	281.	4.9	--	215.
14...	8.8	7.8	281.	4.7	--	230.
14...	8.8	7.8	282.	4.5	--	245.
14...	8.7	7.8	282.	4.4	--	260.
14...	8.6	7.8	300.	4.4	--	275.
14...	8.6	7.8	307.	4.3	--	290.
14...	8.4	7.8	314.	4.3	--	305.
14...	8.1	7.7	318.	4.3	--	315.

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	LIGHT INCI-DENCE PERCENT REMAIN-ING AT DEPTH (00031)	SAM-PLING DEPTH (FEET) (00003)
SEP 2000						
20...	9.5	7.7	213.	16.4	51.	0.5
20...	9.4	7.8	212.	16.4	43.	2.
20...	9.4	7.8	212.	16.4	33.	5.
20...	9.4	7.8	212.	16.4	22.	10.
20...	9.3	7.8	212.	16.4	14.	15.
20...	9.3	7.9	212.	16.4	9.8	20.
20...	9.3	7.9	212.	16.4	6.2	25.
20...	9.0	8.0	213.	16.1	3.9	30.
20...	8.9	8.0	213.	16.0	2.4	35.
20...	8.8	8.0	211.	16.0	1.5	40.
20...	8.5	8.0	212.	15.6	0.9	45.
20...	8.4	8.0	211.	15.5	0.6	50.
20...	8.5	8.0	208.	15.0	0.4	55.
20...	8.7	8.0	207.	14.6	--	60.
20...	8.7	8.0	206.	14.1	--	65.
20...	8.0	8.0	205.	12.9	--	70.
20...	7.9	7.9	212.	11.8	--	80.
20...	7.9	7.9	216.	11.3	--	90.
20...	7.9	7.9	224.	10.8	--	100.
20...	8.1	7.8	233.	10.0	--	115.
20...	8.4	7.8	249.	9.2	--	130.
20...	8.6	7.8	262.	8.6	--	145.
20...	8.8	7.8	270.	7.9	--	160.
20...	9.0	7.8	275.	7.0	--	175.
20...	8.8	7.8	279.	6.1	--	190.
20...	8.8	7.8	280.	5.5	--	205.
20...	8.9	7.7	281.	5.2	--	220.
20...	8.9	7.7	281.	4.8	--	235.
20...	9.0	7.7	281.	4.7	--	250.
20...	9.0	7.7	282.	4.6	--	265.
20...	8.8	7.7	282.	4.5	--	280.
20...	8.7	7.7	282.	4.4	--	295.
20...	8.2	7.7	283.	4.4	--	304.

12301920 LAKE KOOCANUSA NEAR LIBBY, MT

LOCATION.--Lat 48°24'38", long 115°18'47", in NW$^1/_4$ sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, in block 18 of Libby Dam on Kootenai River, 11 mi east of Libby and at river mile 221.8.

DRAINAGE AREA.--8,985 mi^2, approximately.

PERIOD OF RECORD.--March 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is at sea level (levels by U.S. Army Corps of Engineers). Prior to July 2, 1973, nonrecording gage on upstream face of dam at same datum.

REMARKS.--Reservoir and flow completely controlled by gravity type dam with taintor gated spillway; construction began in 1967; completed in 1973. Storage began Mar. 21, 1972. Usable capacity, 5,748,000 acre-ft between elevation 2,201.5 ft, bottom of sluice gate, and 2,459 ft, controlled spillway elevation. Dead storage, 121,200 acre-ft below elevation 2,201.5 ft. Minimum operating level, 768,700 acre-ft, elevation 2,287.0 ft for on-site power generation. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

COOPERATION.--Capacity table and elevations provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,753,000 acre-ft, Aug. 6, 1976 and Aug. 16, 1982, maximum elevation, 2,459.12 ft, Aug. 16, 1982; minimum contents observed since normal low operating level reached in May 1972, 139,600 acre-ft, Dec. 16-21, 1972, elevation, 2,226.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 5,273,000 acre-ft, Oct. 1, elevation, 2,448.55 ft; minimum, 1,685,000 acre-ft, Mar. 23, elevation, 2,336.65 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

Elevation	Contents
2,360	2,232,000
2,380	2,765,000
2,400	3,367,000
2,420	4,085,000
2,440	4,899,000
2,460	5,795,000

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2448.55	2439.49	2435.00	2407.37	2369.30	2340.71	2337.10	2356.20	2398.12	2419.18	2434.74	2434.78
2	2448.21	2439.18	2434.27	2406.68	2368.08	2340.32	2337.22	2357.46	2399.10	2420.29	2434.97	2434.67
3	2447.90	2438.90	2433.70	2405.57	2366.96	2340.02	2337.35	2358.97	2400.02	2421.29	2435.20	2434.60
4	2447.61	2438.71	2432.84	2404.37	2365.65	2339.66	2337.53	2360.54	2401.05	2422.19	2435.48	2434.54
5	2447.28	2438.42	2431.94	2403.23	2364.60	2339.41	2337.90	2362.15	2402.32	2422.90	2435.51	2434.47
6	2446.91	2438.29	2431.03	2402.05	2363.50	2339.10	2338.30	2363.43	2403.80	2423.32	2435.68	2434.32
7	2446.60	2438.12	2430.14	2400.87	2362.20	2338.74	2338.50	2364.56	2405.48	2423.91	2435.81	2434.23
8	2446.25	2437.91	2429.24	2399.69	2361.10	2338.40	2338.78	2365.57	2407.14	2424.30	2435.95	2434.17
9	2446.07	2437.86	2428.25	2398.42	2360.07	2338.05	2339.01	2366.55	2408.80	2424.85	2436.04	2434.04
10	2445.85	2437.72	2427.29	2397.37	2359.14	2337.72	2339.35	2367.47	2410.36	2425.28	2436.16	2433.93
11	2445.68	2437.56	2426.29	2396.14	2358.25	2337.36	2339.75	2368.32	2411.70	2425.94	2436.20	2433.86
12	2445.49	2437.65	2425.36	2394.80	2357.57	2337.20	2340.24	2369.10	2412.16	2426.49	2436.30	2433.83
13	2445.28	2438.92	2424.42	2393.61	2356.90	2336.79	2341.01	2369.88	2412.43	2427.09	2436.30	2433.69
14	2445.11	2440.41	2423.42	2392.28	2356.19	2336.77	2341.62	2370.60	2412.55	2427.69	2436.33	2433.56
15	2444.82	2441.52	2422.36	2391.00	2354.28	2336.81	2342.12	2371.30	2412.91	2428.37	2436.33	2433.51
16	2444.50	2442.01	2421.42	2389.60	2353.18	2336.73	2342.60	2372.03	2413.33	2428.97	2436.33	2433.35
17	2444.23	2442.12	2420.43	2388.40	2352.08	2336.76	2343.15	2372.97	2413.63	2429.45	2436.26	2433.24
18	2443.92	2442.19	2419.85	2387.06	2351.00	2336.76	2343.66	2374.04	2413.88	2429.88	2436.17	2433.13
19	2443.60	2442.17	2419.19	2385.72	2350.33	2336.78	2344.29	2375.48	2414.25	2430.32	2436.20	2433.00
20	2443.32	2442.10	2418.31	2384.30	2349.67	2336.74	2345.07	2377.24	2414.67	2430.75	2436.03	2432.95
21	2442.98	2441.92	2417.13	2382.98	2348.32	2336.72	2345.97	2379.02	2414.98	2431.17	2435.98	2432.90
22	2442.64	2441.57	2416.07	2381.57	2347.10	2336.72	2347.06	2381.12	2415.16	2431.64	2435.90	2432.75
23	2442.30	2440.93	2415.26	2380.23	2345.90	2336.65	2348.26	2383.58	2415.46	2432.02	2435.81	2432.68
24	2441.95	2440.30	2414.70	2378.92	2344.62	2336.71	2349.39	2385.90	2415.80	2432.43	2435.68	2432.63
25	2441.66	2439.63	2414.18	2377.50	2343.32	2336.68	2350.40	2387.96	2416.02	2432.84	2435.58	2432.61
26	2441.36	2438.90	2413.62	2376.05	2342.76	2336.75	2351.30	2389.79	2416.27	2433.18	2435.47	2432.55
27	2441.03	2438.51	2412.60	2374.68	2342.23	2336.74	2352.05	2391.39	2416.38	2433.47	2435.37	2432.50
28	2440.63	2437.42	2411.45	2373.52	2341.58	2336.78	2352.92	2393.04	2416.49	2433.78	2435.25	2432.42
29	2440.37	2436.61	2410.28	2372.48	2341.13	2336.85	2353.96	2394.53	2417.21	2433.99	2435.16	2432.35
30	2440.05	2435.83	2409.14	2371.40	---	2336.92	2354.06	2395.95	2418.12	2434.25	2435.03	2432.31
31	2439.78	---	2408.10	2370.13	---	2337.01	---	2397.07	---	2434.49	2434.89	---
MAX	2448.55	2442.19	2435.00	2407.37	2369.30	2340.71	2354.06	2397.07	2418.12	2434.49	2436.33	2434.78
MIN	2439.78	2435.83	2408.10	2370.13	2341.13	2336.65	2337.10	2356.20	2398.12	2419.18	2434.74	2432.31

CONTENTS IN THOUSANDS OF ACRE-FEET, AT END OF MONTH

4890	4723	3643	2494	1784	1692	2086	3272	4013	4667	4683	4576

CHANGE IN CONTENTS, IN ACRE-FEET

-396000	-167000	-1080000	-1149000	-710000	-92000	+394000	+1186000	+741000	+654000	+16000	-107000

CAL YR 1999. . . . . -710000
WTR YR 2000. . . . . +89000

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT

LOCATION.--Lat 48°24'03", long 115°19'11", in $SW^1/_4SW^1/_4SW^1/_4$ sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, on right bank 0.7 mi downstream from Libby Dam, 2.8 mi upstream from Fisher River, 11 mi east of Libby, and at river mile 221.4.
DRAINAGE AREA.--8,985 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1971 to current year.
GAGE.--Water-stage recorder. Datum of gage is 2,100.00 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Feb. 13, 1974, nonrecording gage at site 0.4 mi upstream at same datum.
REMARKS.--Water-discharge records good. Flow completely regulated by Lake Koocanusa since Mar. 21, 1972 . Diversions for irrigation of about 14,000 acres, from tributaries upstream from station in Canada and the United States. U.S. Army Corps of Engineers satellite telemetry at station.
AVERAGE DISCHARGE.--29 years, 11,310 ft^3/s, 15.61 in/yr, 8,194,000 acre-ft/yr, adjusted for change in contents in Lake Koocanusa since Mar. 21, 1972.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,200 ft^3/s, Aug. 5, 1974, gage height, 27.50 ft; minimum daily, 1,900 ft^3/s, Jan. 29, 1972.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 27,600 ft^3/s, Dec. 13, 15, gage height, 24.23 ft; minimum daily, 3,850 ft^3/s, Apr. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12100	12400	25900	18600	16100	8300	3870	4040	3960	10200	7950	8000
2	12100	12300	23900	18600	20200	7740	3860	4080	3950	9080	8000	8000
3	12100	12200	20900	23900	20200	7760	3870	4110	3940	8180	7990	8000
4	12100	11400	26300	25700	20200	7780	3880	4010	3920	8000	7990	7970
5	12200	10000	26400	25500	17900	7800	3870	4010	3910	7900	7960	7950
6	12200	9000	26500	25600	18000	7820	3850	3990	4550	7940	7950	7960
7	12100	8100	26400	25400	20100	7840	3870	3970	6110	7980	7960	7970
8	12400	8030	26400	25200	20100	7860	3860	3940	7320	7960	7920	7990
9	12500	8080	26200	25400	16000	7890	3860	3970	8240	7860	7920	7980
10	12400	8240	26700	25200	16200	7900	3860	3970	8040	7950	7940	7990
11	11300	8100	27000	25300	16200	7240	3910	3960	12200	7940	7900	7960
12	9950	8100	27200	25200	11800	6260	3910	4000	23000	7910	7920	7950
13	9820	8080	27100	25100	11800	5310	3890	3970	24700	7890	7930	7950
14	10500	8050	27100	25200	19900	3890	4000	3970	24700	7840	7920	7970
15	12300	8040	26200	24900	19900	3900	4000	3940	24700	7890	7970	8000
16	12300	15500	26700	24800	18700	3860	3990	3990	24600	7940	7970	8000
17	12300	16200	27000	24800	16200	3870	3980	3980	24600	7950	7970	7910
18	12300	15900	20100	24800	16100	3860	4010	3960	24600	7980	7980	7860
19	12300	16100	19800	24500	11700	3870	4010	3940	24400	7980	7980	7890
20	12300	16700	24600	24300	11600	3880	3970	3890	24500	7920	7980	7860
21	12300	16100	26600	24300	19300	3880	3920	3920	24500	7970	7980	7860
22	12200	19800	26400	24000	19200	3880	3900	3950	24500	8010	8010	7820
23	12200	25500	20400	23800	19200	3880	3880	3940	24500	8000	8180	6920
24	12200	25500	15400	23900	19300	3960	3990	3940	24500	7990	8010	6150
25	11300	25600	15100	23800	19100	3880	3890	3960	24600	7970	8000	5920
26	12000	25700	15200	23900	10200	3880	3890	3950	24600	7990	7980	5950
27	12300	25700	24000	23500	9820	3890	3950	3980	24700	8000	7980	5880
28	12200	25800	26000	20300	11400	3880	3980	3970	24700	8000	7980	5880
29	12500	25900	25900	18500	9380	3880	3980	3950	17800	7980	7990	5890
30	12400	25800	25900	18600	---	3880	3940	3930	12500	7960	8000	5890
31	12400	---	25200	21400	---	3880	---	4000	---	7950	8000	---
TOTAL	371570	461920	754500	734000	475800	167400	117640	123180	512840	250110	247210	223320
MEAN	11990	15400	24340	23680	16410	5400	3921	3974	17090	8068	7975	7444
MAX	12500	25900	27200	25700	20200	8300	4010	4110	24700	10200	8180	8000
MIN	9820	8030	15100	18500	9380	3860	3850	3890	3910	7840	7900	5880
AC-FT	737000	916200	1497000	1456000	943700	332000	233300	244300	1017000	496100	490300	443000
CFSM	1.33	1.71	2.71	2.64	1.83	.60	.44	.44	1.90	.90	.89	.83
IN.	1.54	1.91	3.12	3.04	1.97	.69	.49	.51	2.12	1.04	1.02	.92
MEAN †	5546	12590	22590	4993	4063	3903	10540	23260	29540	18700	8234	5647
CFSM †	.62	1.40	2.51	.56	.45	.43	1.17	2.59	3.29	2.08	.92	.63
IN †	.71	1.56	2.90	.64	.49	.50	1.31	2.98	3.67	2.40	1.06	.70
AC-FT†	341000	749200	1389000	307000	2337000	240000	627300	1430300	1758000	1150100	506300	336000

OBSERVED

CAL YR	1999	TOTAL	4839320	MEAN	13260	MAX	25700	MIN	3680	AC-FT	9598000
WTR YR	2000	TOTAL	4439490	MEAN	12130	MAX	27200	MIN	3850	AC-FT	8806000

ADJUSTED

CAL YR	1999	TOTAL	5374288	MEAN	14720	CFSM	1.64	IN	18.55	AC-FT	8888000
WTR YR	2000	TOTAL	4571666	MEAN	12490	CFSM	1.39	IN	18.56	AC-FT	8895000

†--Adjusted for change in contents in Lake Koocanusa.
e--Estimated.

KOOTENAI RIVER BASIN

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year. Prior to March 25, 1974, at site, 3.2 mi downstream.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to September 1969.
WATER TEMPERATURE: October 1967 to September 1977.
SUSPENDED SEDIMENT DISCHARGE: October 1967 to January 1976.

REMARKS.--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 (water years 1968-69): Maximum, 525 microsiemens per centimeter (µS/cm) at 25.0°C, Dec. 24, 1967; minimum, 174 microsiemens per centimeter (µS/cm) at 25.0°C, May 26, 1969.
WATER TEMPERATURE (water years 1967-77): Maximum, 21.5°C, Aug. 6, 1970; minimum 0.0°C on many days during winter periods most years prior to Libby Dam.
SEDIMENT CONCENTRATION (water years 1967-76): Maximum daily mean, 1,200 mg/L, June 5, 1968; minimum daily mean, 1 mg/L on many days in 1968, 1969, 1972-75.
SEDIMENT LOAD (water years 1967-76): Maximum daily, 200,000 tons, June 5, 1968; minimum daily, 5.4 tons, Jan. 28, 1972.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT 1999									
14...	9950	704	98	9.6	8.4	244	14.0	12.5	4.2
DEC									
16...	26900	708	97	10.7	8.4	275	9.0	8.0	4.8
FEB 2000									
17...	17900	712	102	12.8	8.6	241	0.0	3.0	4.4
APR									
11...	3890	--	--	--	7.9	277	6.0	3.5	5.2
MAY									
17...	3990	702	128	13.6	8.5	265	10.0	9.0	6.0
JUN									
27...	24700	713	103	10.3	7.7	244	20.0	12.5	5.5
JUL									
19...	8020	706	96	9.3	7.1	222	26.5	13.5	4.9
AUG									
15...	7970	720	91	8.8	7.3	269	24.5	14.5	4.4
SEP									
21...	7830	705	98	9.3	8.0	218	6.5	14.0	3.9

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999									
14...	--	<.002	.058	.002	.002	<.008	--	--	--
DEC									
16...	--	<.002	.109	.003	<.001	<.008	--	--	--
FEB 2000									
17...	--	<.002	.115	<.001	.002	E.005	--	--	--
APR									
11...	--	.006	.149	<.001	<.001	<.008	--	--	--
MAY									
17...	.12	.004	.109	<.001	<.001	E.005	1	11	84
JUN									
27...	E.10	.006	.117	.003	<.001	<.008	2	133	81
JUL									
19...	.11	<.002	.108	.002	.001	<.008	1	22	87
AUG									
15...	E.10	.007	.092	.001	.002	<.008	--	--	--
SEP									
21...	--	<.002	.054	<.001	<.001	<.008	--	--	--

E--Estimated.

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
MAY 2000										
17...	0830	130	34	10	.6	.2	4	110	3.2	.1
AUG										
15...	1300	94	26	7.2	.3	.1	2	98	2.0	.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
MAY 2000										
17...	6.0	25	151	.21	1620	11	<1	<.9	<3	48
AUG										
15...	4.4	16	117	.16	2530	6	<1	<.9	<3	35

DATE	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)
MAY 2000										
17...	<1	<1	<.1	<.8	<1	<1	<1	1	<1	<1
AUG										
15...	<1	<1	<.1	E.6	<1	<1	<1	1	<1	<1

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SILVER, DISSOLVED (UG/L AS AG) (01075)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
MAY 2000									
17...	<1	.2	<1	<1	<1	<1	<1	3	<1
AUG									
15...	<1	.3	<1	<1	<1	<1	<1	2	<1

E--Estimated.

KOOTENAI RIVER BASIN

12302055 FISHER RIVER NEAR LIBBY, MT

LOCATION.--Lat 48°21'20", long 115°18'50", in NW$^1/_4$ NE$^1/_4$NW$^1/_4$ sec.21, T.30 N., R.29 W., Lincoln County, Hydrologic Unit 17010102, on left bank 0.8 mi upstream from mouth and 11.4 mi east of Libby.
DRAINAGE AREA.--838 mi^2.
PERIOD OF RECORD.--September 1967 to current year.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Datum of gage is 2,134.10 ft above sea level (U.S. Army Corps of Engineers bench mark).
REMARKS.--Water-discharge records good. Diversions of about 700 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about May 22, 1948, reached a discharge of 6,560 ft^3/s, by slope-area measurement at site 0.5 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	214	299	203	150	246	674	1360	928	360	132	92
2	110	190	283	201	250	252	769	1520	812	340	128	98
3	110	176	279	197	282	262	873	1680	769	323	125	102
4	110	202	258	192	256	287	960	1690	778	316	124	101
5	108	224	240	193	246	339	1300	1520	814	307	122	99
6	108	204	237	185	237	398	1440	1330	836	290	119	98
7	107	238	235	182	229	424	1270	1170	833	291	117	98
8	109	232	219	179	225	434	1110	1060	819	282	114	97
9	205	217	213	185	229	430	1050	1010	832	275	113	109
10	208	209	208	176	229	423	1130	1030	770	265	111	115
11	165	199	203	177	218	420	1310	977	674	255	113	126
12	154	194	206	175	237	412	1540	905	632	244	111	118
13	146	492	261	171	230	396	1880	839	842	235	107	112
14	141	739	265	175	225	404	2260	791	788	228	105	107
15	135	481	254	183	225	416	2020	769	1000	219	103	104
16	131	376	289	179	213	402	1850	805	857	211	102	102
17	129	320	359	179	207	403	1890	931	729	203	101	99
18	126	288	397	154	212	389	2030	1120	672	195	99	96
19	125	261	438	145	181	399	2170	1200	664	190	97	94
20	123	245	386	137	180	395	2370	1220	626	184	96	95
21	121	246	349	151	210	375	2450	1240	576	179	96	99
22	120	231	320	176	209	365	2560	1350	564	174	96	102
23	118	217	296	159	207	399	2510	1400	540	169	95	101
24	118	208	278	156	215	461	2110	1230	496	165	95	100
25	116	224	263	160	218	480	1760	1100	471	160	95	100
26	118	341	251	153	218	494	1500	1030	441	155	93	99
27	128	454	239	160	220	519	1360	940	419	149	91	97
28	145	375	229	155	229	598	1440	961	403	146	91	96
29	242	325	219	150	241	685	1540	916	387	141	91	96
30	222	297	210	144	---	687	1410	832	375	138	91	98
31	194	---	203	142	---	668	---	912	---	135	91	---
TOTAL	4303	8619	8386	5274	6428	13262	48536	34838	20347	6924	3264	3050
MEAN	139	287	271	170	222	428	1618	1124	678	223	105	102
MAX	242	739	438	203	282	687	2560	1690	1000	360	132	126
MIN	107	176	203	137	150	246	674	769	375	135	91	92
AC-FT	8540	17100	16630	10460	12750	26310	96270	69100	40360	13730	6470	6050
CFSM	.17	.34	.32	.20	.26	.51	1.93	1.34	.81	.27	.13	.12
IN.	.19	.38	.37	.23	.29	.59	2.15	1.55	.90	.31	.14	.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2000, BY WATER YEAR (WY)

MEAN	139	237	253	263	361	614	1236	1424	836	299	142	122
MAX	305	819	1174	1272	1965	2401	2752	3300	1796	532	244	204
(WY)	1986	1996	1996	1974	1996	1972	1997	1997	1974	1971	1997	1968
MIN	82.8	87.0	90.4	77.9	95.0	137	344	482	221	92.7	56.0	58.0
(WY)	1988	1980	1993	1979	1993	1977	1977	1977	1977	1977	1994	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1968 - 2000	
ANNUAL TOTAL	200661		163231			
ANNUAL MEAN	550		446		494	
HIGHEST ANNUAL MEAN					938	1996
LOWEST ANNUAL MEAN					169	1977
HIGHEST DAILY MEAN	2570	May 26	2560	Apr 22	7790	Feb 9 1996
LOWEST DAILY MEAN	107	Oct 7	91	Aug 27	35	Jan 2 1977
ANNUAL SEVEN-DAY MINIMUM	109	Oct 2	91	Aug 26	50	Aug 18 1994
INSTANTANEOUS PEAK FLOW			2640	Apr 23	a12000	Feb 9 1996
INSTANTANEOUS PEAK STAGE			6.42	Apr 23	10.35	Feb 9 1996
INSTANTANEOUS LOW FLOW					29	Jan 2 1977
INSTANTANEOUS LOW STAGE					b2.37	Jan 2 1977
ANNUAL RUNOFF (AC-FT)	398000		323800		357600	
ANNUAL RUNOFF (CFSM)	.66		.53		.59	
ANNUAL RUNOFF (INCHES)	8.91		7.25		8.00	
10 PERCENT EXCEEDS	1440		1140		1300	
50 PERCENT EXCEEDS	304		230		217	
90 PERCENT EXCEEDS	126		102		100	

a--From indirect measurement.
b--Result of freezeup.

12302055 FISHER RIVER NEAR LIBBY, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967-85, May to August 1999.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1967 to September 1985.
SUSPENDED SEDIMENT DISCHARGE: October 1967 to January 1976.
REMARKS.--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 (water years 1967-77): Maximum, 21.5°C, Aug. 6, 1970; minimum 0.0°C on many days during winter periods most years.
SEDIMENT CONCENTRATION (water years 1967-76): Maximum daily mean, 4,600 mg/L, June 5, 1968; minimum daily mean, 1 mg/L on many days in 1970-76.
SEDIMENT LOAD (water years 1967-76): Maximum daily, 91,200 tons, Jan. 16 1974; minimum daily, 0.17 tons, Sept. 7, 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
20...	1200	123	8.3	213	7.0	7.0	.001
APR 2000							
18...	1015	2020	7.7	88	14.0	6.3	<.001
MAY							
11...	1300	973	7.6	97	10.0	7.0	.002
JUL							
20...	1030	183	8.3	166	18.0	17.0	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
20...	<.005	.12	.001	<.008	2	.66	83
APR 2000							
18...	.015	.25	<.001	.046	84	458	77
MAY							
11...	<.005	.12	<.001	E.007	17	45	91
JUL							
20...	<.005	E.10	<.001	<.008	6	3.0	55

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT 1999											
20...	1200	110	25	10	.9	.1	3.3	113	.7	<.1	11
MAY 2000											
11...	1300	45	11	3.9	.6	.1	1.8	50	.4	<.1	10

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT 1999											
20...	4.8	124	.17	41	<3	<.1	<1	E.6	<1	<2	<31
MAY 2000											
11...	2.1	60	.08	158	<3	<.1	<1	1	<1	<1	2

E--Estimated.

KOOTENAI RIVER BASIN

12304040 BASIN CREEK NEAR YAAK, MT

LOCATION.--Lat 48°55'49", long 115°28'52", in NE$^1/_4$SE$^1/_4$NE$^1/_4$ sec.34, T.37 N., R.30 W., Lincoln County, Hydrologic Unit 17010103, Kootenai National Forest, on left back 1.1 mi upstream from East Fork Yaak River and 12.5 mi northeast of Yaak.
DRAINAGE AREA.--27.4 mi^2.
PERIOD OF RECORD.--May 1990 to September 2000 (discontinued).
GAGE.--Water-stage recorder. Elevation of gage is 3,830 ft above sea level, from topographic map.
REMARKS.--Records good except those for estimated daily discharges, which are poor. No known diversion or regulation upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	11	17	e12	e6.0	e6.0	14	84	64	24	11	6.1
2	6.8	8.8	16	11	e6.5	e6.0	18	116	61	22	10	7.1
3	6.7	7.9	16	11	e6.0	e7.0	20	136	61	22	9.9	7.9
4	6.4	13	e16	11	e5.5	e8.0	29	140	60	22	9.8	7.5
5	6.4	9.7	e16	11	e5.5	e8.5	40	121	61	21	9.5	7.9
6	6.4	9.3	16	e10	e5.5	e9.0	32	106	63	22	9.3	7.3
7	6.4	9.3	15	10	e5.5	e8.2	27	92	63	21	9.2	6.9
8	13	8.7	e15	10	e5.5	8.0	26	84	63	20	8.9	11
9	18	8.8	e14	10	e6.0	7.7	30	81	61	20	8.5	14
10	10	9.2	14	e9.0	e5.5	7.4	36	81	57	20	8.3	9.1
11	10	12	13	e8.0	e5.0	7.3	44	75	53	19	9.1	8.4
12	16	17	14	e8.5	e5.5	7.3	56	70	52	18	8.7	7.6
13	12	54	14	e9.0	e5.5	7.3	67	68	56	18	8.0	7.2
14	9.9	47	13	e9.0	e4.5	7.4	62	66	51	17	7.9	6.7
15	8.7	33	13	e9.0	e5.0	7.5	58	65	52	17	7.7	6.4
16	7.8	27	16	e9.0	e5.0	7.2	56	67	48	17	7.6	6.6
17	7.6	25	15	e8.5	e5.5	7.3	57	76	45	16	7.5	6.5
18	7.6	24	15	e7.5	e5.0	7.1	62	96	45	16	7.3	5.8
19	7.4	21	e14	e6.5	e4.5	7.4	69	111	45	15	7.0	6.0
20	7.3	21	e12	e6.0	e4.5	e7.0	82	115	41	15	7.2	5.9
21	7.1	20	e13	e6.5	e5.0	e6.0	97	126	38	14	7.2	7.5
22	7.0	19	13	e7.5	e5.0	e7.0	112	145	41	14	7.0	6.8
23	7.0	18	13	e8.0	e5.0	e9.0	112	144	37	14	6.9	6.4
24	6.7	17	12	e8.0	e6.0	9.3	96	125	35	14	6.4	6.4
25	6.7	17	12	e8.0	e5.0	8.7	84	112	33	14	6.6	6.4
26	8.1	17	e11	e8.0	e5.0	8.7	76	101	31	13	6.4	6.1
27	7.4	16	e10	e7.5	e5.0	9.8	73	91	29	12	6.1	6.1
28	8.8	16	e9.0	e6.5	e5.0	11	82	86	28	12	6.1	5.8
29	9.7	15	e10	e6.0	e5.5	11	82	79	27	12	6.1	5.7
30	8.4	17	e11	e6.0	---	11	79	73	25	11	6.1	10
31	12	---	e12	e5.5	---	11	---	69	---	11	6.1	---
TOTAL	270.3	548.7	420.0	263.5	154.0	251.1	1778	3001	1426	523	243.4	219.1
MEAN	8.72	18.3	13.5	8.50	5.31	8.10	59.3	96.8	47.5	16.9	7.85	7.30
MAX	18	54	17	12	6.5	11	112	145	64	24	11	14
MIN	6.4	7.9	9.0	5.5	4.5	6.0	14	65	25	11	6.1	5.7
AC-FT	536	1090	833	523	305	498	3530	5950	2830	1040	483	435
CFSM	.32	.67	.49	.31	.19	.30	2.16	3.53	1.73	.62	.29	.27
IN.	.37	.74	.57	.36	.21	.34	2.41	4.07	1.94	.71	.33	.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2000, BY WATER YEAR (WY)

MEAN	9.40	16.4	15.7	9.71	12.4	14.9	52.9	120	79.8	29.6	13.3	9.45
MAX	12.8	47.5	66.8	29.1	50.3	27.9	101	221	141	49.4	25.8	15.5
(WY)	1994	1996	1996	1996	1996	1996	1996	1997	1996	1993	1993	1993
MIN	6.76	6.18	5.87	4.64	4.91	8.10	29.6	47.7	17.7	15.8	7.85	6.30
(WY)	1993	1995	1993	1993	1993	2000	1992	1992	1992	1992	2000	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1991 - 2000	
ANNUAL TOTAL	11975.7		9098.1			
ANNUAL MEAN	32.8		24.9		32.0	
HIGHEST ANNUAL MEAN					56.7	1996
LOWEST ANNUAL MEAN					14.4	1992
HIGHEST DAILY MEAN	305	May 26	145	May 22	454	May 16 1997
LOWEST DAILY MEAN	4.0	Jan 24	a4.5	Feb 14	3.5	Dec 21 1998
ANNUAL SEVEN-DAY MINIMUM	4.9	Mar 5	4.9	Feb 14	4.1	Jan 13 1993
INSTANTANEOUS PEAK FLOW			154	May 22	489	May 15 1997
INSTANTANEOUS PEAK STAGE			2.34	May 22	4.68	May 15 1997
INSTANTANEOUS LOW FLOW					3.3	Mar 12 1993
ANNUAL RUNOFF (AC-FT)	23750		18050		23210	
ANNUAL RUNOFF (CFSM)	1.20		.91		1.17	
ANNUAL RUNOFF (INCHES)	16.26		12.35		15.89	
10 PERCENT EXCEEDS	91		71		84	
50 PERCENT EXCEEDS	13		11		13	
90 PERCENT EXCEEDS	5.7		6.0		6.0	

a--Estimated discharge. Also occurred Feb 19, 20.
e--Estimated.

KOOTENAI RIVER BASIN

12304500 YAAK RIVER NEAR TROY, MT

LOCATION.--Lat 48°33'43", long 115°58'09", in NE$^1/_4$SE$^1/_4$SE$^1/_4$ sec.5, T.32 N., R.34 W., Lincoln County, Hydrologic Unit 17010103, Kootenai National Forest, on right bank 500 ft upstream from bridge on U.S. Highway 2, 0.3 mi upstream from mouth, and 7.7 mi northwest of Troy.

DRAINAGE AREA.--766 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to September 1916 (fragmentary record), March 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,839.2 ft above sea level. Oct. 15, 1910, to Sept. 30, 1916, nonrecording gage at several sites within 11 mi of present site at various datums.

REMARKS.--Water-discharge records good. Minor diversions for irrigation upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May to June 1948 reached a stage of 11.0 ft, from floodmarks; discharge, 12,500 ft^3/s. Flood in May 1954 reached a stage of 11.4 ft, from floodmarks; discharge, 13,400 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	274	436	304	230	331	932	2800	1640	540	169	98
2	115	241	441	302	274	334	1300	3550	1580	506	160	100
3	113	203	429	278	267	345	1450	4270	1600	472	153	111
4	113	226	387	281	238	405	1670	4510	1600	473	148	115
5	113	242	341	276	250	604	2340	3800	1680	469	145	114
6	113	216	339	269	242	702	2100	3210	1730	442	143	113
7	113	213	374	271	240	646	1700	2790	1680	435	139	117
8	132	212	360	275	245	589	1490	2500	1640	420	137	116
9	246	210	330	277	322	547	1550	2420	1740	424	132	182
10	219	218	329	254	322	526	1900	2630	1520	442	130	168
11	189	310	329	247	303	520	2290	2480	1300	417	127	168
12	219	524	351	251	306	519	2770	2220	1290	377	127	141
13	234	2100	447	254	295	512	3330	2040	1820	357	123	129
14	213	1990	421	258	269	514	3150	1970	1500	334	118	119
15	190	1130	393	262	287	500	2580	1950	1600	315	116	113
16	170	794	496	248	275	483	2440	2100	1380	301	115	109
17	154	664	555	253	252	473	2510	2450	1220	289	113	105
18	149	619	541	228	272	455	2690	2920	1130	276	111	102
19	144	554	490	220	253	477	3000	3150	1170	264	108	103
20	139	524	420	218	242	453	3440	3140	1040	253	106	102
21	136	520	389	238	264	438	3850	3490	936	244	106	116
22	134	480	389	256	270	438	4290	4000	964	235	106	126
23	132	446	379	261	293	570	4210	3840	890	230	106	117
24	130	426	365	258	318	643	3540	3270	811	224	104	111
25	127	432	350	256	319	641	2960	2940	773	216	104	110
26	160	438	336	256	312	630	2550	2650	718	207	103	108
27	167	418	284	256	314	666	2360	2340	676	198	100	107
28	180	383	260	235	322	835	2760	2280	640	191	98	104
29	252	374	271	234	329	930	2960	2130	624	184	98	102
30	227	375	292	233	---	897	2730	1960	583	179	98	121
31	234	---	300	230	---	879	---	1830	---	173	98	---
TOTAL	5073	15756	11824	7939	8125	17502	76842	87630	37475	10087	3741	3547
MEAN	164	525	381	256	280	565	2561	2827	1249	325	121	118
MAX	252	2100	555	304	329	930	4290	4510	1820	540	169	182
MIN	113	203	260	218	230	331	932	1830	583	173	98	98
AC-FT	10060	31250	23450	15750	16120	34720	152400	173800	74330	20010	7420	7040
CFSM	.21	.69	.50	.33	.37	.74	3.34	3.69	1.63	.42	.16	.15
IN.	.25	.77	.57	.39	.39	.85	3.73	4.26	1.82	.49	.18	.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2000, BY WATER YEAR (WY)

MEAN	205	330	333	297	363	611	1956	3568	1963	510	201	168
MAX	833	1192	1630	1552	1626	1872	3754	6463	4992	970	373	506
(WY)	1960	1996	1996	1974	1996	1972	1969	1997	1974	1969	1993	1959
MIN	84.0	93.2	108	94.6	103	140	634	1026	377	151	102	94.6
(WY)	1988	1980	1993	1988	1993	1977	1977	1977	1992	1977	1977	1987

12304500 YAAK RIVER NEAR TROY, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1957 - 2000	
ANNUAL TOTAL	359714		285541			
ANNUAL MEAN	986		780		877	
HIGHEST ANNUAL MEAN					1562	1974
LOWEST ANNUAL MEAN					278	1977
HIGHEST DAILY MEAN	8030	May 26	4510	May 4	11600	May 16 1997
LOWEST DAILY MEAN	108	Sep 24	98	Aug 28	50	Dec 9 1972
ANNUAL SEVEN-DAY MINIMUM	112	Sep 19	99	Aug 27	61	Dec 7 1972
INSTANTANEOUS PEAK FLOW			4780	May 4	b12600	May 17 1997
INSTANTANEOUS PEAK STAGE			7.25	May 4	c9.70	May 21 1956
INSTANTANEOUS LOW FLOW			a98	Aug 28		
INSTANTANEOUS LOW STAGE			a2.97	Aug 28		
ANNUAL RUNOFF (AC-FT)	713500		566400		635100	
ANNUAL RUNOFF (CFSM)	1.29		1.02		1.14	
ANNUAL RUNOFF (INCHES)	17.47		13.87		15.55	
10 PERCENT EXCEEDS	2830		2460		2630	
50 PERCENT EXCEEDS	364		322		294	
90 PERCENT EXCEEDS	147		114		126	

a--Also Aug. 29-31 and Sept. 1, 2.
b--Gage height, 9.58 ft.
c--From gage height in well; 10.8 ft from outside gage.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963-73, 1975-85, May 1999 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Seasonally 1963-73, 1975-85, April to September 2000.
INSTRUMENTATION.--Water temperature probe installed by U.S. Army Corps of Engineers.
REMARKS.--Prior to March 25, 1975, temperature records furnished by U.S. Army Corps of Engineers. Missing data for Apr. 15, 23, 24, June 12, and July 4 due missing or erroneous transmissions. Unpublished records of instantaneous water temperature are available in files of the District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 27.5°C, Aug. 8, 9, 2000; minimum 0.0°C on many days during winter periods most years.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: For period April though September, maximum, 27.5°C, Aug. 8, 9; minimum 1.5°C on April 14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
20...	0945	139	8.1	112	6.5	12.0	.001
APR 2000							
11...	1145	2270	7.6	59	14.0	4.5	<.001
MAY							
11...	1030	2500	7.8	62	10.0	5.5	.002
JUL							
20...	0830	252	8.3	104	15.0	18.0	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
20...	<.005	E.10	<.001	<.008	1	.38	63
APR 2000							
11...	.009	.18	<.001	.010	6	37	83
MAY							
11...	.008	.11	<.001	<.008	4	27	78
JUL							
20...	<.005	.13	<.001	E.004	7	4.8	97

E--Estimated.

KOOTENAI RIVER BASIN

12304500 YAAK RIVER NEAR TROY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT 1999											
20...	0945	52	15	3.4	.8	.1	2.3	58	.6	<.1	11
MAY 2000											
11...	1030	28	8.3	1.8	.5	.1	1.2	32	E.2	<.1	9.8

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
OCT 1999											
20...	1.6	70	.09	26	<3	<.1	<1	E.8	<1	<2	<31
MAY 2000											
11...	.9	E42	E.06	E284	<3	<.1	<1	1	<1	<1	1

E--Estimated.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR APRIL TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
								APRIL			MAY	
1							7.5	2.5	5.0	10.5	5.0	7.5
2							6.5	3.5	5.0	9.0	6.0	7.0
3							7.5	2.5	4.5	6.5	5.5	6.0
4							5.5	3.5	4.5	6.0	4.0	5.5
5							4.0	2.5	3.5	7.0	4.5	5.5
6							4.0	2.5	3.5	8.5	4.5	6.5
7							6.5	2.0	4.0	8.5	4.5	6.5
8							7.5	2.5	5.0	8.0	5.0	6.5
9							8.0	3.5	5.5	8.0	6.0	7.0
10							8.0	4.0	5.5	8.5	6.0	7.0
11							7.5	4.5	6.0	7.5	5.5	6.5
12							8.5	4.0	6.0	8.5	5.0	6.5
13							6.5	4.0	5.0	10.0	4.5	7.0
14							4.0	1.5	2.0	8.5	5.0	7.0
15							---	---	---	10.0	5.5	7.5
16							6.0	3.0	4.0	9.5	5.0	7.5
17							6.5	4.0	5.0	11.0	6.5	8.5
18							8.5	3.5	5.5	11.0	6.5	8.5
19							8.5	4.0	6.0	9.0	6.0	7.5
20							8.5	4.5	6.5	9.0	5.0	7.5
21							8.0	5.0	6.5	8.5	6.0	7.0
22							7.0	5.0	6.0	10.0	6.0	7.5
23							6.5	4.0	5.0	10.0	5.5	7.5
24							7.0	---	5.5	10.0	4.5	7.5
25							---	4.5	5.5	9.5	5.5	7.5
26							8.5	3.5	5.0	8.0	5.0	6.5
27							10.0	5.0	7.0	7.5	5.5	6.5
28							8.5	6.5	7.5	8.0	5.0	6.5
29							8.5	5.0	6.5	8.5	4.5	6.5
30							9.5	5.0	7.0	7.0	4.5	6.0
31							---	---	---	7.5	5.0	6.0
MONTH							---	---	---	11.0	4.0	7.0

KOOTENAI RIVER BASIN

12304500 YAAK RIVER NEAR TROY, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR APRIL TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.5	4.0	6.5	19.5	14.0	16.5	26.0	20.5	22.5	16.5	12.5	14.5
2	8.5	5.5	7.0	18.5	14.0	16.5	26.0	18.5	22.0	16.0	12.5	14.5
3	9.5	6.0	7.5	17.0	12.0	13.5	26.5	18.5	22.5	16.0	10.5	13.5
4	11.0	6.0	8.5	---	10.5	---	26.0	18.5	22.0	16.0	10.0	13.0
5	9.5	6.5	8.5	16.0	9.0	12.0	25.0	18.5	22.0	13.0	10.0	12.0
6	11.0	7.0	8.5	15.5	12.0	13.5	26.0	19.0	22.0	14.5	9.0	12.0
7	12.0	7.0	9.5	17.0	11.5	14.5	26.5	19.5	22.5	16.0	11.0	12.5
8	10.0	7.5	8.0	18.5	11.5	14.5	27.5	20.0	23.0	14.0	10.5	12.5
9	10.5	7.0	8.5	18.5	13.0	15.5	27.5	20.0	22.5	12.5	8.0	10.0
10	9.0	6.5	8.0	16.5	12.5	14.5	26.0	19.0	22.5	12.5	7.5	10.0
11	9.0	6.5	7.5	19.5	12.0	15.0	25.0	19.0	22.0	14.5	9.0	11.5
12	---	6.0	7.0	20.5	13.5	16.5	22.5	15.5	19.0	15.0	10.5	12.0
13	8.0	5.0	6.5	22.0	14.5	18.5	22.5	14.5	18.0	19.5	10.0	13.5
14	9.0	6.5	7.5	20.0	16.5	18.5	22.5	14.5	18.0	19.5	11.5	15.0
15	10.5	6.5	8.5	19.0	15.5	17.5	21.5	13.5	16.5	18.5	12.5	15.5
16	12.5	6.5	9.0	22.0	14.0	18.0	22.5	13.5	16.5	20.0	13.5	16.0
17	13.0	6.5	9.5	20.5	17.0	19.0	22.0	13.0	16.5	20.5	13.5	16.5
18	12.0	8.0	10.0	20.5	15.5	18.5	22.0	14.0	16.5	21.0	15.5	17.5
19	14.5	8.5	10.5	21.0	16.5	19.0	19.5	15.0	16.5	17.5	13.0	15.5
20	13.0	7.5	10.5	22.5	17.5	20.0	20.5	12.0	15.5	14.5	10.0	11.5
21	15.0	8.5	11.5	23.0	17.5	21.0	21.0	10.0	15.0	11.0	6.5	9.0
22	15.5	10.0	12.5	21.5	19.0	20.5	20.5	12.0	15.5	9.0	4.5	6.5
23	14.0	10.0	12.0	21.5	18.0	19.5	21.5	11.5	16.0	8.5	2.0	5.0
24	13.0	9.5	11.0	21.0	12.5	17.0	19.0	13.5	15.5	9.0	2.0	5.5
25	17.5	8.5	12.5	23.5	14.0	18.0	20.5	11.0	15.0	11.0	4.5	7.0
26	16.0	11.0	13.5	23.5	17.0	19.5	19.5	12.5	15.5	13.0	4.5	8.5
27	17.0	10.0	13.5	24.0	18.0	19.5	17.5	11.0	14.0	13.0	7.0	9.0
28	17.0	11.5	14.0	25.5	19.0	21.5	18.0	9.0	13.0	11.5	7.0	9.0
29	18.0	12.0	15.0	25.5	17.5	21.0	14.5	9.0	12.0	10.5	6.0	8.5
30	17.5	13.0	16.0	25.5	17.5	22.0	19.0	10.0	13.5	10.5	7.0	9.5
31	---	---	---	27.0	19.0	22.5	17.0	11.5	14.0	---	---	---
MONTH	---	4.0	10.0	---	9.0	---	27.5	9.0	18.0	21.0	2.0	11.5

KOOTENAI RIVER BASIN

12305000 KOOTENAI RIVER AT LEONIA, ID

LOCATION.--Lat 48°37'04", long 116°02'47", in $NW^1/_4NW^1/_4NW^1/_4$ sec. 20, T.33 N., R.34 W., principal Meridian, Lincoln County, Mont., Hydrologic Unit 17010104, on right bank at Leonia, 450 ft east of Montana-Idaho State line, 0.5 mi upstream from Boulder Creek, and at mile 171.6.

DRAINAGE AREA.--11,740 mi^2, approximately.

PERIOD OF RECORD.--March 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,790.25 ft above sea level. Prior to Oct. 1, 1970, at datum 90 ft lower. Prior to Nov. 13, 1928, nonrecording gage on bridge 250 ft upstream at datum 90.41 ft lower.

REMARKS.--Records good. Station equipment includes satellite telemetry. Diversions above station for irrigation of about 14,600 acres. Flow regulated by Lake Koocanusa since Mar. 21, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (1929-71), 123,000 ft^3/s May 28, 1948, gage height, 33.40 ft; minimum, 996 ft^3/s, Dec. 9, 1936, minimum gage height, 7.56 ft, Dec. 10, 1929. Maximum discharge since regulation (1972 to current year), 62,000 ft^3/s, Jan. 16, 1974, gage height, 24.15 ft; maximum gage height, 25.06 ft, Feb. 9, 1996; minimum daily, 2,270 ft^3/s, Dec. 9, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 1894 and 1916 reached stages of 34.6 and 31.6 ft, respectively, present datum, from information by Great Northern Railway.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 37,700 ft^3/s, June 18, gage height, 21.48 ft; minimum daily, 5,250 ft^3/s, Nov. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12300	13500	28400	22100	18700	10200	7520	11800	9980	13700	9170	8960
2	12300	13200	28100	20200	20100	9450	8160	14000	9580	12100	9150	8980
3	12300	13000	21700	23200	21800	9430	8680	15900	9540	11100	9150	9020
4	12300	12800	28100	27600	21700	9650	9140	16300	9670	10600	9120	9010
5	12300	11700	28500	27400	20600	10200	10800	14500	9970	10400	9100	8970
6	12300	10700	28700	27300	19100	10500	10800	12900	10300	10200	9080	8980
7	12300	10000	28700	27200	19900	10400	9910	11700	11600	10200	9060	8970
8	12400	9620	28500	27100	21400	10300	9270	10900	12700	10200	9050	9000
9	13100	9580	28100	27100	19000	10200	9120	10700	14300	10200	9030	9090
10	12900	9710	28700	26900	17300	10200	9640	11100	13300	10100	9020	9160
11	12100	9880	28900	27000	17400	9940	10500	10700	14700	10000	9000	9160
12	11100	10400	29300	26900	15100	9190	11800	10200	24600	9920	8980	9070
13	10600	16500	29700	26700	12800	8370	13700	9780	32900	9860	8970	9030
14	10500	15200	29700	26900	17600	7190	14800	9580	32100	9770	8960	8990
15	12400	12500	29500	26600	21500	6480	13400	9530	32900	9680	8970	8970
16	12600	15200	28900	26600	20100	6360	12600	9960	31900	9680	9000	8950
17	12500	19200	30100	26400	18700	6290	12500	11000	31000	9630	9000	8920
18	12500	18700	25600	26400	17200	6200	13100	12600	30600	9580	8990	8790
19	12500	18600	22700	26000	14600	6260	14000	13400	30600	9580	8980	8800
20	12500	19000	25000	25700	12400	6210	15300	13300	29800	9470	8980	8790
21	12500	18400	29300	25800	17000	6120	16000	14300	29600	9440	8980	8850
22	12400	19600	29000	25600	20700	6070	17200	16500	29900	9470	8990	8830
23	12400	27500	24700	25300	20600	6570	17100	16100	29500	9430	9140	8370
24	12400	27600	19100	25200	20800	6910	15100	14200	29000	9410	9020	7520
25	11900	27900	17100	25100	20800	6890	13200	13100	28800	9360	8990	6940
26	12100	28200	17000	25300	15300	6810	11700	12200	28600	9320	8960	6820
27	12700	28400	22100	25100	11000	6890	11000	11400	28500	9290	8930	6790
28	12900	28200	27900	22400	12400	7290	11700	11300	28400	9260	8920	6760
29	13500	28200	27800	20000	11100	7620	12400	10900	24400	9230	8930	6760
30	13400	28000	27800	19500	---	7560	11700	10300	16400	9220	8940	6870
31	13500	---	27700	21000	---	7460	---	10200	---	9200	8940	---
TOTAL	383500	530990	826400	781600	516700	249210	361840	380350	675140	308600	279500	254120
MEAN	12370	17700	26660	25210	17820	8039	12060	12270	22500	9955	9016	8471
MAX	13500	28400	30100	27600	21800	10500	17200	16500	32900	13700	9170	9160
MIN	10500	9580	17000	19500	11000	6070	7520	9530	9540	9200	8920	6760
AC-FT	760700	1053000	1639000	1550000	1025000	494300	717700	754400	1339000	612100	554400	504000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1971, BY WATER YEAR (WY) (UNREGULATED)

MEAN	6528	5705	4768	4049	4364	4898	14540	38860	45570	23050	10010	7045
MAX	15540	11280	13700	11330	10630	10390	39940	61770	74280	47510	16910	16560
(WY)	1948	1934	1934	1934	1951	1934	1934	1956	1967	1954	1954	1959
MIN	3532	2748	2477	1922	1994	2693	4334	18630	20630	9819	6142	4744
(WY)	1937	1937	1945	1937	1936	1944	1945	1944	1941	1944	1941	1936

SUMMARY STATISTICS	WATER YEARS 1929 - 1971*	
ANNUAL MEAN	14150	
HIGHEST ANNUAL MEAN	19240	1956
LOWEST ANNUAL MEAN	7416	1944
HIGHEST DAILY MEAN	122000	May 28 1948
LOWEST DAILY MEAN	1070	Dec 8 1936
ANNUAL SEVEN-DAY MINIMUM	1310	Jan 2 1937
ANNUAL RUNOFF (AC-FT)	10250000	
10 PERCENT EXCEEDS	37800	
50 PERCENT EXCEEDS	6750	
90 PERCENT EXCEEDS	3240	

*--Unregulated.

KOOTENAI RIVER BASIN

12305000 KOOTENAI RIVER AT LEONIA, ID--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2000, BY WATER YEAR (WY) (REGULATED, UNADJUSTED)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	15230	17210	16570	15940	13020	9120	11230	15700	17050	12600	11290	11470
MAX	31980	26400	28140	28610	24790	15160	25570	31670	39200	29600	20310	20960
(WY)	1973	1992	1991	1976	1990	1990	1996	1997	1972	1981	1976	1972
MIN	5635	5004	3423	3109	3724	4350	5644	8352	5374	4139	3956	5539
(WY)	1972	1972	1972	1972	1973	1973	1973	1977	1977	1988	1975	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1972 - 2000**	
ANNUAL TOTAL	6080880		5547950			
ANNUAL MEAN	16660		15160		13870	
HIGHEST ANNUAL MEAN					20400	1996
LOWEST ANNUAL MEAN					10210	1993
HIGHEST DAILY MEAN	35700	Jun 16	32900	Jun 13	56200	Jan 16 1974
LOWEST DAILY MEAN	5850	Mar 13	6070	Mar 22	2270	Dec 9 1972
ANNUAL SEVEN-DAY MINIMUM	6180	Mar 12	6220	Mar 16	2420	Dec 7 1972
ANNUAL RUNOFF (AC-FT)	12060000		11000000		10050000	
10 PERCENT EXCEEDS	27900		28100		24500	
50 PERCENT EXCEEDS	14100		12300		12300	
90 PERCENT EXCEEDS	9470		8920		5020	

**--Regulated.

PEND OREILLE RIVER BASIN

12323230 BLACKTAIL CREEK AT HARRISON AVENUE AT BUTTE, MT

LOCATION.--Lat 45°59'07", long 112°30'26", in $NE^1/_4SE^1/_4NE^1/_4$ sec.30, T.3 N., R.7 W., Silver Bow County, Hydrologic Unit 17010201, at culvert on Harrison Avenue interchange off Interstate 90, at Butte.

PERIOD OF RECORD.--March 1993 to August 1995, December 1996 to current year. Formerly published as 4558531123026.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
15...	1445	6.7	8.0	297	17.5	7.5	120	33	8.3
MAR 2000									
06...	1200	6.4	7.8	288	10.0	7.0	110	32	8.1
APR									
04...	1045	7.0	7.9	277	17.0	6.0	110	31	7.5
MAY									
09...	0900	7.4	7.8	279	11.0	8.0	110	31	7.4
22...	0950	7.2	7.9	271	21.5	10.5	100	30	7.1
JUN									
04...	1435	5.0	8.2	284	27.0	17.5	110	32	7.9
JUL									
21...	0730	3.0	7.6	350	15.5	9.5	140	40	9.7
SEP									
01...	0720	2.4	7.7	328	12.0	10.0	130	37	8.9

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
15...	2	3	<.1	<.1	E1	5	26	603	<1
MAR 2000									
06...	3	E2	<.1	<.1	2	3	100	349	<1
APR									
04...	2	E2	<.1	<.1	2	3	120	341	<1
MAY									
09...	3	4	<.1	<.1	2	3	120	344	<1
22...	3	4	<1.0	<.1	2	4	130	393	<1
JUN									
04...	4	4	<.1	<.1	2	4	67	302	<1
JUL									
21...	2	4	<1.0	<.1	2	3	30	139	<1
SEP									
01...	2	E2	<1.0	<.1	2	3	23	286	<1

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
15...	E.9	33	53	2	<31	15	.27	70
MAR 2000								
06...	<1	45	53	3	5	6	.10	83
APR								
04...	<1	32	36	2	3	4	.08	86
MAY								
09...	<1	43	48	2	5	3	.06	90
22...	<1	46	53	4	4	5	.10	96
JUN								
04...	<1	30	33	3	2	3	.04	92
JUL								
21...	<1	43	45	5	6	5	.04	96
SEP								
01...	<1	44	66	3	6	3	.02	66

E--Estimated.

PEND OREILLE RIVER BASIN

12323240 BLACKTAIL CREEK AT BUTTE, MT

LOCATION.--Lat 45°54'38", long 112°31'38", in SW$^1/_4$NE$^1/_4$SE$^1/_4$ sec.24, T.3 N., R.8 W., Silver Bow County, Hydrologic Unit 17010201, on left bank, 70 feet upstream of George Street culvert in Butte, and 0.2 mi upstream of Silver Bow Creek.
DRAINAGE AREA.--95.4 mi^2.
PERIOD OF RECORD.--October 1988 to current year.
REVISED RECORDS.--WDR-MT-93-1: 1989-92 (M).
GAGE.--Water-stage recorder. Elevation of gage is 5,430 ft above sea level, from topographic map.
REMARKS.--Records good except those for July to August, which are poor. Slight regulation by Basin Creek Reservoir. 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 specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	12	10	9.6	11	12	10	11	8.3	6.7	8.2
2	11	10	11	9.9	11	11	13	10	11	11	6.5	7.6
3	10	10	11	9.8	10	11	12	10	9.1	15	6.4	6.3
4	10	11	10	10	10	12	13	9.9	8.3	9.1	6.3	6.8
5	10	11	10	10	9.9	12	17	14	8.0	8.0	6.2	6.3
6	9.7	11	10	10	9.9	12	18	13	7.8	7.8	5.5	6.0
7	9.7	11	11	10	11	12	14	12	7.6	7.3	5.0	5.7
8	9.8	11	10	9.9	11	13	14	12	7.2	7.0	4.9	5.2
9	9.9	11	9.9	10	12	12	14	13	7.3	7.0	4.8	6.0
10	10	11	10	9.9	11	11	15	15	7.5	7.1	4.9	6.8
11	10	11	10	9.9	11	11	15	14	8.7	7.4	5.5	6.6
12	10	11	10	10	11	11	15	13	8.3	7.4	5.8	6.4
13	11	11	11	10	11	11	18	12	8.5	7.8	5.8	6.0
14	10	11	10	10	12	12	17	13	8.1	7.9	5.4	5.8
15	9.8	11	10	10	11	11	15	13	8.1	8.0	4.7	6.1
16	9.6	11	11	11	11	11	15	14	8.1	8.4	4.9	6.3
17	9.6	11	11	10	10	11	15	20	8.0	8.9	5.0	6.6
18	11	12	11	10	10	11	15	21	8.0	9.1	5.8	6.2
19	10	11	11	10	10	11	14	15	9.1	9.7	4.8	6.2
20	10	12	11	10	10	11	14	13	8.0	9.4	4.3	6.2
21	10	11	11	10	11	11	13	12	8.2	9.2	4.4	8.7
22	10	11	11	10	12	11	13	11	9.2	8.8	4.2	6.9
23	10	10	11	10	12	11	13	10	8.6	8.7	4.8	7.0
24	10	10	11	10	12	11	13	10	7.4	8.4	4.3	7.0
25	10	11	11	10	11	11	12	10	7.3	8.4	4.2	7.0
26	11	12	10	10	11	11	11	9.7	7.0	8.2	5.1	6.8
27	11	12	10	10	11	12	11	10	7.0	8.1	4.4	6.8
28	11	11	10	10	12	16	11	9.9	7.0	7.9	5.4	6.7
29	11	11	10	9.7	12	13	12	11	6.9	7.6	5.8	6.8
30	11	12	9.8	9.6	---	13	11	11	6.9	7.3	6.2	7.1
31	11	---	9.8	9.5	---	12	---	12	---	7.2	5.8	---
TOTAL	318.1	331	325.5	309.2	316.4	360	415	383.5	243.2	261.4	163.8	198.1
MEAN	10.3	11.0	10.5	9.97	10.9	11.6	13.8	12.4	8.11	8.43	5.28	6.60
MAX	11	12	12	11	12	16	18	21	11	15	6.7	8.7
MIN	9.6	10	9.8	9.5	9.6	11	11	9.7	6.9	7.0	4.2	5.2
AC-FT	631	657	646	613	628	714	823	761	482	518	325	393

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2000, BY WATER YEAR (WY)

MEAN	10.7	10.6	9.58	9.28	11.7	15.1	17.4	21.6	22.4	13.1	10.4	9.51
MAX	15.0	13.9	12.6	12.6	25.5	29.9	28.6	41.9	61.5	26.0	17.7	13.6
(WY)	1998	1999	1999	1999	1995	1997	1996	1995	1995	1997	1997	1995
MIN	8.17	7.79	7.65	6.96	6.33	7.42	9.36	7.31	8.11	7.87	5.28	5.98
(WY)	1992	1993	1991	1993	1993	1991	1992	1992	2000	1991	2000	1992

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1989 - 2000	
ANNUAL TOTAL	5369.0		3625.2			
ANNUAL MEAN	14.7		9.90		13.4	
HIGHEST ANNUAL MEAN					19.9	1995
LOWEST ANNUAL MEAN					8.39	1992
HIGHEST DAILY MEAN	46	May 30	21	May 18	211	Feb 20 1995
LOWEST DAILY MEAN	8.0	Jul 29	4.2	Aug 22	4.2	Aug 22 2000
ANNUAL SEVEN-DAY MINIMUM	8.2	Jul 28	4.4	Aug 19	4.4	Aug 19 2000
INSTANTANEOUS PEAK FLOW			a37	May 15	b303	Feb 19 1995
INSTANTANEOUS PEAK STAGE			1.95	Jul 3	5.28	Feb 19 1995
INSTANTANEOUS LOW FLOW					c3.9	Sep 3 1992
ANNUAL RUNOFF (AC-FT)	10650		7190		9730	
10 PERCENT EXCEEDS	23		13		23	
50 PERCENT EXCEEDS	12		10		11	
90 PERCENT EXCEEDS	9.6		6.2		7.4	

a--Gage height, 1.65 ft.
b--From indirect measurement.
c--Gage height, 0.83 ft.

12323248 SILVER BOW CREEK ABOVE WASTEWATER TREATMENT PLANT OUTFLOW, AT BUTTE, MT

LOCATION.--Lat 45°59'49", long 112°33'43", in $SW^1/_4SE^1/_4NW^1/_4$ sec. 23, T.3 N., R.8 W., Silver Bow County, Hydrologic Unit 17010201, on left bank, 120 feet upstream of Interstate Highway 90 overpass in Butte, 0.8 mi upstream of Whiskey Gulch, 1.3 mi downstream of Blacktail Creek, and at river mile 20.2

DRAINAGE AREA.--103 mi^2.

PERIOD OF RECORD.--July 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,411.18 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Most flow above 40 ft^3/s is diverted into temporary bypass channel about 1 mi upstream until newly reconstructed channel stabilizes. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	e12	e13	e11	11	12	13	12	13	9.9	7.2	10
2	11	e11	e12	e11	13	12	14	11	13	14	7.3	11
3	10	e11	e12	11	12	12	13	11	11	19	7.3	8.7
4	11	e12	12	11	11	13	14	11	10	12	7.6	9.3
5	11	e12	12	11	11	13	17	16	10	10	7.5	8.3
6	11	e12	12	11	11	13	18	15	9.4	9.7	7.2	7.8
7	11	e12	12	11	12	13	15	14	8.9	9.0	7.0	7.6
8	11	e12	12	11	12	14	15	14	8.2	8.7	6.7	7.1
9	11	e12	11	11	13	13	16	15	9.0	8.2	7.0	8.9
10	11	e12	11	e11	12	12	16	16	9.0	7.9	7.3	9.5
11	11	e12	11	11	11	12	16	15	11	8.0	8.2	9.0
12	11	e12	12	11	11	12	16	14	9.8	7.4	8.5	8.1
13	11	e12	12	e11	11	12	19	14	10	7.6	9.6	7.1
14	11	e12	11	11	13	13	17	14	9.4	7.4	9.0	6.9
15	11	e12	11	11	12	12	15	14	9.8	7.2	7.6	7.1
16	11	e12	12	12	12	12	15	17	10	7.3	7.6	7.3
17	11	e12	12	12	11	12	16	19	9.0	7.8	6.7	7.7
18	11	e12	12	11	10	12	16	20	8.8	7.7	7.7	7.3
19	e11	e12	e12	11	11	12	15	16	11	8.3	7.2	7.4
20	e11	e12	e12	11	11	12	14	14	9.3	7.8	6.5	7.5
21	e11	e12	e12	12	12	12	14	14	9.3	7.4	6.5	11
22	e11	e12	e12	11	13	12	14	13	11	7.7	6.1	e7.0
23	e11	e11	e12	11	13	12	14	12	10	7.6	7.0	e7.0
24	e11	e11	e12	11	12	12	14	12	8.7	7.5	6.7	7.6
25	e11	e12	e12	11	12	12	13	12	8.6	7.6	6.4	7.4
26	e12	e13	e11	11	12	13	12	11	8.2	7.3	7.8	7.3
27	e12	e13	e11	11	12	13	12	12	8.0	7.3	6.7	7.2
28	e12	e12	e11	11	12	18	13	12	7.8	7.2	7.3	7.3
29	e12	e12	e11	e11	12	14	13	13	7.5	7.1	7.4	7.4
30	e12	e13	e11	e11	---	14	13	13	7.5	7.1	7.7	7.7
31	e12	---	e11	e11	---	13	---	14	---	7.2	7.3	---
TOTAL	346	359	362	344	341	393	442	430	286.2	265.9	227.6	240.5
MEAN	11.2	12.0	11.7	11.1	11.8	12.7	14.7	13.9	9.54	8.58	7.34	8.02
MAX	12	13	13	12	13	18	19	20	13	19	9.6	11
MIN	10	11	11	11	10	12	12	11	7.5	7.1	6.1	6.9
AC-FT	686	712	718	682	676	780	877	853	568	527	451	477

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2000, BY WATER YEAR (WY)

MEAN	11.9	12.8	12.5	12.1	12.5	15.8	17.3	19.0	17.0	11.4	10.4	9.84
MAX	12.5	13.7	13.2	13.0	13.2	18.9	19.8	24.1	24.5	15.3	12.2	11.8
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1998	1998	1998
MIN	11.2	12.0	11.7	11.1	11.8	12.7	14.7	13.9	9.54	8.58	7.34	8.02
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1998 - 2000	
ANNUAL TOTAL	5476.1		4037.2			
ANNUAL MEAN	15.0		11.0		13.2	
HIGHEST ANNUAL MEAN					15.4	1999
LOWEST ANNUAL MEAN					11.0	2000
HIGHEST DAILY MEAN	37	Jun 4	20	May 18	37	Jun 4 1999
LOWEST DAILY MEAN	7.4	Jul 29	6.1	Aug 22	6.1	Aug 22 2000
ANNUAL SEVEN-DAY MINIMUM	7.8	Jul 28	6.6	Aug 19	6.6	Aug 19 2000
INSTANTANEOUS PEAK FLOW			a44	Jul 3	d130	Jul 30 1998
INSTANTANEOUS PEAK STAGE			b4.94	Nov 26	b4.94	Nov 26 1999
INSTANTANEOUS LOW FLOW			c4.8	Aug 13	c4.8	Aug 13 2000
ANNUAL RUNOFF (AC-FT)	10860		8010		9570	
10 PERCENT EXCEEDS	25		14		19	
50 PERCENT EXCEEDS	12		11		12	
90 PERCENT EXCEEDS	9.1		7.3		8.2	

a--Gage height, 2.46 ft.
b--Backwater from channel reconstruction downstream.
c--Gage height, 0.99 ft.
d--Gage height, 4.47 ft, from indirect measurement.
e--Estimated.

12323250 SILVER BOW CREEK BELOW BLACKTAIL CREEK, AT BUTTE, MT

LOCATION (REVISED).--Lat 45°59'47", long 112°33'45", in $SW^1/_4SE^1/_4NW^1/_4$ sec. 23, T.3 N., R.8 W., Silver Bow County, Hydrologic Unit 17010201, on right bank at Interstate 90 overpass in Butte, 0.8 mi upstream from Whiskey Gulch, 1.3 mi downstream from Blacktail Creek, and at river mile 20.2.

DRAINAGE AREA.--103 mi^2, revised.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

REVISED RECORDS.--WDR-MT-92-1: 1984-90 (M). WDR-MT-98-1: Drainage area. WDR-MT-2000-1: Drainage area.

GAGE (REVISED).--Water-stage recorder. Datum of gage is 5,409.47 ft above sea level. October 1983 to Sept. 14, 1997, water-stage recorder 150 ft upstream at datum 1.40 ft higher. Sept. 15, 1997 to Dec. 3, 1997, no gage in operation due to channel reconstruction during EPA Superfund cleanup operations. Dec. 3, 1997 to Aug. 16, 1999, water-stage recorder 0.8 mi downstream at different datum. Aug. 16, 1999 to May 10, 2000, water-stage recorder 2.1 mi downstream at different datum.

REMARKS.--Water-discharge records good. Flow slightly regulated by Silver Bow County sewage treatment plant. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	21	20	19	17	20	21	19	18	17	14	17
2	19	20	20	20	20	19	23	19	17	24	14	17
3	19	20	19	20	18	20	22	19	16	32	14	15
4	19	21	19	20	18	20	23	19	15	20	14	15
5	19	21	19	21	18	21	26	24	15	18	15	14
6	21	21	19	20	18	21	28	22	15	17	14	14
7	21	21	20	20	19	21	24	21	14	17	15	14
8	21	21	19	20	19	22	23	21	14	17	14	13
9	19	21	19	20	19	21	24	23	15	16	14	15
10	19	21	18	20	18	21	25	23	15	16	15	16
11	20	21	18	20	18	21	24	21	17	16	16	15
12	21	21	19	19	17	21	24	20	16	16	15	14
13	20	20	19	19	18	21	27	19	16	15	16	13
14	20	20	19	19	19	21	26	19	15	15	15	12
15	20	21	19	19	19	20	24	20	16	14	14	12
16	19	21	20	20	19	20	23	24	16	14	14	12
17	19	21	20	20	18	20	25	29	15	15	14	13
18	20	21	20	21	17	20	24	29	15	16	15	13
19	20	20	20	22	17	20	23	23	18	15	15	13
20	20	20	20	21	17	20	22	20	16	15	14	13
21	20	20	20	19	19	20	22	19	15	15	15	17
22	20	21	21	19	21	21	22	18	18	14	14	14
23	20	20	21	19	20	21	22	17	16	14	14	14
24	20	19	20	19	20	21	22	17	15	14	14	14
25	20	20	20	18	20	21	21	16	15	14	14	14
26	20	21	20	18	19	21	21	16	15	14	15	14
27	21	21	20	18	20	22	20	16	14	14	14	14
28	21	20	20	18	20	27	21	16	14	14	15	14
29	21	21	21	18	20	24	21	18	14	14	15	14
30	21	20	22	18	---	23	20	19	14	14	14	15
31	20	---	21	17	---	22	---	20	---	14	14	---
TOTAL	619	617	612	601	542	653	693	626	464	500	449	424
MEAN	20.0	20.6	19.7	19.4	18.7	21.1	23.1	20.2	15.5	16.1	14.5	14.1
MAX	21	21	22	22	21	27	28	29	18	32	16	17
MIN	19	19	18	17	17	19	20	16	14	14	14	12
AC-FT	1230	1220	1210	1190	1080	1300	1370	1240	920	992	891	841

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2000, BY WATER YEAR (WY)

MEAN	20.9	20.3	19.0	18.6	21.0	25.5	29.0	32.0	31.1	22.9	21.1	19.7
MAX	26.7	25.7	24.0	25.6	38.0	40.7	42.2	53.5	75.2	37.0	28.7	25.9
(WY)	1984	1984	1998	1984	1995	1997	1998	1995	1995	1995	1993	1995
MIN	17.0	16.5	15.4	13.4	15.4	17.2	14.9	12.6	15.5	15.6	14.2	14.1
(WY)	1991	1993	1989	1989	1994	1991	1992	1992	2000	1991	1992	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1984 - 2000	
ANNUAL TOTAL	8851		6800			
ANNUAL MEAN	24.2		18.6		23.4	
HIGHEST ANNUAL MEAN					30.8	1995
LOWEST ANNUAL MEAN					16.9	1992
HIGHEST DAILY MEAN	64	May 30	32	Jul 3	258	Feb 20 1995
LOWEST DAILY MEAN	16	Aug 1	12	Sep 14	8.0	May 8 1992
ANNUAL SEVEN-DAY MINIMUM	17	Jul 28	13	Sep 13	11	May 2 1992
INSTANTANEOUS PEAK FLOW			a74	Jul 3	d447	Jul 30 1998
INSTANTANEOUS PEAK STAGE			b4.72	Apr 13	b8.11	Jul 30 1998
INSTANTANEOUS LOW FLOW			c8.2	Dec 3	b6.4	Aug 27 1996
ANNUAL RUNOFF (AC-FT)	17560		13490		16970	
10 PERCENT EXCEEDS	34		22		34	
50 PERCENT EXCEEDS	21		19		21	
90 PERCENT EXCEEDS	19		14		16	

a--Gage height, 2.36 ft.
b--Site and datum then in use.
c--Gage height, 4.17 ft, site and datum then in use.
d--From culvert computation.

12323250 SILVER BOW CREEK BELOW BLACKTAIL CREEK, AT BUTTE, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1993 to August 1995, December 1996 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
15...	1530	21	7.9	522	17.0	7.0	170	47	12
MAR 2000									
06...	1315	23	7.9	525	11.0	9.0	170	47	12
APR									
04...	1210	24	7.9	493	17.5	10.0	160	46	11
MAY									
09...	1000	22	7.6	470	10.5	8.5	150	42	10
22...	1105	21	7.7	481	22.0	12.5	160	45	11
JUN									
04...	1545	16	8.1	506	24.5	20.0	170	47	12
JUL									
21...	0830	14	7.5	546	18.0	13.5	160	46	12
SEP									
01...	0815	13	7.5	562	14.0	15.0	170	48	12

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
15...	8	13	0.2	1	7	82	24	1180	<1
MAR 2000									
06...	11	11	1	2	20	76	31	843	<1
APR									
04...	7	10	0.7	2	16	54	31	834	<1
MAY									
09...	7	9	0.8	1	14	30	47	426	<1
22...	7	8	<1	1	39	26	23	322	<1
JUN									
04...	9	10	0.7	0.9	16	27	18	244	E1
JUL									
21...	7	10	1	1	13	31	21	107	<1
SEP									
01...	7	7	0.8	0.7	9	16	20	92	<1

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
15...	36	305	428	118	285	19	1.1	86
MAR 2000								
06...	14	534	595	318	426	20	1.2	71
APR								
04...	15	487	510	237	319	18	1.2	84
MAY								
09...	3	348	352	241	257	9	.53	92
22...	2	252	269	248	254	6	.34	85
JUN								
04...	2	246	268	155	178	4	.17	89
JUL								
21...	1	189	208	266	292	4	.16	85
SEP								
01...	1	161	176	217	234	4	.14	81

PEND OREILLE RIVER BASIN

12323600 SILVER BOW CREEK AT OPPORTUNITY, MT

LOCATION.--Lat 46°06'28", long 112°48'17", in $SE^1/_4SW^1/_4SE^1/_4$ sec.11, T.4 N., R.10 W., Deer Lodge County, Hydrologic Unit 17010201, on left bank 200 ft downstream from Stuart Street bridge, 0.5 mi east of Opportunity, and 1.0 mi upstream from Mill Creek.
DRAINAGE AREA.--284 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1988 to current year. Prior to October 1991, seasonal records only.
GAGE.--Water-stage recorder. Datum of gage is 4,912.37 ft above sea level.
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Numerous diversions upstream from station for irrigation and municipal use. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	33	34	e32	e28	35	36	40	44	16	14	15
2	31	34	33	e30	e30	34	38	41	40	25	13	19
3	31	33	33	e32	e34	35	37	42	33	29	13	18
4	31	34	e31	e32	e32	36	40	43	31	37	14	18
5	31	34	e32	e32	e32	37	45	45	28	22	14	18
6	32	34	e32	e32	e32	38	49	50	29	20	14	18
7	33	34	e33	e32	e34	38	44	44	25	18	14	19
8	33	34	e32	e33	e34	39	39	39	22	21	14	22
9	33	34	e31	e32	34	37	41	41	24	18	14	21
10	32	34	e30	e31	34	36	45	41	24	17	14	22
11	32	34	e30	e32	e33	36	46	43	30	17	18	25
12	32	34	e31	e30	e32	35	47	40	24	18	15	24
13	32	33	e32	e30	33	35	55	38	25	19	15	22
14	32	33	e32	e32	33	36	64	37	22	19	15	19
15	32	35	e32	e32	35	35	55	38	22	18	14	18
16	32	34	e32	e32	34	35	50	40	25	17	13	20
17	32	35	32	e32	34	35	55	67	22	17	13	20
18	33	36	32	e34	33	35	55	63	20	15	13	20
19	33	33	e32	e36	33	34	56	55	21	15	14	21
20	33	34	e32	e34	33	33	53	50	22	15	14	22
21	33	33	32	e32	33	33	53	48	19	15	14	29
22	33	33	34	e32	35	34	53	45	19	14	14	25
23	33	34	e32	e32	36	36	54	43	21	14	14	24
24	33	e32	e30	e32	35	34	49	43	18	14	17	25
25	33	34	e30	e32	35	34	45	41	16	14	16	26
26	33	36	e30	e31	e33	35	44	36	17	13	16	25
27	34	35	e31	e30	34	37	41	35	16	13	16	25
28	35	34	e32	e30	35	44	42	38	15	13	16	25
29	35	33	e34	e29	35	41	44	37	15	14	16	25
30	34	34	e36	e29	---	38	41	40	18	13	14	25
31	33	---	e34	e28	---	37	---	47	---	13	14	---
TOTAL	1010	1017	993	979	968	1117	1416	1350	707	543	449	655
MEAN	32.6	33.9	32.0	31.6	33.4	36.0	47.2	43.5	23.6	17.5	14.5	21.8
MAX	35	36	36	36	36	44	64	67	44	37	18	29
MIN	31	32	30	28	28	33	36	35	15	13	13	15
AC-FT	2000	2020	1970	1940	1920	2220	2810	2680	1400	1080	891	1300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2000, BY WATER YEAR (WY)

MEAN	40.3	40.4	37.5	40.3	60.5	57.4	69.0	105	108	51.9	33.0	34.6
MAX	55.8	49.5	49.2	68.6	184	86.6	120	261	281	107	69.5	59.8
(WY)	1998	1996	1998	1997	1996	1997	1996	1997	1997	1995	1993	1993
MIN	29.5	30.5	23.9	26.5	27.1	36.0	44.1	31.3	23.6	17.5	14.5	21.8
(WY)	1989	1993	1994	1993	1993	2000	1992	1992	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1988 - 2000	
ANNUAL TOTAL	17967		11204			
ANNUAL MEAN	49.2		30.6		59.9	
HIGHEST ANNUAL MEAN					99.0	1997
LOWEST ANNUAL MEAN					30.6	2000
HIGHEST DAILY MEAN	197	Jun 4	67	May 17	d1300	Feb 11 1996
LOWEST DAILY MEAN	19	Aug 24	13	Jul 26	13	Aug 7 1990
ANNUAL SEVEN-DAY MINIMUM	20	Aug 21	13	Jul 25	13	Jul 25 2000
INSTANTANEOUS PEAK FLOW			a79	May 17	d1300	Feb 11 1996
INSTANTANEOUS PEAK STAGE			b4.12	Dec 26	b6.91	Feb 11 1996
INSTANTANEOUS LOW FLOW			c11	Aug 16	f11	Aug 7 1990
ANNUAL RUNOFF (AC-FT)	35640		22220		43420	
10 PERCENT EXCEEDS	86		43		101	
50 PERCENT EXCEEDS	40		32		43	
90 PERCENT EXCEEDS	28		15		24	

a--Gage height, 2.77 ft.
b--Backwater from ice.
c--Gage height, 2.11 ft.
d--Estimated daily discharge during period of ice effect.
e--Estimated.
f--Gage height, 1.55 ft.

12323600 SILVER BOW CREEK AT OPPORTUNITY, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1993 to August 1995, December 1996 to current year.
PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: March 1993 to September 1995.
REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 563 mg/L, July 13, 1995; minimum daily mean, 3 mg/L, Sep. 16, 1993; Feb. 3-7, July 22, 1994.
SEDIMENT LOAD: Maximum daily, 495 tons, June 6, 1995; minimum daily, 0.19 ton, Feb. 4-7, 1994.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
16...	0745	35	8.2	491	3.0	2.0	170	51	11
MAR 2000									
06...	1415	36	8.8	497	12.0	6.5	170	50	11
APR									
04...	1310	39	8.9	464	17.0	10.5	170	49	11
MAY									
09...	1115	45	8.6	464	10.0	8.5	160	47	10
22...	1210	45	9.0	392	24.0	14.0	150	44	9.0
JUN									
04...	1650	25	9.5	403	27.5	22.5	150	45	9.3
JUL									
21...	0920	15	8.6	599	20.0	14.5	210	62	14
SEP									
01...	1005	16	8.5	616	14.0	13.0	210	62	13

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
16...	11	17	1	1	31	87	E9	484	<1
MAR 2000									
06...	17	18	.8	2	43	129	15	804	<1
APR									
04...	12	18	.6	<1	32	109	11	803	<1
MAY									
09...	10	16	.5	1	24	84	<10	667	E.5
22...	9	13	.3	.7	19	62	E7	537	<1
JUN									
04...	13	16	.2	.6	34	62	13	385	<1
JUL									
21...	16	22	.3	.7	26	65	14	276	<1
SEP									
01...	19	23	.4	.9	30	79	E9	305	<1

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
16...	17	416	467	352	469	11	1.0	78
MAR 2000								
06...	19	546	623	153	359	15	1.5	88
APR								
04...	19	421	488	96	301	17	1.8	85
MAY								
09...	15	386	471	147	324	17	2.1	88
22...	12	180	277	56	190	14	1.7	85
JUN								
04...	8	68	174	27	144	10	.68	87
JUL								
21...	7	188	253	71	169	7	.28	85
SEP								
01...	8	350	460	109	251	9	.39	81

E--Estimated.

PEND OREILLE RIVER BASIN

12323750 SILVER BOW CREEK AT WARM SPRINGS, MT

LOCATION.--Lat 46°10'50", long 112°46'46", in $SW^1/_4SE^1/_4SW^1/_4$ sec.18, T.5 N., R.9 W., Deer Lodge County, Hydrologic Unit 17010201, on left bank 1.0 mi upstream from confluence with Warm Springs Creek, 1.1 mi upstream from county highway bridge, and 0.5 mi east of Warm Springs.

DRAINAGE AREA.--394 mi^2; area at site used prior to May 24, 1994, 483 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1972 to September 1979, April 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,800.31 ft above sea level. Prior to May 24, 1994, gage located at sites 0.8 mi downstream at different datum.

REMARKS.--Water-discharge records good escept those for estimated daily discharges, which are fair. Flow is regulated by dam on tailing ponds about 0.2 mi upstream from gage. Diversions for irrigation of about 4,650 acres upstream of station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	40	e45	45	e40	49	44	56	92	34	18	16
2	31	38	e44	46	41	49	45	57	87	39	18	16
3	31	38	e44	46	42	50	47	59	81	39	17	16
4	33	40	e43	46	42	50	48	57	78	44	18	19
5	35	41	45	47	43	49	47	59	77	38	18	20
6	35	43	45	47	43	50	44	58	77	37	16	21
7	36	42	46	46	44	52	45	57	75	35	15	21
8	39	41	46	47	44	55	44	56	71	34	16	20
9	38	42	44	47	46	55	45	59	67	33	16	18
10	38	42	45	46	47	55	45	59	67	32	16	19
11	39	42	45	48	47	54	41	59	67	30	19	19
12	39	43	48	45	47	51	40	57	60	29	17	20
13	40	41	48	44	47	50	44	57	59	29	17	19
14	39	41	45	48	49	49	48	57	55	28	17	19
15	40	41	49	46	50	47	52	57	56	27	17	19
16	40	40	48	47	49	49	56	57	59	26	16	19
17	40	42	e48	48	48	48	60	72	54	26	16	19
18	40	45	e48	47	47	51	62	82	49	27	17	19
19	40	e44	e46	48	45	48	66	82	48	28	17	20
20	40	46	e47	48	44	47	66	81	47	29	16	20
21	41	44	e47	49	45	47	62	81	44	29	16	21
22	41	41	e48	49	48	48	65	85	43	26	17	19
23	46	41	e47	49	48	47	73	91	43	24	17	20
24	44	42	e45	48	52	43	70	88	41	22	17	21
25	43	44	e45	48	53	41	68	85	39	23	17	23
26	42	47	e45	49	51	39	65	83	39	23	17	23
27	45	45	e46	49	51	42	63	83	37	21	17	24
28	46	44	46	47	51	42	60	80	36	21	16	24
29	45	e43	46	43	49	41	60	86	35	21	17	25
30	48	e45	45	41	---	40	58	83	34	20	17	24
31	42	---	44	40	---	42	---	94	---	19	17	---
TOTAL	1228	1268	1423	1444	1353	1480	1633	2177	1717	893	522	603
MEAN	39.6	42.3	45.9	46.6	46.7	47.7	54.4	70.2	57.2	28.8	16.8	20.1
MAX	48	47	49	49	53	55	73	94	92	44	19	25
MIN	31	38	43	40	40	39	40	56	34	19	15	16
AC-FT	2440	2520	2820	2860	2680	2940	3240	4320	3410	1770	1040	1200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2000, BY WATER YEAR (WY)*

MEAN	79.5	86.3	79.6	83.2	88.5	119	141	267	300	131	74.7	68.4
MAX	193	161	156	152	130	207	281	586	770	356	201	137
(WY)	1976	1976	1976	1974	1996	1976	1976	1976	1975	1975	1975	1975
MIN	39.6	42.3	45.9	46.6	46.7	47.7	54.4	70.2	57.2	28.8	16.8	20.1
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1972 - 2000*	
ANNUAL TOTAL	30164		15741			
ANNUAL MEAN	82.6		43.0		127	
HIGHEST ANNUAL MEAN					228	1975
LOWEST ANNUAL MEAN					43.0	2000
HIGHEST DAILY MEAN	354	Jun 5	94	May 31	1220	Jun 20 1975
LOWEST DAILY MEAN	30	Sep 30	15	Aug 7	15	Sep 12 1973
ANNUAL SEVEN-DAY MINIMUM	32	Sep 29	16	Aug 4	16	Aug 4 2000
INSTANTANEOUS PEAK FLOW			103	May 31	a1320	Jun 20 1975
INSTANTANEOUS PEAK STAGE			2.39	May 31	b8.64	Jan 16 1974
ANNUAL RUNOFF (AC-FT)	59830		31220		91780	
10 PERCENT EXCEEDS	173		61		255	
50 PERCENT EXCEEDS	55		44		89	
90 PERCENT EXCEEDS	37		19		46	

*--During periods of operation (March 1972 to September 1979, April 1993 to current year).
a--Gage height, 7.47 ft, site and datum then in use.
b--Backwater from ice, site and datum then in use.
e--Estimated.

12323750 SILVER BOW CREEK AT WARM SPRINGS, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1993 to current year.
PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: April 1993 to September 1995.
REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 429 mg/L, Mar. 15, 1994; minimum daily mean, 1 mg/L, several days in October 1995.
SEDIMENT LOAD: Maximum daily, 302 tons, June 6, 1995; minimum daily, 0.12 ton, several days in August 1995.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
16...	0930	40	8.4	601	12.0	5.0	240	69	17
MAR 2000									
06...	1515	50	8.7	587	15.5	6.0	240	70	16
APR									
04...	1345	53	8.5	603	17.0	10.0	240	71	16
MAY									
09...	1210	60	8.7	547	10.0	11.0	220	62	16
22...	1300	87	9.0	395	22.5	15.5	150	43	11
JUN									
04...	1740	79	9.2	399	27.5	19.0	150	42	12
JUL									
21...	1040	29	9.2	588	20.0	17.5	260	75	18
SEP									
01...	1150	16	8.6	682	18.0	13.5	290	85	18

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
16...	10	12	<.1	<.1	3	5	E7	152	<1
MAR 2000									
06...	10	13	<.1	.1	6	8	E9	222	<1
APR									
04...	10	12	<.1	.1	9	10	E5	262	<1
MAY									
09...	16	18	<.1	<.1	4	7	17	233	<1
22...	20	25	<.1	E.09	5	9	17	297	<1
JUN									
04...	25	28	<.1	<.1	5	9	31	270	<1
JUL									
21...	26	33	<.1	<.1	3	7	<10	88	<1
SEP									
01...	22	24	<.1	<.1	3	6	<10	72	<1

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
16...	E.8	136	151	10	<31	1	.11	90
MAR 2000								
06...	<1	133	180	13	30	4	.54	88
APR								
04...	2	159	216	12	26	6	.86	69
MAY								
09...	1	252	299	7	15	3	.49	93
22...	1	111	228	4	16	7	1.6	92
JUN								
04...	1	105	240	6	10	4	.85	95
JUL								
21...	<1	28	79	2	7	5	.39	67
SEP								
01...	<1	47	89	2	7	4	.17	75

E--Estimated.

PEND OREILLE RIVER BASIN

12323760 WARM SPRINGS CREEK NEAR ANACONDA, MT

LOCATION.--Lat 46°08'01", long 112°54'48", in $SW^1/_4NW^1/_4NE^1/_4$ sec. 1, T.4N., R.11W., Deer Lodge County, Hydrologic Unit 17010201, on left bank 0.3 mi downstream from Arbiter Bridge on private road, 1.0 mi upstream from Dutchman Creek, 1.2 mi northeast of Anaconda, and at river mile 9.5.

DRAINAGE AREA.--157 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,150 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation by Storm King Lake. Minor diversions upstream of station for irrigation and municipal use. 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	65	57	43	51	49	48	51	113	78	64	61
2	85	64	56	43	56	49	51	60	107	90	63	63
3	82	65	55	42	55	50	50	64	107	88	63	66
4	93	65	47	43	53	50	53	71	115	78	66	70
5	90	70	51	44	52	50	57	71	124	72	67	72
6	88	69	55	43	53	50	53	70	127	70	64	69
7	94	66	54	44	52	50	50	65	123	69	64	68
8	92	64	52	45	53	50	50	63	130	69	64	66
9	98	62	49	47	52	49	51	64	129	69	63	70
10	97	62	52	46	52	49	52	67	113	66	63	69
11	95	62	52	47	51	49	52	66	107	62	66	72
12	94	61	53	48	51	49	54	63	97	60	64	69
13	95	61	54	e46	52	50	58	60	103	59	64	67
14	96	60	50	48	52	49	60	58	91	57	63	66
15	97	60	51	49	52	48	57	56	111	57	62	65
16	98	60	53	50	51	48	55	59	112	56	63	65
17	98	60	54	49	46	49	54	90	93	56	62	66
18	93	60	54	48	48	48	55	87	80	54	62	65
19	89	58	53	50	47	49	55	96	84	55	63	66
20	75	60	53	50	47	48	56	88	82	54	63	67
21	81	58	53	52	52	48	54	95	74	62	63	72
22	85	58	51	51	54	49	55	125	73	65	62	70
23	78	52	48	51	52	49	60	127	72	64	60	70
24	67	56	e45	50	52	48	56	114	66	64	61	74
25	64	58	e42	50	51	48	54	109	66	64	64	73
26	73	63	e42	51	50	49	55	116	61	65	64	71
27	85	60	e42	50	50	49	53	105	60	65	64	71
28	90	57	e42	49	50	53	53	133	59	64	62	70
29	88	57	43	e47	50	50	53	135	58	65	63	70
30	76	57	42	e45	---	49	50	119	54	62	61	70
31	69	---	42	e48	---	48	---	128	---	63	61	---
TOTAL	2703	1830	1547	1469	1487	1523	1614	2675	2791	2022	1958	2053
MEAN	87.2	61.0	49.9	47.4	51.3	49.1	53.8	86.3	93.0	65.2	63.2	68.4
MAX	98	70	57	52	56	53	60	135	130	90	67	74
MIN	64	52	42	42	46	48	48	51	54	54	60	61
AC-FT	5360	3630	3070	2910	2950	3020	3200	5310	5540	4010	3880	4070

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2000, BY WATER YEAR (WY)

MEAN	101	79.7	62.6	58.1	58.0	57.5	59.6	124	200	127	86.0	81.7
MAX	113	99.5	78.6	71.0	68.0	67.3	66.5	159	260	196	99.0	95.1
(WY)	1998	1998	1998	1998	1998	1998	1998	1998	1999	1998	1999	1999
MIN	87.2	61.0	49.9	47.4	51.3	49.1	53.8	86.3	93.0	65.2	63.2	68.4
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1997 - 2000	
ANNUAL TOTAL	34185		23672			
ANNUAL MEAN	93.7		64.7		91.4	
HIGHEST ANNUAL MEAN					112	1998
LOWEST ANNUAL MEAN					64.7	2000
HIGHEST DAILY MEAN	334	Jun 19	135	May 29	334	Jun 19 1999
LOWEST DAILY MEAN	42	Dec 25	42	Dec 25	40	Dec 21 1998
ANNUAL SEVEN-DAY MINIMUM	42	Dec 25	42	Dec 25	42	Dec 25 1999
INSTANTANEOUS PEAK FLOW			152	May 28	b354	Jun 19 1999
INSTANTANEOUS PEAK STAGE			2.98	May 28	c4.89	Dec 26 1998
INSTANTANEOUS LOW FLOW			a39	Feb 17	a39	Dec 20 1998
ANNUAL RUNOFF (AC-FT)	67810		46950		66200	
10 PERCENT EXCEEDS	186		94		154	
50 PERCENT EXCEEDS	66		60		70	
90 PERCENT EXCEEDS	53		48		52	

a--Gage height, 2.18 ft, but may have been lower during period of ice effect.
b--Gage height, 3.66 ft.
c--Backwater from ice.
e--Estimated.

PEND OREILLE RIVER BASIN

12323770 WARM SPRINGS CREEK AT WARM SPRINGS, MT

LOCATION.--Lat 46°10'51", long 112°47'07", in $SW^1/_4SW^1/_4SW^1/_4$ sec.18, T.5 N., R.9 W., Deer Lodge County, Hydrologic Unit 17010201, on left bank at county road bridge 0.2 mi southeast of Warm Springs post office, and at river mile 0.9.

DRAINAGE AREA.--163 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,811.25 ft above sea level.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Numerous diversions upstream from station for irrigation and municipal use. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	48	38	e29	e40	44	43	34	44	17	17	17
2	44	49	37	e29	e45	43	46	40	39	31	17	18
3	39	48	36	e28	44	44	44	46	38	35	17	22
4	48	44	e30	e29	43	44	47	52	41	30	19	32
5	47	46	e32	e30	42	45	50	51	44	26	21	34
6	45	47	e34	e30	42	44	48	41	49	25	19	32
7	51	44	33	e31	42	44	46	37	46	25	18	32
8	50	43	32	e33	42	46	45	33	49	24	19	35
9	56	43	e30	e35	43	44	46	34	53	24	18	38
10	58	45	e31	e34	42	44	45	37	46	23	18	37
11	57	47	31	e36	42	44	40	37	42	21	21	40
12	53	48	32	e38	42	43	41	35	35	18	20	38
13	51	48	33	e37	42	44	44	33	37	17	20	35
14	52	47	e31	e38	42	44	45	31	30	17	20	33
15	64	47	e32	39	42	44	43	28	34	17	19	32
16	65	47	32	40	41	43	41	27	39	17	21	32
17	65	45	33	39	38	44	40	42	30	16	20	34
18	67	42	33	40	e38	43	40	44	24	9.6	20	33
19	64	38	33	40	39	44	40	43	22	8.0	21	34
20	57	40	32	40	40	44	41	36	23	5.2	21	35
21	57	38	32	40	42	43	39	37	20	5.3	21	39
22	60	39	32	40	44	45	39	44	18	7.2	18	39
23	55	37	e30	40	44	45	43	47	18	7.8	16	39
24	47	37	e27	40	44	44	41	41	15	6.8	14	41
25	45	39	e25	39	43	43	39	37	16	10	17	40
26	48	42	e25	40	42	43	40	39	14	11	17	38
27	56	40	e25	39	43	43	37	36	11	17	17	36
28	61	37	e25	38	43	47	35	46	11	17	17	34
29	61	37	e26	e37	44	45	36	52	10	18	17	33
30	54	38	e26	e36	---	44	35	47	9.1	17	18	34
31	48	---	e27	e38	---	42	---	52	---	16	18	---
TOTAL	1674	1290	955	1122	1220	1363	1259	1239	907.1	538.9	576	1016
MEAN	54.0	43.0	30.8	36.2	42.1	44.0	42.0	40.0	30.2	17.4	18.6	33.9
MAX	67	49	38	40	45	47	50	52	53	35	21	41
MIN	39	37	25	28	38	42	35	27	9.1	5.2	14	17
AC-FT	3320	2560	1890	2230	2420	2700	2500	2460	1800	1070	1140	2020

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2000, BY WATER YEAR (WY)

MEAN	45.3	45.9	34.5	37.7	37.0	36.0	42.9	86.9	144	56.5	24.8	31.2
MAX	95.2	84.5	77.8	82.1	63.0	53.5	62.8	196	362	170	125	81.6
(WY)	1998	1998	1985	1985	1986	1998	1986	1997	1997	1997	1997	1997
MIN	10.6	13.1	5.89	4.21	4.54	18.9	13.3	19.3	7.05	.42	.46	2.61
(WY)	1988	1993	1993	1993	1993	1991	1991	1992	1992	1985	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1984 - 2000	
ANNUAL TOTAL	22504		13160.0			
ANNUAL MEAN	61.7		36.0		51.8	
HIGHEST ANNUAL MEAN					108	1997
LOWEST ANNUAL MEAN					16.6	1992
HIGHEST DAILY MEAN	240	Jun 22	67	Oct 18	475	Jun 6 1997
LOWEST DAILY MEAN	25	Dec 25	5.2	Jul 20	.00	Aug 4 1988
ANNUAL SEVEN-DAY MINIMUM	26	Dec 24	7.1	Jul 18	.05	Aug 3 1988
INSTANTANEOUS PEAK FLOW			a70	Oct 18	d494	Jun 5 1997
INSTANTANEOUS PEAK STAGE			b4.01	Jan 1	b5.70	Feb 2 1986
INSTANTANEOUS LOW FLOW			c4.3	Jul 21		
ANNUAL RUNOFF (AC-FT)	44640		26100		37530	
10 PERCENT EXCEEDS	131		48		103	
50 PERCENT EXCEEDS	47		39		39	
90 PERCENT EXCEEDS	33		17		5.8	

a--Gage height, 2.16 ft.
b--Backwater from ice.
c--Gage height, 0.91 ft.
d--Gage height, 4.55 ft.
e--Estimated.

12323770 WARM SPRINGS CREEK AT WARM SPRINGS, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1993 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July to September 2000.
INSTRUMENTATION.--Temperature recorder installed July 6, 2000.
REMARKS.--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: During period July to September 2000, maximum, 23.5°C, July 21, 29, 2000; minimum 1.5°C, Sept. 23, 2000.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of operation, maximum, 23.5°C, July 21, 29; minimum 1.5°C, Sept. 23.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
16...	0815	48	8.2	352	3.0	3.5	170	51	10
APR 2000									
04...	1430	47	8.5	362	18.0	11.5	170	53	11
MAY									
22...	1345	48	8.5	253	23.0	15.0	120	36	6.7
JUN									
04...	1820	43	8.4	259	29.0	18.0	120	36	6.8
JUL									
21...	1015	4.8	8.3	539	26.0	16.0	270	83	15
SEP									
01...	1040	18	8.3	373	10.5	12.0	180	54	9.7

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
16...	4	6	<.1	.2	E1	26	13	375	<1
APR 2000									
04...	4	4	<.1	<.1	2	7	<10	75	<1
MAY									
22...	4	5	<.1	<.1	3	12	13	167	<1
JUN									
04...	5	5	<.1	<.1	3	12	<10	140	<1
JUL									
21...	9	12	<.1	<.1	4	8	E6	44	<1
SEP									
01...	7	7	<.1	<.1	4	7	E9	53	<1

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
16...	2	257	302	1	<31	18	2.3	82
APR 2000								
04...	<1	187	204	5	3	5	.63	69
MAY								
22...	1	131	216	3	6	10	1.3	72
JUN								
04...	1	123	208	3	3	7	.81	71
JUL								
21...	<1	61	80	2	2	4	.05	83
SEP								
01...	<1	96	136	2	3	3	.15	69

E--Estimated.

12323770 WARM SPRINGS CREEK AT WARM SPRINGS, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, JULY TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JULY			AUGUST			SEPTEMBER	
1				23.0	14.5	18.5	15.0	12.0	13.0
2				22.5	14.0	18.0	13.0	10.5	12.0
3				18.0	13.5	16.0	11.5	7.5	9.5
4				17.5	14.0	15.5	14.0	8.0	11.0
5				20.5	13.0	16.5	14.0	10.0	11.5
6				20.0	13.0	16.0	12.0	8.5	10.5
7	19.0	11.0	14.5	18.0	12.0	15.0	14.5	7.0	10.5
8	19.5	11.5	15.0	18.5	11.0	14.5	12.5	8.5	10.5
9	21.0	12.0	16.0	20.0	12.5	16.0	13.5	7.5	10.5
10	20.5	12.0	16.0	18.0	13.5	15.5	10.5	8.0	9.0
11	21.0	11.5	16.0	18.5	13.0	15.5	14.5	8.5	11.0
12	21.5	13.0	17.0	19.0	11.5	15.0	16.0	8.5	12.0
13	21.0	13.0	17.0	17.5	11.5	14.5	17.0	10.5	13.5
14	23.0	13.5	18.0	18.0	10.5	14.0	17.0	11.0	14.0
15	20.0	14.0	16.5	18.5	10.5	14.0	17.5	11.5	14.0
16	21.5	11.5	16.0	17.5	11.0	14.0	16.5	12.5	14.0
17	18.5	13.5	16.0	18.5	10.5	14.0	17.0	11.5	14.0
18	19.5	14.5	16.5	18.0	11.5	14.5	14.5	11.5	13.0
19	18.5	13.5	16.0	17.0	10.5	13.5	14.5	11.0	12.5
20	20.5	13.0	17.0	17.5	11.0	13.5	11.0	7.5	9.0
21	23.5	14.0	18.5	16.5	9.5	13.0	8.5	4.0	7.0
22	23.0	14.0	18.5	17.5	9.5	13.0	4.0	2.0	3.0
23	23.0	14.5	18.5	16.5	10.5	13.5	7.5	1.5	4.0
24	22.5	13.5	18.0	16.5	13.0	14.5	9.0	3.0	5.5
25	22.5	13.0	17.5	17.5	12.0	14.5	10.5	4.5	7.0
26	21.0	13.5	17.0	15.0	11.0	13.0	11.5	5.5	8.0
27	22.0	13.5	17.5	15.0	9.5	12.5	11.5	5.5	8.5
28	22.5	13.0	17.5	16.5	9.0	12.5	12.0	6.0	9.0
29	23.5	14.0	18.5	15.5	9.0	12.0	12.0	7.0	9.5
30	22.0	14.5	18.0	17.5	10.0	13.0	11.0	9.0	10.0
31	22.0	16.0	19.0	15.5	10.0	13.0	---	---	---
MONTH	---	---	---	23.0	9.0	14.5	17.5	1.5	10.0

PEND OREILLE RIVER BASIN

12323800 CLARK FORK NEAR GALEN, MT

LOCATION.--Lat 46°12'30", long 112°45'59", in NE$^1/_4$NE$^1/_4$NE$^1/_4$ sec.7, T.5 N., R.9 W., Deer Lodge County, Hydrologic Unit 17010201, on right bank at upstream side of bridge on county road, 2.6 mi downstream from Silver Bow Creek and Warm Springs Creek, 2 mi south of Galen, and at river mile 482.7.

DRAINAGE AREA.--572 mi^2, area at site used prior to Oct. 1, 1994, 793 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,749.24 ft above sea level.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Some regulation by settling ponds on Silver Bow Creek near Warm Springs. Numerous diversions upstream of station for irrigation and municipal use. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	92	91	74	84	99	92	92	133	37	33	29
2	74	91	91	e75	92	99	95	95	126	58	33	31
3	68	92	90	e75	90	99	96	98	117	66	32	34
4	80	88	e88	e78	88	100	101	101	117	66	35	47
5	81	90	e85	81	90	98	99	105	117	58	37	50
6	80	95	e85	e80	91	98	95	94	119	54	35	50
7	88	90	e85	e80	92	101	93	87	116	51	32	49
8	89	87	84	83	93	105	91	82	113	49	33	54
9	93	88	e82	84	93	104	92	86	112	48	33	54
10	96	90	85	e82	94	105	92	88	110	46	32	56
11	96	92	83	86	94	103	83	88	108	43	39	57
12	93	93	87	83	93	99	82	85	95	38	36	58
13	92	92	86	e80	95	98	90	82	95	38	36	54
14	91	91	e80	91	96	99	94	80	86	36	35	52
15	101	90	84	89	98	94	97	77	89	34	34	51
16	104	89	84	91	95	96	99	74	97	34	35	51
17	104	89	88	91	91	95	102	98	85	32	36	51
18	106	90	89	88	91	98	106	116	75	28	35	51
19	103	93	89	91	88	95	111	114	71	26	36	53
20	97	92	89	91	88	92	114	107	70	25	36	56
21	96	89	90	92	92	94	107	105	61	25	36	60
22	100	86	89	93	98	96	107	116	56	26	33	59
23	102	e83	e85	93	97	95	122	125	55	25	32	60
24	91	e80	e77	91	100	91	118	117	51	22	27	63
25	88	88	e75	91	101	88	112	112	46	27	31	65
26	89	95	e75	92	99	85	110	110	45	28	31	65
27	102	92	e77	91	101	89	103	110	39	35	31	65
28	108	87	e80	89	100	93	97	112	37	34	30	65
29	108	89	e82	75	100	91	98	125	34	35	30	65
30	106	96	e85	e70	---	88	96	122	31	34	30	65
31	95	---	77	e70	---	88	---	136	---	33	30	---
TOTAL	2898	2699	2617	2620	2724	2975	2994	3139	2506	1191	1034	1620
MEAN	93.5	90.0	84.4	84.5	93.9	96.0	99.8	101	83.5	38.4	33.4	54.0
MAX	108	96	91	93	101	105	122	136	133	66	39	65
MIN	68	80	75	70	84	85	82	74	31	22	27	29
AC-FT	5750	5350	5190	5200	5400	5900	5940	6230	4970	2360	2050	3210

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2000, BY WATER YEAR (WY)

MEAN	95.6	100	86.6	87.9	97.5	119	144	274	388	154	75.9	72.8
MAX	170	159	132	169	174	167	257	668	974	381	233	184
(WY)	1998	1998	1998	1997	1996	1997	1996	1997	1997	1997	1997	1993
MIN	40.6	50.7	40.7	42.5	43.5	77.2	80.5	68.6	51.1	21.4	10.2	20.3
(WY)	1989	1993	1993	1993	1993	1991	1991	1992	1992	1988	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1988 - 2000	
ANNUAL TOTAL	53624		29017			
ANNUAL MEAN	147		79.3		143	
HIGHEST ANNUAL MEAN					288	1997
LOWEST ANNUAL MEAN					59.6	1992
HIGHEST DAILY MEAN	593	Jun 4	136	May 31	1210	Jun 7 1997
LOWEST DAILY MEAN	55	Jul 31	22	Jul 24	9.7	Aug 11 1988
ANNUAL SEVEN-DAY MINIMUM	60	Jul 28	25	Jul 19	9.8	Aug 15 1988
INSTANTANEOUS PEAK FLOW			a145	May 31	1240	Jun 7 1997
INSTANTANEOUS PEAK STAGE			b2.61	Dec 27	5.07	Jun 7 1997
INSTANTANEOUS LOW FLOW			c21	Jul 24	d9.0	Aug 9 1988
ANNUAL RUNOFF (AC-FT)	106400		57560		103600	
10 PERCENT EXCEEDS	323		106		295	
50 PERCENT EXCEEDS	104		88		97	
90 PERCENT EXCEEDS	77		34		39	

a--Gage height, 2.33 ft.
b--Backwater from ice.
c--Gage height, 1.57 ft.
d--Gage height, 1.39 ft.
e--Estimated.

12323800 CLARK FORK NEAR GALEN, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971-74, 1988 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1991 to September 1998.
REMARKS.--Sampling conducted since 1988 as part of EPA Superfund program. 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, June 23, 1991; minimum, 0.0°C, on many days during winter period.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
16...	1015	89	8.5	483	7.0	4.5	210	60	14
MAR 2000									
06...	1610	100	8.5	489	14.0	6.0	210	61	13
APR									
04...	1515	106	8.5	502	17.0	10.5	220	66	14
MAY									
09...	1250	89	8.4	481	10.0	10.5	200	57	13
22...	1420	122	8.8	356	23.0	15.5	150	44	10
JUN									
04...	1850	120	8.9	352	26.5	19.0	140	41	10
JUL									
21...	1130	25	8.7	598	29.0	18.5	260	74	17
SEP									
01...	1220	32	8.4	534	16.0	14.0	240	70	15

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
16...	7	8	<.1	E.05	3	8	<10	137	<1
MAR 2000									
06...	7	9	<.1	E.06	4	7	E7	141	<1
APR									
04...	7	8	<.1	<.1	4	9	<10	156	<1
MAY									
09...	11	12	<.1	<.1	3	9	19	175	<1
22...	15	18	<.1	E.05	5	14	10	278	<1
JUN									
04...	19	20	<.1	<.1	5	13	18	230	<1
JUL									
21...	23	29	<.1	<.1	6	10	<10	82	<1
SEP									
01...	13	15	<.1	E.06	5	9	E7	79	<1

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
16...	E1	129	163	6	<31	2	.48	81
MAR 2000								
06...	<1	137	177	9	18	4	1.1	76
APR								
04...	1	121	155	6	13	5	1.4	60
MAY								
09...	1	159	220	6	12	4	.96	75
22...	2	81	230	4	16	10	3.3	75
JUN								
04...	1	68	210	4	10	6	1.9	86
JUL								
21...	<1	65	114	4	8	3	.20	78
SEP								
01...	<1	46	98	4	11	5	.43	80

E--Estimated.

PEND OREILLE RIVER BASIN

12324200 CLARK FORK AT DEER LODGE, MT

LOCATION.--Lat 46°23'52", long 112°44'31", in $SW^1/_4SW^1/_4SW^1/_4$ sec.33, T.8 N., R.9 W., Powell County, Hydrologic Unit 17010201, on left bank 35 ft upstream from Milwaukee Avenue Bridge in Deer Lodge, 0.05 mi upstream from Taylor Creek, 0.24 mi downstream from Tin Cup Joe Creek, and at river mile 461.2.

DRAINAGE AREA.--916 mi^2, area at site used prior to Oct. 1, 1994, 1,005 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,502.24 ft above sea level.

REMARKS.--Water-discharge records good. Diversions upstream from station for irrigation of about 31,000 acres. Some regulation by settling ponds on Silver Bow Creek near Warm Springs.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	163	227	238	210	206	231	198	162	183	46	26	46
2	160	225	234	205	227	228	206	140	150	57	25	51
3	157	221	227	203	218	226	207	127	126	82	25	57
4	164	224	213	195	204	228	207	127	116	101	28	72
5	181	221	221	207	213	229	210	141	115	91	29	85
6	181	229	227	202	211	226	205	125	113	75	29	96
7	183	224	228	201	212	229	197	115	114	66	30	95
8	192	220	223	207	216	231	187	107	107	60	29	93
9	202	218	202	207	223	229	183	107	109	55	29	91
10	204	219	226	217	219	229	183	108	125	49	29	95
11	204	223	222	209	214	230	177	110	127	46	33	102
12	203	221	229	e205	216	223	175	104	118	42	35	103
13	197	219	235	e200	216	221	181	98	110	35	35	102
14	199	213	211	227	217	222	190	92	107	33	36	99
15	205	211	231	221	224	213	191	87	100	31	35	98
16	212	212	234	221	221	211	186	76	115	31	34	100
17	213	211	238	221	212	212	190	76	110	31	36	101
18	222	219	238	213	206	208	191	106	94	28	37	102
19	215	210	235	218	207	214	199	105	91	27	37	105
20	208	213	235	211	210	206	204	107	92	28	37	105
21	207	208	240	216	219	204	202	100	84	27	38	114
22	212	203	233	215	227	203	192	100	73	26	38	114
23	213	194	213	214	227	209	217	114	69	26	37	115
24	208	202	218	213	233	204	216	110	62	26	38	118
25	198	227	210	213	230	199	199	108	69	25	37	123
26	196	251	198	212	223	197	194	106	61	24	39	127
27	217	251	203	210	227	199	179	107	50	25	37	130
28	235	236	200	208	233	217	168	98	46	28	40	138
29	240	231	205	186	233	214	173	117	45	26	43	131
30	244	241	218	186	---	204	175	137	44	26	45	131
31	240	---	232	199	---	197	---	169	---	27	45	---
TOTAL	6275	6624	6917	6472	6344	6693	5782	3486	2925	1300	1071	3039
MEAN	202	221	223	209	219	216	193	112	97.5	41.9	34.5	101
MAX	244	251	240	227	233	231	217	169	183	101	45	138
MIN	157	194	198	186	204	197	168	76	44	24	25	46
AC-FT	12450	13140	13720	12840	12580	13280	11470	6910	5800	2580	2120	6030

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 2000, BY WATER YEAR (WY)

MEAN	250	259	230	229	255	273	290	414	523	234	111	182
MAX	421	384	353	342	481	387	422	971	1450	593	337	315
(WY)	1983	1981	1981	1983	1982	1979	1982	1981	1997	1982	1997	1993
MIN	115	156	122	140	137	185	161	80.2	57.8	29.9	27.8	57.8
(WY)	1989	1989	1993	1992	1989	1991	1992	1992	1992	1985	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1979 - 2000	
ANNUAL TOTAL	88446		56928			
ANNUAL MEAN	242		156		270	
HIGHEST ANNUAL MEAN					465	1997
LOWEST ANNUAL MEAN					130	1992
HIGHEST DAILY MEAN	796	Jun 4	251	Nov 26	2390	May 23 1981
LOWEST DAILY MEAN	52	Aug 1	24	Jul 26	22	Aug 18 1988
ANNUAL SEVEN-DAY MINIMUM	60	Jul 28	26	Jul 21	23	Aug 9 1991
INSTANTANEOUS PEAK FLOW			a263	Nov 26	d2500	May 23 1981
INSTANTANEOUS PEAK STAGE			b2.97	Jan 12	b5.92	Nov 1 1991
INSTANTANEOUS LOW FLOW			c24	Jul 26	f21	Aug 6 1991
ANNUAL RUNOFF (AC-FT)	175400		112900		195900	
10 PERCENT EXCEEDS	355		228		426	
50 PERCENT EXCEEDS	227		196		237	
90 PERCENT EXCEEDS	109		37		96	

a--Gage height, 2.95 ft.
b--Backwater from ice.
c--Gage height, 2.09 ft.
d--Gage height, 5.35 ft.
e--Estimated.
f--Gage height, 2.19 ft.

12324200 CLARK FORK AT DEER LODGE, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963, 1969-71, 1979-83, 1985 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1978 to September 1983, October 1991 to September 1998.
SUSPENDED-SEDIMENT DISCHARGE: March 1985 through August 1986, April 1987 to current year.

REMARKS.--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, 24.5°C, July 26, 1998; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATION: Maximum daily mean, 835 mg/L, Feb. 8, 1996; minimum daily mean, 2 mg/L, July 14, 15, 1991.
SEDIMENT LOAD: Maximum daily, 2,840 tons, Feb. 24, 1986; minimum daily, 0.19 ton, Aug. 10, 1988.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 48 mg/L, July 1; minimum daily mean, 4 mg/L, May 8, 15.
SEDIMENT LOAD: Maximum daily, 22 tons, Feb. 21; minimum daily, .94 ton, May 15.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
16...	1200	209	8.4	520	7.0	4.0	230	66	15
MAR 2000									
06...	1715	225	8.4	506	13.5	8.0	230	66	15
APR									
04...	1610	209	8.4	535	18.0	12.0	240	72	16
MAY									
09...	1350	108	8.5	523	10.0	11.5	220	64	15
22...	1530	97	8.7	451	24.0	17.5	190	57	12
JUN									
05...	0720	116	8.1	463	15.5	14.0	200	58	13
JUL									
21...	1225	29	8.6	512	31.0	19.5	220	65	14
SEP									
05...	1115	86	8.3	564	18.0	13.5	250	75	16

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
16...	8	9	<.1	E.1	4	19	<10	232	<1
MAR 2000									
06...	8	10	<.1	E.1	5	17	<10	269	<1
APR									
04...	9	10	<.1	E.1	6	20	<10	262	<1
MAY									
09...	11	12	<.1	<.1	7	16	16	146	<1
22...	14	16	<.1	<.1	8	18	10	134	<1
JUN									
05...	17	19	<.1	.1	7	29	E7	335	<1
JUL									
21...	12	15	<.1	<.1	6	13	<10	98	<1
SEP									
05...	12	15	<.1	.2	5	38	<10	494	<1

E--Estimated.

PEND OREILLE RIVER BASIN

12324200 CLARK FORK AT DEER LODGE, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
16...	2	27	70	7	E15	10	5.6	80
MAR 2000								
06...	2	30	62	10	23	13	7.9	70
APR								
04...	2	31	60	7	20	13	7.3	72
MAY								
09...	2	113	119	10	21	4	1.2	88
22...	1	42	70	5	15	7	1.8	84
JUN								
05...	3	64	157	12	28	15	4.7	92
JUL								
21...	1	47	85	4	11	21	1.6	69
SEP								
05...	5	29	185	5	45	31	7.2	84

E--Estimated.

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11	4.8	10	6.1	11	7.1	10	5.7	17	9.5	16	10
2	10	4.3	9	5.5	11	6.9	9	5.0	18	11	14	8.6
3	10	4.2	9	5.4	11	6.7	8	4.4	19	11	13	7.9
4	9	4.0	9	5.4	11	6.3	8	4.2	18	9.9	13	8.0
5	8	3.9	9	5.4	11	6.6	11	6.1	16	9.2	13	8.0
6	9	4.4	10	6.2	11	6.7	16	8.7	17	9.7	13	7.9
7	13	6.4	10	6.0	11	6.8	20	11	20	11	13	8.0
8	22	11	10	5.9	10	6.0	22	12	22	13	13	8.1
9	20	11	11	6.5	8	4.4	20	11	22	13	14	8.7
10	19	10	12	7.1	6	3.7	18	11	22	13	14	8.7
11	18	9.9	12	7.2	5	3.0	16	9.0	22	13	14	8.7
12	17	9.3	13	7.8	5	3.1	16	8.9	23	13	13	7.8
13	16	8.5	14	8.3	5	3.2	18	9.7	25	15	13	7.8
14	15	8.1	13	7.5	6	3.4	20	12	25	15	20	12
15	14	7.7	12	6.8	9	5.6	23	14	23	14	16	9.2
16	13	7.4	12	6.9	10	6.3	24	14	20	12	13	7.4
17	12	6.9	10	5.7	11	7.1	24	14	17	9.7	12	6.9
18	11	6.6	10	5.9	12	7.7	22	13	22	12	11	6.2
19	11	6.4	9	5.1	13	8.2	24	14	28	16	11	6.4
20	10	5.6	8	4.6	13	8.2	20	11	34	19	12	6.7
21	10	5.6	8	4.5	13	8.4	18	10	37	22	14	7.7
22	10	5.7	8	4.4	14	8.8	18	10	34	21	20	11
23	10	5.8	9	4.7	14	8.1	16	9.2	24	15	18	10
24	10	5.6	12	6.5	14	8.2	16	9.2	16	10	16	8.8
25	10	5.3	14	8.6	14	7.9	17	9.8	12	7.5	16	8.6
26	10	5.3	14	9.5	15	8.0	18	10	16	9.6	14	7.4
27	16	9.4	13	8.8	16	8.8	18	10	20	12	13	7.0
28	21	13	12	7.6	15	8.1	19	11	23	14	18	11
29	20	13	12	7.5	14	7.7	19	9.5	22	14	16	9.2
30	17	11	12	7.8	12	7.1	19	9.5	---	---	19	10
31	14	9.1	---	---	10	6.3	17	9.1	---	---	15	8.0
TOTAL	---	229.2	---	195.2	---	204.4	---	306.0	---	374.1	---	261.7

PEND OREILLE RIVER BASIN

12324200 CLARK FORK AT DEER LODGE, MT--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	15	8.0	11	4.8	37	18	48	6.0	24	1.7	18	2.2
2	16	8.9	8	3.0	23	9.3	26	4.0	25	1.7	20	2.8
3	14	7.8	8	2.7	14	4.8	23	5.1	27	1.8	22	3.4
4	13	7.3	7	2.4	11	3.4	27	7.4	30	2.3	25	4.9
5	20	11	6	2.3	11	3.4	27	6.6	31	2.4	27	6.2
6	30	17	5	1.7	14	4.3	25	5.1	32	2.5	27	7.0
7	18	9.6	5	1.6	18	5.5	24	4.3	32	2.6	25	6.4
8	12	6.1	4	1.2	14	4.0	24	3.9	33	2.6	25	6.3
9	19	9.4	5	1.4	12	3.5	24	3.6	33	2.6	25	6.1
10	13	6.4	8	2.3	10	3.4	24	3.2	33	2.6	26	6.7
11	9	4.3	6	1.8	10	3.4	24	3.0	31	2.8	26	7.2
12	22	10	6	1.7	9	2.9	24	2.7	27	2.6	23	6.4
13	24	12	7	1.9	8	2.4	26	2.5	24	2.3	16	4.4
14	15	7.7	6	1.5	12	3.5	26	2.3	23	2.2	12	3.2
15	13	6.7	4	.94	12	3.2	27	2.3	24	2.3	12	3.2
16	12	6.0	7	1.4	13	4.0	27	2.3	25	2.3	14	3.8
17	15	7.7	5	1.0	9	2.7	35	2.9	26	2.5	17	4.6
18	16	8.3	8	2.3	8	2.0	42	3.2	26	2.6	22	6.1
19	14	7.5	6	1.7	10	2.5	32	2.3	25	2.5	24	6.8
20	13	7.2	7	2.0	12	3.0	25	1.9	25	2.5	20	5.7
21	22	12	8	2.2	12	2.7	21	1.5	26	2.7	16	4.9
22	11	5.7	7	1.9	16	3.2	17	1.2	25	2.6	15	4.6
23	23	13	13	4.0	28	5.2	16	1.1	26	2.6	15	4.7
24	14	8.2	22	6.5	29	4.9	21	1.5	26	2.7	15	4.8
25	8	4.3	10	2.9	25	4.7	25	1.7	26	2.6	16	5.3
26	8	4.2	19	5.4	22	3.6	27	1.7	26	2.7	16	5.5
27	10	4.8	10	2.9	22	3.0	28	1.9	23	2.3	16	5.6
28	14	6.4	10	2.6	25	3.1	28	2.1	21	2.3	16	6.0
29	10	4.7	12	3.8	44	5.3	28	2.0	19	2.2	16	5.7
30	8	3.8	15	5.5	46	5.5	27	1.9	19	2.3	16	5.7
31	---	---	39	18	---	---	25	1.8	19	2.3	---	---
TOTAL	---	236.0	---	95.34	---	130.4	---	93.0	---	74.7	---	156.2

TOTAL LOAD FOR YEAR: 2356.24 tons.

PEND OREILLE RIVER BASIN

12324590 LITTLE BLACKFOOT RIVER NEAR GARRISON, MT

LOCATION.--Lat 46°31'11", long 112°47'33", in $NE^1/_4NW^1/_4SE^1/_4$ sec.24, T.9 N., R.10 W., Powell County, Hydrologic Unit 17010201, on right bank 20 ft upstream from bridge on frontage road, 0.7 mi southeast of Garrison, and at river mile 0.5.
DRAINAGE AREA.--407 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 4,343.97 ft above sea level. Prior to Oct. 1, 1992, at site 3.5 mi upstream at different datum.
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. A few minor irrigation holding reservoirs in upper reaches of drainage. Diversions for irrigation of about 11,000 acres upstream from station. U. S. Geological Survey satellite telementer at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	61	63	e53	e50	74	84	109	154	33	19	11
2	47	59	62	e50	e55	78	92	91	127	39	20	11
3	47	59	59	e47	e50	81	82	92	111	43	20	12
4	47	63	e55	e50	e50	92	88	85	106	50	19	14
5	47	61	e50	e50	e55	99	130	95	100	52	18	15
6	49	62	e52	e50	e60	95	116	110	88	51	17	16
7	52	61	54	e52	66	93	99	110	81	48	16	16
8	53	60	e52	e55	68	98	92	111	76	46	16	16
9	48	59	e50	e52	77	80	95	111	69	42	16	17
10	48	58	e52	e48	75	75	104	124	71	42	15	17
11	49	58	54	e50	e65	75	106	119	74	42	14	21
12	48	58	55	e48	e55	71	107	116	74	41	14	21
13	49	56	e53	e50	e58	69	123	110	79	42	12	20
14	53	56	e53	e55	62	69	127	101	74	50	11	20
15	59	56	55	e55	62	69	129	100	79	45	11	22
16	58	55	55	e60	61	67	121	95	82	44	12	22
17	58	58	56	e55	58	68	127	91	76	46	11	21
18	55	60	56	e50	e53	66	134	85	62	45	10	19
19	53	58	57	e50	e55	68	135	85	61	44	12	20
20	54	58	56	e50	e55	68	143	89	61	44	13	23
21	53	58	57	e55	e60	65	146	90	62	38	12	26
22	52	56	56	e55	67	67	151	91	60	33	12	29
23	56	e50	e50	e53	71	76	158	81	55	34	14	32
24	55	53	e45	e53	73	70	155	79	43	34	13	34
25	55	61	e45	e53	68	71	147	83	44	30	12	28
26	56	82	e45	e50	61	87	141	84	44	26	12	27
27	62	74	e46	e50	66	102	133	83	44	26	13	27
28	64	64	e48	e48	69	129	127	87	41	24	13	26
29	66	60	e50	e45	71	98	134	92	31	19	14	27
30	63	62	e52	e45	---	86	123	101	29	21	13	29
31	61	---	e55	e46	---	81	---	148	---	20	11	---
TOTAL	1661	1796	1648	1583	1796	2487	3649	3048	2158	1194	435	639
MEAN	53.6	59.9	53.2	51.1	61.9	80.2	122	98.3	71.9	38.5	14.0	21.3
MAX	66	82	63	60	77	129	158	148	154	52	20	34
MIN	44	50	45	45	50	65	82	79	29	19	10	11
AC-FT	3290	3560	3270	3140	3560	4930	7240	6050	4280	2370	863	1270

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2000, BY WATER YEAR (WY)

MEAN	73.5	72.2	65.1	61.9	86.1	120	228	504	393	137	62.9	58.9
MAX	129	122	199	135	262	271	486	1460	1803	410	191	184
(WY)	1976	1976	1976	1976	1996	1986	1976	1981	1975	1975	1975	1993
MIN	35.4	39.8	32.9	36.3	36.4	55.4	88.8	76.9	60.1	23.6	11.9	19.9
(WY)	1974	1988	1993	1993	1989	1975	1973	1992	1992	1973	1977	1977

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1973 - 2000	
ANNUAL TOTAL	46195		22094			
ANNUAL MEAN	127		60.4		155	
HIGHEST ANNUAL MEAN					322	1975
LOWEST ANNUAL MEAN					58.4	1973
HIGHEST DAILY MEAN	844	Jun 4	158	Apr 23	6280	May 22 1981
LOWEST DAILY MEAN	36	Sep 22	10	Aug 18	6.5	Aug 23 1977
ANNUAL SEVEN-DAY MINIMUM	38	Sep 19	11	Aug 13	6.7	Aug 22 1977
INSTANTANEOUS PEAK FLOW			a177	May 31	8650	May 21 1981
INSTANTANEOUS PEAK STAGE			b2.74	Dec 25	d8.79	May 21 1981
INSTANTANEOUS LOW FLOW			c10	Aug 17	6.0	Aug 24 1977
ANNUAL RUNOFF (AC-FT)	91630		43820		112600	
10 PERCENT EXCEEDS	281		106		378	
50 PERCENT EXCEEDS	65		55		76	
90 PERCENT EXCEEDS	45		18		39	

a--Gage height, 1.95 ft.
b--Backwater from ice.
c--Gage height, 0.88 ft.
d--Site and datum then in use.
e--Estimated.

12324590 LITTLE BLACKFOOT RIVER NEAR GARRISON, MT--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963, 1985 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1999 to September 2000.
INSTRUMENTATION.--Temperature recorder installed Aug. 19, 1999.
REMARKS.--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 29. 30, Aug. 1, 2, 2000; minimum, 0.0°C on many days during winter period.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.5°C, July 29. 30, Aug. 1, 2, 2000; minimum, 0.0°C on many days November to March.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV 1999											
16...	1245	55	8.4	281	15.0	4.0	130	38	8.8	2.0	.2
APR 2000											
04...	1715	88	8.5	293	16.0	11.0	130	37	8.3	--	--
MAY											
24...	0835	78	8.1	281	15.0	10.0	130	39	8.8	--	--
JUN											
06...	0800	88	8.2	286	15.0	11.5	130	38	8.8	--	--
JUL											
27...	1145	27	8.4	309	30.0	18.5	150	44	10	2.5	.3
SEP											
05...	1230	15	8.5	338	19.5	15.5	160	47	10	--	--

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
NOV 1999											
16...	6.5	133	1.9	.2	21	15	173	.24	26	<.001	.005
APR 2000											
04...	--	--	--	--	--	--	--	--	--	--	--
MAY											
24...	--	--	--	--	--	--	--	--	--	<.001	<.005
JUN											
06...	--	--	--	--	--	--	--	--	--	.001	--
JUL											
27...	7.3	149	2.3	.2	23	14	193	.26	14	<.001	<.005
SEP											
05...	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
NOV 1999											
16...	E.07	.017	.021	4	4	<.1	<.1	<1	E.8	E1	<10
APR 2000											
04...	--	--	--	5	5	<.1	<.1	--	E1	2	E7
MAY											
24...	.3	.025	.038	5	5	<.1	<.1	--	E1	2	13
JUN											
06...	.3	.033	.067	6	5	<.1	<.1	--	E1	3	18
JUL											
27...	.2	.016	.031	5	6	<.1	<.1	<1	<1	1	E9
SEP											
05...	--	--	--	5	5	<.1	<.1	--	E1	1	E6

E--Estimated.

12324590 LITTLE BLACKFOOT RIVER NEAR GARRISON, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999											
16...	36	<1	<1	4	6	<2	<1	<31	2	.30	88
APR 2000											
04...	158	<1	<1	7	18	--	4	2	8	1.9	84
MAY											
24...	126	<1	<1	17	27	--	2	5	7	1.5	84
JUN											
06...	124	<1	<1	15	25	--	<1	<1	6	1.4	84
JUL											
27...	57	<1	<1	13	22	<2	<1	<1	3	.22	88
SEP											
05...	63	<1	<1	11	21	--	<1	1	16	.65	32

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.0	6.0	8.5	5.5	2.5	4.0	4.0	2.5	3.5	.0	.0	.0
2	8.5	4.0	6.0	5.0	1.5	3.0	2.5	1.5	2.0	.0	.0	.0
3	10.5	4.0	7.0	6.0	2.0	3.5	1.5	.0	.5	.0	.0	.0
4	12.0	4.5	8.0	5.0	3.0	4.5	.0	.0	.0	.0	.0	.0
5	12.0	5.5	8.5	4.5	2.0	3.0	.0	.0	.0	.0	.0	.0
6	10.5	7.0	8.5	7.5	4.0	5.5	1.5	.0	.5	.0	.0	.0
7	11.0	8.0	9.0	6.0	4.0	5.0	1.5	.5	1.0	.0	.0	.0
8	11.0	8.0	9.5	5.5	3.5	4.5	1.0	.0	.0	.0	.0	.0
9	12.0	8.0	9.5	7.0	3.5	5.0	.0	.0	.0	.0	.0	.0
10	11.0	5.5	8.0	6.5	4.0	5.0	1.0	.0	.5	.0	.0	.0
11	11.0	6.0	8.5	7.5	4.5	6.0	1.5	.0	.5	.0	.0	.0
12	11.0	8.0	9.0	9.0	5.0	6.5	2.5	1.0	1.5	.0	.0	.0
13	11.0	6.0	8.5	9.0	6.0	7.5	2.5	.0	1.0	.0	.0	.0
14	11.5	7.0	9.5	7.0	3.5	5.5	.5	.0	.0	.0	.0	.0
15	7.5	5.5	6.5	5.0	2.0	3.5	2.5	.0	1.5	.0	.0	.0
16	7.5	3.5	5.5	5.0	2.0	3.5	3.0	1.5	2.5	.0	.0	.0
17	6.0	4.0	5.0	5.0	3.0	4.0	3.5	2.0	2.5	.0	.0	.0
18	9.5	5.0	6.5	5.0	3.0	4.0	3.0	1.5	2.0	.0	.0	.0
19	8.5	3.0	5.5	4.0	1.5	3.0	1.5	.0	.0	.0	.0	.0
20	9.0	3.0	6.0	4.5	2.5	3.5	1.5	.0	.5	.0	.0	.0
21	9.5	4.5	7.0	3.5	2.0	2.5	2.5	1.0	1.5	.0	.0	.0
22	9.5	4.0	6.5	2.5	1.0	1.5	1.5	.0	.5	.0	.0	.0
23	8.0	3.5	6.0	1.5	.0	.5	.0	.0	.0	.0	.0	.0
24	7.5	4.0	6.0	3.0	.5	1.5	.0	.0	.0	.0	.0	.0
25	9.0	4.0	6.0	4.0	2.5	3.5	.0	.0	.0	.0	.0	.0
26	9.0	5.5	7.0	5.0	3.5	4.0	.0	.0	.0	.0	.0	.0
27	9.5	6.0	7.5	3.5	1.5	2.5	.0	.0	.0	.5	.0	.0
28	8.5	6.5	7.5	3.0	.5	1.5	.0	.0	.0	.5	.0	.0
29	7.0	5.0	6.0	2.5	.5	1.5	.0	.0	.0	.5	.0	.0
30	9.0	5.0	6.5	5.5	2.0	3.5	.0	.0	.0	.0	.0	.0
31	7.0	4.0	6.0	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	12.0	3.0	7.5	9.0	0.0	4.0	4.0	0.0	0.5	0.5	0.0	0.0

12324590 LITTLE BLACKFOOT RIVER NEAR GARRISON, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	6.0	3.0	4.0	6.5	3.5	5.0	16.5	7.5	12.0
2	.0	.0	.0	6.0	1.0	3.5	7.5	2.5	4.5	13.5	9.5	11.5
3	2.0	.0	.5	7.5	2.5	4.5	10.0	1.5	5.5	12.5	7.0	10.0
4	.0	.0	.0	7.0	1.5	4.0	11.5	4.5	7.5	12.0	8.5	10.5
5	1.5	.0	.5	5.5	2.5	4.0	8.5	4.0	6.5	12.0	8.0	9.5
6	3.5	1.0	2.0	7.0	1.5	3.5	6.5	4.0	5.0	12.5	7.0	10.0
7	4.0	1.0	2.0	7.0	2.0	4.5	9.0	1.5	5.0	14.0	7.0	10.0
8	4.0	1.0	2.5	4.0	1.5	2.5	10.5	3.0	6.5	13.0	6.5	10.0
9	4.0	1.5	3.0	6.0	.0	3.0	12.0	4.5	8.0	11.0	7.5	9.5
10	3.0	.0	1.0	6.5	1.5	4.0	11.5	5.0	8.5	12.0	6.5	9.0
11	.0	.0	.0	4.5	2.0	3.0	11.5	4.5	8.0	10.0	5.5	7.5
12	.0	.0	.0	6.0	.5	3.0	11.5	6.0	8.5	11.0	5.5	8.0
13	.5	.0	.0	5.5	2.0	3.5	9.0	3.0	7.0	14.0	6.0	10.0
14	2.5	.0	1.0	6.5	2.0	3.5	6.5	1.0	4.0	13.0	8.5	10.5
15	3.0	.5	1.5	6.0	2.0	3.5	9.0	4.0	6.0	14.5	8.0	11.5
16	4.0	1.0	2.0	4.0	1.0	2.5	9.5	4.5	7.0	13.5	8.5	11.0
17	1.5	.0	.0	4.5	1.5	2.5	12.0	5.0	8.5	14.5	9.5	12.0
18	.5	.0	.0	6.0	2.0	3.5	13.5	6.5	10.0	17.0	9.5	13.0
19	.0	.0	.0	6.0	2.0	4.0	14.5	7.0	10.5	13.0	10.0	11.5
20	.0	.0	.0	7.5	1.0	4.0	13.0	6.5	10.0	16.0	8.5	12.0
21	1.5	.0	.5	6.5	.5	3.5	15.5	7.5	11.5	14.0	10.0	12.0
22	5.5	1.0	2.5	9.0	1.5	5.0	13.0	9.0	11.0	17.0	9.5	13.0
23	4.0	2.0	3.0	6.0	1.5	4.0	11.5	6.5	9.0	16.5	10.0	12.5
24	3.5	1.0	2.5	8.0	.5	4.0	10.0	5.0	7.5	16.5	9.5	13.0
25	4.0	.0	1.5	7.5	1.5	4.5	7.5	4.0	6.0	18.0	9.5	13.5
26	3.5	.0	1.5	9.5	3.5	6.0	12.5	4.5	8.0	14.5	10.0	12.0
27	4.0	1.5	3.0	10.5	2.5	6.5	15.0	6.5	10.5	15.5	8.5	12.0
28	5.0	2.5	3.5	7.5	3.0	5.5	12.5	7.5	10.0	17.0	10.5	13.0
29	6.0	1.5	3.5	6.5	1.5	4.0	10.0	5.5	7.5	15.0	10.5	12.5
30	---	---	---	8.5	2.0	4.5	14.0	4.0	9.0	16.5	9.5	12.0
31	---	---	---	9.5	2.5	5.5	---	---	---	12.0	8.5	10.0
MONTH	6.0	0.0	1.5	10.5	0.0	4.0	15.5	1.0	7.5	18.0	5.5	11.0
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.5	8.0	11.5	20.0	13.5	16.5	25.5	14.5	19.5	17.0	12.5	14.5
2	18.0	9.0	13.5	22.0	12.5	17.0	25.5	13.5	19.0	16.0	11.5	13.5
3	18.0	11.0	14.5	16.0	12.5	14.0	21.0	13.5	17.5	15.5	8.0	12.0
4	19.0	10.5	14.5	18.5	11.0	14.5	18.0	14.5	16.0	16.5	10.5	13.0
5	16.5	11.5	14.0	17.0	11.0	14.0	23.0	12.5	17.5	18.0	11.5	14.0
6	20.5	11.0	15.5	18.0	12.0	14.5	24.0	12.5	18.0	14.5	10.0	12.0
7	20.5	11.5	16.0	19.5	10.5	14.5	23.5	12.5	17.5	18.5	8.0	13.0
8	20.0	12.5	16.0	22.0	12.0	16.5	23.0	12.0	17.5	15.0	9.5	12.0
9	16.0	11.0	13.5	20.5	12.5	16.5	20.5	12.5	17.0	14.5	8.5	11.0
10	15.5	9.0	12.0	22.5	12.5	17.0	18.0	13.5	15.5	12.5	10.0	11.0
11	15.5	9.5	12.5	22.0	12.0	16.5	19.5	13.5	16.0	15.0	10.5	12.0
12	13.5	11.0	12.0	21.0	12.5	16.5	21.5	11.0	16.5	19.0	9.0	13.5
13	17.0	9.5	12.5	22.5	13.0	17.5	20.5	12.0	16.5	20.0	10.5	15.0
14	13.5	11.0	12.0	21.5	14.0	17.5	21.0	11.0	16.0	19.5	10.5	15.0
15	15.5	11.0	13.5	20.0	13.5	16.5	20.5	11.0	15.5	20.5	11.0	15.5
16	16.0	10.0	12.5	23.0	11.5	17.0	21.5	10.5	16.0	18.5	12.5	15.0
17	20.0	10.0	14.5	22.0	13.5	17.0	21.0	11.0	15.5	19.5	11.5	15.0
18	19.0	11.0	15.0	21.5	14.0	17.5	19.0	11.5	15.0	15.0	11.5	13.5
19	17.5	12.0	14.0	21.0	14.0	17.5	19.5	11.0	15.0	16.5	11.0	13.0
20	18.0	10.5	14.0	22.0	13.0	17.5	20.5	11.5	15.5	13.0	8.0	10.5
21	19.5	10.5	15.0	24.0	13.5	18.5	21.0	10.0	15.0	11.0	6.5	9.5
22	19.0	12.0	15.5	24.0	13.5	18.0	20.0	10.0	15.0	9.5	4.5	6.5
23	20.0	11.0	15.5	23.5	14.5	18.5	20.0	10.5	15.0	12.0	3.5	7.0
24	20.0	11.0	15.0	23.0	12.5	17.5	18.0	14.0	15.5	13.5	4.5	8.5
25	21.5	12.0	16.0	24.0	13.0	18.5	22.0	11.5	16.5	14.0	5.5	9.5
26	20.5	11.0	15.5	23.5	13.5	18.0	19.5	11.5	15.5	14.5	6.0	10.0
27	22.0	11.0	16.0	24.5	13.5	18.5	19.0	10.5	14.5	14.5	6.0	10.0
28	22.0	11.5	16.5	23.5	13.0	18.5	20.5	10.0	15.0	14.5	6.5	10.0
29	22.0	12.0	16.5	25.5	13.5	19.0	19.0	9.5	14.0	13.5	7.0	10.0
30	22.5	11.5	16.5	25.5	13.5	19.0	20.0	11.5	15.0	12.0	10.0	11.0
31	---	---	---	25.0	16.0	20.0	18.5	10.0	14.5	---	---	---
MONTH	22.5	8.0	14.5	25.5	10.5	17.0	25.5	9.5	16.0	20.5	3.5	12.0

PEND OREILLE RIVER BASIN

12324680 CLARK FORK AT GOLDCREEK, MT

LOCATION.--Lat 46°35'26", long 112°55'40", in $SE^1/_4NW^1/_4SW^1/_4$ sec.25, T.10 N., R.11 W., Powell County, Hydrologic Unit 17010201, on right bank at county road bridge, 0.4 mi north of the town of Goldcreek, 1.1 mi downstream from Gold Creek, and at river mile 434.7.
DRAINAGE AREA.--1,704 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 4,172.80 ft above sea level. June 13 to Oct. 21, 1982, nonrecording gage at site 350 ft downstream at same datum.
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Some regulation by settling ponds on Silver Bow Creek near Warm Springs. Diversion for irrigation of about 40,100 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	259	369	377	e320	320	380	319	327	395	116	66	66
2	262	363	366	e300	443	376	337	276	325	128	64	66
3	267	358	357	e290	396	379	331	267	280	137	68	77
4	270	365	333	e280	348	397	335	250	259	178	68	93
5	291	361	328	e290	341	408	376	267	259	177	69	104
6	299	367	363	e300	333	391	372	284	241	163	73	128
7	305	366	354	e300	333	382	346	268	229	143	73	120
8	314	363	354	e310	343	387	322	264	222	134	71	109
9	316	358	e330	e310	367	365	316	260	213	130	68	113
10	331	355	350	e320	359	357	323	279	222	125	70	111
11	336	355	351	e320	327	358	324	269	241	121	68	126
12	339	354	352	e310	e330	346	320	261	240	116	65	134
13	332	352	355	e300	335	341	339	255	244	112	66	139
14	331	347	327	e300	334	337	362	243	236	110	62	134
15	338	343	335	e340	341	329	367	235	239	94	64	131
16	348	344	356	e330	334	321	359	221	243	90	67	130
17	e350	346	354	e330	321	325	363	209	245	92	68	132
18	355	357	355	e320	313	318	374	203	212	89	70	134
19	348	348	354	e310	311	326	383	213	199	93	71	138
20	345	351	349	e320	321	319	399	221	189	95	71	150
21	340	342	356	e330	335	312	408	219	176	89	75	167
22	339	335	352	335	365	313	408	235	158	78	72	177
23	346	321	335	332	384	326	427	225	152	80	68	181
24	350	321	326	329	381	318	438	225	139	73	69	190
25	344	359	275	338	360	312	413	221	134	70	68	190
26	340	404	e250	327	343	323	396	214	136	64	59	195
27	362	407	e240	324	352	335	367	217	127	66	60	200
28	380	377	e240	321	397	378	350	219	123	67	61	206
29	393	363	e250	313	385	358	345	227	113	63	66	205
30	383	370	e260	285	---	332	341	270	107	62	65	206
31	384	---	e280	281	---	319	---	352	---	65	66	---
TOTAL	10297	10721	10164	9715	10152	10768	10860	7696	6298	3220	2091	4252
MEAN	332	357	328	313	350	347	362	248	210	104	67.5	142
MAX	393	407	377	340	443	408	438	352	395	178	75	206
MIN	259	321	240	280	311	312	316	203	107	62	59	66
AC-FT	20420	21270	20160	19270	20140	21360	21540	15270	12490	6390	4150	8430

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2000, BY WATER YEAR (WY)

MEAN	411	414	359	355	434	500	618	1087	1158	512	241	316
MAX	699	651	622	596	860	721	918	2914	3002	1196	646	707
(WY)	1983	1981	1981	1984	1996	1978	1996	1981	1980	1982	1993	1993
MIN	198	244	193	199	208	306	360	198	138	85.7	67.5	99.8
(WY)	1989	1989	1993	1988	1989	1988	1992	1992	1992	1985	2000	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1978 - 2000	
ANNUAL TOTAL	167900		96234			
ANNUAL MEAN	460		263		533	
HIGHEST ANNUAL MEAN					860	1981
LOWEST ANNUAL MEAN					243	1992
HIGHEST DAILY MEAN	2280	Jun 4	443	Feb 2	9100	May 23 1981
LOWEST DAILY MEAN	164	Aug 1	59	Aug 26	55	Sep 4 1988
ANNUAL SEVEN-DAY MINIMUM	173	Jul 29	63	Aug 26	58	Sep 3 1988
INSTANTANEOUS PEAK FLOW			543	Feb 2	b12000	May 22 1981
INSTANTANEOUS PEAK STAGE			4.90	Feb 2	c12.50	Jan 2 1997
INSTANTANEOUS LOW FLOW			a57	Aug 26	d54	Sep 3 1988
ANNUAL RUNOFF (AC-FT)	333000		190900		386500	
10 PERCENT EXCEEDS	766		369		973	
50 PERCENT EXCEEDS	358		314		400	
90 PERCENT EXCEEDS	222		72		190	

a--Gage height, 3.66 ft.
b--From rating curve extended above 6,500 ft^3/s on basis of contracted-opening measurement of peak flow; gage height, 11.17 ft, from floodmark.
c--Backwater from ice.
d--Gage height, 3.73 ft.
e--Estimated.

12324680 CLARK FORK AT GOLDCREEK, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1993 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1991 to September 1998.
REMARKS.--Unpublished records of instantaneous water temperature and specific conductance for many days are available in files of the District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.5°C, July 26, 1995; minimum, 0.0°C on many days during winter period.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
17...	0920	345	8.3	467	6.0	3.0	200	59	13
MAR 2000									
07...	0810	385	8.2	446	4.5	4.5	200	59	13
APR									
05...	0810	395	8.3	468	8.5	6.5	200	59	13
MAY									
09...	1520	260	8.6	402	12.0	12.0	170	49	11
22...	1655	248	8.8	393	26.0	17.5	170	50	11
JUN									
05...	0845	260	8.3	408	17.5	14.5	180	51	12
JUL									
21...	1330	93	8.7	431	30.0	21.5	190	56	13
SEP									
05...	1320	102	8.6	510	20.0	17.0	230	67	15

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
17...	7	8	<.1	.1	3	21	<10	280	<1
MAR 2000									
07...	7	10	<.1	.2	5	25	12	440	<1
APR									
05...	8	11	<.1	.2	4	33	E8	420	<1
MAY									
09...	8	9	<.1	<.1	4	9	<10	129	<1
22...	9	11	<.1	<.1	5	11	<10	166	<1
JUN									
05...	11	11	<.1	E.05	5	16	<10	250	<1
JUL									
21...	10	12	<.1	<.1	4	9	<10	113	<1
SEP									
05...	12	12	<.1	<.1	4	11	<10	150	<1

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
17...	3	14	80	5	E27	15	14	84
MAR 2000								
07...	3	25	81	9	32	23	24	75
APR								
05...	5	25	66	5	38	41	44	75
MAY								
09...	<1	20	41	3	9	6	4.2	85
22...	1	15	56	4	14	9	6.0	91
JUN								
05...	2	20	87	5	15	13	9.1	93
JUL								
21...	<1	15	66	3	8	7	1.8	86
SEP								
05...	1	7	60	2	12	12	3.3	78

E--Estimated.

PEND OREILLE RIVER BASIN

12325500 FLINT CREEK NEAR SOUTHERN CROSS, MT

LOCATION.--Lat 46°13'59", long 113°17'56", in $SE^1/_4NW^1/_4$ sec.36, T.6 N., R.14 W., Granite County, Hydrologic Unit 17010202, on right wing wall of weir, 0.5 mi downstream from power plant, 2.0 mi downstream from Georgetown Dam, 3.5 mi northwest of Southern Cross, 6.8 mi south of Philipsburg, and at river mile 36.8.

DRAINAGE AREA.--52.6 mi2.

PERIOD OF RECORD.--October 1940 to September 1998, August 2000 to November 2000. Seasonal records beginning water year 2000.

REVISED RECORDS.--WSP 1216: 1942(M). WSP 1246: Drainage area.

GAGE.--Water-stage recorder and sharp-crested, contracted, rectangular weir. Elevation of gage is 5,630 ft above sea level, from topographic map. Prior to June 3, 1982, nonrecording gage at same site and datum. Prior to Nov. 27, 1973, gage at same site and datum 0.20 ft higher.

REMARKS.--Records good. Flow regulated by Georgetown Lake (station number 12325000). Flow may be augmented by interbasin diversion from Silver Lake to Georgetown Lake or reduced by pumping from Georgetown Lake to Silver Lake. Several observations of water temperature and specific conductance were made during the water year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1								e31	13	13	10	
2								31	13	13	10	
3								32	13	13	10	
4								32	13	13	10	
5								38	13	13	10	
6								48	13	13	10	
7								49	13	13	10	
8								25	13	13	10	
9								47	13	13	7.4	
10								47	13	13	3.1	
11								39	13	13	4.1	
12								28	13	14	5.1	
13								27	13	14	5.4	
14								26	13	14	5.7	
15								26	13	12	5.8	
16								27	13	10	5.9	
17								28	13	10	5.6	
18								28	13	9.8	5.0	
19								28	13	9.8	4.8	
20								28	13	9.8	4.9	
21								28	13	10	4.8	
22								28	13	10	5.1	
23								28	13	10	5.1	
24								26	13	10	5.1	
25								9.9	13	9.8	5.0	
26								10	13	9.8	5.0	
27								12	13	9.8	4.9	
28								13	13	10	4.8	
29								13	13	10	4.7	
30								13	13	10	4.6	
31								13		10		
TOTAL								858.9	390	355.8	191.9	
MEAN								27.7	13.0	11.5	6.40	
MAX								49	13	14	10	
MIN								9.9	13	9.8	3.1	
AC-FT								1700	774	706	381	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1998, BY WATER YEAR (WY) AND SEASON 2000*

MEAN	19.4	20.8	22.8	26.1	31.9	57.3	46.9	33.1	31.3	25.9	22.2	20.8
MAX	37.5	53.8	80.4	121	106	142	131	78.5	74.3	59.2	62.2	50.0
(WY)	1996	1968	1943	1948	1976	1948	1975	1975	1993	1984	1984	1976
MIN	2.86	3.37	4.10	1.62	7.75	25.9	26.4	21.7	13.0	3.90	3.86	2.66
(WY)	1975	1975	1975	1941	1962	1955	1988	1952	2000	1974	1974	1975

SUMMARY STATISTICS	FOR 2000 SEASON		WATER YEARS 1941 - 1998*	
ANNUAL MEAN			30.0	
HIGHEST ANNUAL MEAN			57.9	1976
LOWEST ANNUAL MEAN			13.2	1962
HIGHEST DAILY MEAN	49	Aug 7	172	Jun 19 1980
LOWEST DAILY MEAN	3.1	Nov 10	a.00	Nov 30 1966
ANNUAL SEVEN-DAY MINIMUM			1.4	Mar 8 1941
INSTANTANEOUS PEAK FLOW	50	Aug 7	b174	Jun 13 1942
INSTANTANEOUS PEAK STAGE	1.20	Aug 7	c2.60	Jun 19 1980
INSTANTANEOUS LOW FLOW			.00	Nov 30 1966
ANNUAL RUNOFF (AC-FT)			21720	
10 PERCENT EXCEEDS			51	
50 PERCENT EXCEEDS			28	
90 PERCENT EXCEEDS			7.6	

*--During period of operation (water years 1941-1998. Seasonal records beginning water year 2000).
a--Partial days of no flow in several years.
b--Gage height, 1.86 ft.
c--Maximum observed.
e--Estimated.

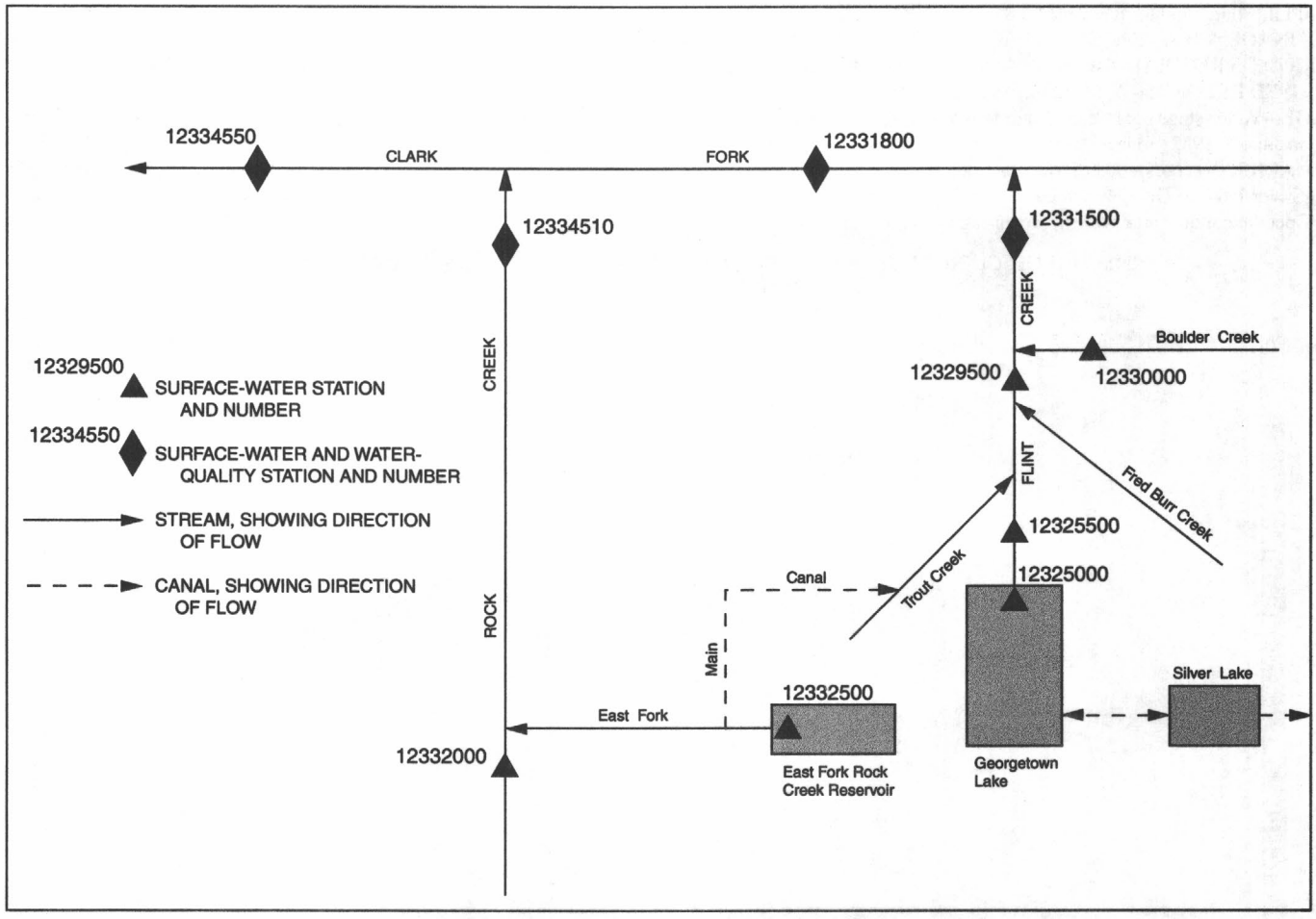


Figure 13. Schematic diagram showing diversions and storage in Flint and Rock Creek Basins.

PEND OREILLE RIVER BASIN

12329500 FLINT CREEK AT MAXVILLE, MT

LOCATION.--Lat 46°27'50", long 113°14'20", in $NE^1/_4SW^1/_4NW^1/_4$ sec.9, T.8 N., R.13 W., Granite County, Hydrologic Unit 17010202, on right bank 0.4 mi west of Maxville and 1.0 mi upstream from Boulder Creek.
DRAINAGE AREA.--208 mi^2.
PERIOD OF RECORD.--August 1941 to current year. April 1939 to September 1941 at site 0.5 mi upstream; records not equivalent owing to diversions.
REVISED RECORDS.--WSP 1216: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 4,828.38 ft above sea level.
REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by Georgetown Lake. Diversions for irrigation of about 8,200 acres upstream from station. During irrigation season, flow is supplemented by water from East Fork Rock Creek which is diverted in sec.5, T.4 N., R.14 W., 500 ft below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	61	58	61	e46	65	53	67	120	57	72	39
2	83	60	57	59	e58	62	54	74	94	61	74	40
3	73	62	e56	58	e55	61	54	76	90	61	74	40
4	70	62	e53	58	e50	63	57	71	89	62	79	42
5	68	59	e55	56	e54	66	62	62	93	60	79	46
6	67	62	e57	56	e56	59	59	57	97	60	75	46
7	67	62	60	54	e57	58	57	54	101	61	75	44
8	64	65	59	54	60	56	56	46	102	63	74	42
9	63	65	e54	51	73	52	57	53	100	63	75	46
10	62	64	e55	48	65	52	57	76	114	63	83	45
11	61	64	57	47	e60	51	58	79	117	64	91	47
12	60	65	61	e45	e58	50	59	80	108	62	81	46
13	59	64	61	e44	e60	50	65	78	105	66	80	44
14	59	64	56	e46	e60	50	70	76	100	66	70	43
15	59	63	61	e52	e62	49	66	76	101	65	71	42
16	60	66	61	54	e60	49	63	69	118	66	74	40
17	59	69	61	56	e55	49	64	70	104	67	74	41
18	60	71	60	61	e50	48	64	73	90	66	75	41
19	58	69	58	57	e52	51	67	62	88	68	78	42
20	57	71	58	57	e53	49	69	78	89	69	75	41
21	56	69	57	e58	e55	48	65	76	82	65	54	45
22	55	69	e53	e57	e60	50	68	81	75	62	43	43
23	54	e67	e46	e56	e65	53	83	91	71	63	42	43
24	54	70	e40	e57	59	50	80	99	65	63	45	42
25	55	72	e37	e58	51	50	74	94	60	61	48	41
26	55	84	e34	e60	e48	53	72	91	64	61	46	40
27	62	76	e32	e57	e46	54	68	92	61	63	44	40
28	65	71	e30	e55	e50	66	69	115	57	72	44	40
29	68	70	e34	e46	67	57	73	124	60	73	43	40
30	64	71	e44	e42	---	54	67	118	61	73	41	41
31	62	---	56	e44	---	53	---	126	---	68	40	---
TOTAL	1946	2007	1621	1664	1645	1678	1930	2484	2676	1994	2019	1272
MEAN	62.8	66.9	52.3	53.7	56.7	54.1	64.3	80.1	89.2	64.3	65.1	42.4
MAX	87	84	61	61	73	66	83	126	120	73	91	47
MIN	54	59	30	42	46	48	53	46	57	57	40	39
AC-FT	3860	3980	3220	3300	3260	3330	3830	4930	5310	3960	4000	2520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2000, BY WATER YEAR (WY)

MEAN	85.8	73.4	61.4	55.0	63.1	76.8	107	140	191	129	108	93.1
MAX	148	121	120	88.1	141	186	310	353	455	324	217	151
(WY)	1976	1984	1976	1976	1996	1943	1948	1976	1948	1975	1975	1993
MIN	50.2	41.3	27.7	26.6	27.3	33.5	48.6	64.6	70.7	48.1	30.1	33.6
(WY)	1992	1993	1993	1993	1993	1955	1961	1992	1987	1973	1992	1992

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1942 - 2000	
ANNUAL TOTAL	34204		22936			
ANNUAL MEAN	93.7		62.7		98.6	
HIGHEST ANNUAL MEAN					165	1976
LOWEST ANNUAL MEAN					53.2	1992
HIGHEST DAILY MEAN	288	Jun 4	126	May 31	933	Mar 29 1943
LOWEST DAILY MEAN	30	Dec 28	30	Dec 28	15	Feb 25 1962
ANNUAL SEVEN-DAY MINIMUM	36	Dec 24	36	Dec 24	19	Dec 31 1957
INSTANTANEOUS PEAK FLOW			a137	May 28	c1680	Mar 28 1943
INSTANTANEOUS PEAK STAGE			b3.08	Jan 13	b8.08	Feb 4 1963
INSTANTANEOUS LOW FLOW					15	Feb 25 1962
ANNUAL RUNOFF (AC-FT)	67840		45490		71460	
10 PERCENT EXCEEDS	143		81		169	
50 PERCENT EXCEEDS	85		60		80	
90 PERCENT EXCEEDS	59		44		45	

a--Gage height, 2.84 ft.
b--Backwater from ice.
c--Gage height, 6.79 ft.
e--Estimated.

PEND OREILLE RIVER BASIN

12330000 BOULDER CREEK AT MAXVILLE, MT

LOCATION.--Lat 46°28'20", long 113°13'59", in SE$^1/_4$NE$^1/_4$SW$^1/_4$ sec.4, T.8 N., R.13 W., Granite County, Hydrologic Unit 17010202, on right bank 0.2 mi upstream from mouth and 0.7 mi north of Maxville.

DRAINAGE AREA.--71.3 mi^2.

PERIOD OF RECORD.--April 1939 to current year. Monthly discharge only for some periods, published in WSP 1316.

GAGE.--Water-stage recorder. Elevation of gage is 4,750 ft above sea level, from topographic map. Apr. 15, 1939, to July 7, 1941, nonrecording gage at site 75 ft upstream at different datum. July 8-20, 1941, nonrecording gage at site 175 ft upstream at datum 1.03 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions upstream for irrigation of about 240 acres near the station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	23	22	e20	e18	18	18	41	75	27	16	8.4
2	21	21	21	e19	e19	18	18	62	76	29	16	8.8
3	20	23	20	e18	e18	18	17	65	72	30	16	9.4
4	20	23	e19	e18	e18	18	19	71	70	32	16	9.9
5	20	23	e19	19	18	19	21	69	68	30	16	11
6	19	23	e19	19	18	18	21	61	70	28	16	8.7
7	20	24	20	20	18	18	20	51	70	27	15	7.2
8	20	24	20	20	18	18	19	47	68	24	15	6.5
9	21	24	e19	20	18	18	20	44	66	22	14	6.8
10	23	23	e20	e19	18	18	21	45	70	21	15	6.5
11	22	23	20	e19	e17	18	22	42	65	20	14	7.9
12	22	21	20	e19	e18	17	24	38	57	19	15	7.9
13	22	21	21	e18	18	17	29	35	58	18	16	6.9
14	22	21	e20	e19	18	17	34	33	50	18	15	6.3
15	22	21	21	19	18	17	31	33	48	19	14	5.4
16	22	21	21	19	18	17	30	41	49	15	13	4.5
17	22	21	21	19	e17	18	30	63	48	11	13	4.0
18	22	21	21	e20	e17	17	31	73	42	16	13	4.2
19	22	21	21	19	e17	18	32	83	41	18	13	4.5
20	22	21	21	e19	e18	17	27	82	41	21	13	4.2
21	22	20	21	19	e18	17	28	89	37	18	13	4.8
22	22	19	20	19	18	17	35	106	34	17	12	7.0
23	22	e19	e19	19	18	18	48	113	32	17	12	8.2
24	22	19	e18	18	18	17	38	102	32	16	10	8.2
25	22	21	e18	e18	18	17	33	86	31	16	9.6	8.6
26	22	23	e17	18	18	18	30	85	29	15	9.1	8.6
27	24	21	e18	18	18	18	27	76	28	16	8.4	8.5
28	26	20	e18	18	18	20	40	113	26	17	7.9	8.1
29	26	21	e20	e17	18	18	46	106	27	16	8.1	7.8
30	24	21	e21	e16	---	18	38	86	28	16	8.2	8.0
31	23	---	e21	e17	---	18	---	86	---	16	8.3	---
TOTAL	681	647	617	579	519	550	847	2127	1508	625	400.6	216.8
MEAN	22.0	21.6	19.9	18.7	17.9	17.7	28.2	68.6	50.3	20.2	12.9	7.23
MAX	26	24	22	20	19	20	48	113	76	32	16	11
MIN	19	19	17	16	17	17	17	33	26	11	7.9	4.0
AC-FT	1350	1280	1220	1150	1030	1090	1680	4220	2990	1240	795	430

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2000, BY WATER YEAR (WY)

MEAN	23.0	23.6	20.9	18.6	18.5	18.6	29.0	116	177	60.1	20.9	18.0
MAX	51.1	44.8	39.0	32.4	30.5	28.6	56.3	261	376	244	68.4	54.1
(WY)	1960	1976	1976	1976	1951	1976	1943	1976	1975	1975	1975	1965
MIN	3.59	11.8	11.0	8.49	10.0	12.3	10.4	54.7	35.0	12.6	8.14	6.59
(WY)	1988	1988	1988	1988	1941	1993	1991	1977	1992	1988	1988	1991

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1940 - 2000	
ANNUAL TOTAL	15015.3		9317.4			
ANNUAL MEAN	41.1		25.5		45.4	
HIGHEST ANNUAL MEAN					82.2	1976
LOWEST ANNUAL MEAN					20.4	1992
HIGHEST DAILY MEAN	339	Jun 4	113	May 23	1140	Jun 19 1975
LOWEST DAILY MEAN	8.1	Sep 24	4.0	Sep 17	2.8	Oct 13 1991
ANNUAL SEVEN-DAY MINIMUM	9.8	Sep 21	4.5	Sep 15	3.4	Oct 8 1987
INSTANTANEOUS PEAK FLOW			a134	May 28	1460	Jun 19 1975
INSTANTANEOUS PEAK STAGE			b3.27	Dec 29	4.55	Jun 19 1975
INSTANTANEOUS LOW FLOW					c2.8	Oct 13 1991
ANNUAL RUNOFF (AC-FT)	29780		18480		32900	
10 PERCENT EXCEEDS	91		48		112	
50 PERCENT EXCEEDS	21		19		22	
90 PERCENT EXCEEDS	15		10		12	

a--Gage height, 2.35 ft.
b--Backwater from ice.
c--Result of upstream diversion.
e--Estimated.

PEND OREILLE RIVER BASIN

12331500 FLINT CREEK NEAR DRUMMOND, MT

LOCATION.--Lat 46°37'44", long 113°09'02", in NE$^1/_4$NW$^1/_4$NE$^1/_4$ sec. 18, T.10 N.,R.12 W., Granite County, Hydrologic Unit 17010202, on left bank 10 ft downstream from county bridge, 2.0 mi upstream from mouth, and 2.7 mi south of Drummond.

DRAINAGE AREA.--490 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,017.27 ft above sea level. June 1948 to September 1949 at same site with different datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Some regulation by Georgetown Lake (station number 12325000). Diversions for irrigation of about 25,000 acres of which 1,000 acres are downstream from station. During irrigation season, flow is supplemented by water from East Fork Rock Creek which is diverted in sec.5, T.4 N., R.14 W., 500 ft below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e120	111	112	e115	e100	120	94	51	51	6.6	4.1	16
2	e118	108	105	e113	135	112	97	47	31	8.4	3.8	16
3	e112	111	e102	e110	141	108	95	36	23	9.4	3.7	17
4	e108	110	e100	e110	110	108	99	26	22	11	4.1	21
5	104	106	e100	e107	e105	111	106	21	21	10	5.0	26
6	108	e109	e106	e107	106	104	104	6.7	21	9.9	4.3	29
7	109	e109	e112	e105	107	102	100	4.7	20	10	4.2	29
8	110	e115	e115	e105	111	100	97	4.0	16	12	4.3	27
9	109	e115	e108	e98	126	96	97	2.7	16	14	4.2	30
10	115	e110	e110	e95	115	96	98	2.9	20	14	4.1	32
11	113	e110	e110	e92	e110	96	100	3.2	22	13	6.2	42
12	113	e115	123	e89	e105	94	100	3.2	20	16	4.7	37
13	113	e110	122	e87	106	95	108	3.1	19	21	4.3	35
14	114	e110	e110	e89	103	95	120	2.9	16	20	5.3	28
15	117	e110	120	e95	103	94	116	3.0	17	21	4.3	29
16	120	e115	124	105	100	93	111	2.9	26	21	5.6	31
17	126	e118	123	107	91	94	111	3.7	34	20	7.4	34
18	125	e122	122	110	e85	93	111	5.1	26	20	8.5	33
19	122	126	119	108	e88	95	115	7.4	23	21	9.1	34
20	120	128	118	113	e90	93	108	12	21	22	9.4	34
21	116	123	117	106	e105	91	97	10	18	20	14	37
22	113	120	e109	105	110	95	101	13	16	17	18	36
23	112	112	e100	107	134	98	121	18	14	15	16	39
24	111	121	e80	107	117	93	115	21	12	10	16	39
25	109	124	e72	e106	102	93	103	21	8.2	5.7	15	37
26	110	135	e67	105	94	96	97	17	8.5	5.8	11	37
27	119	128	e64	104	99	98	86	16	10	6.6	10	36
28	123	121	e62	103	142	112	76	29	8.4	4.5	10	39
29	125	118	e60	e82	135	102	73	41	5.6	4.4	10	44
30	117	120	e64	e80	---	96	58	26	5.3	4.6	12	44
31	114	---	e80	e82	---	94	---	50	---	4.4	14	---
TOTAL	3565	3490	3136	3147	3175	3067	3014	510.5	571.0	398.3	252.6	968
MEAN	115	116	101	102	109	98.9	100	16.5	19.0	12.8	8.15	32.3
MAX	126	135	124	115	142	120	121	51	51	22	18	44
MIN	104	106	60	80	85	91	58	2.7	5.3	4.4	3.7	16
AC-FT	7070	6920	6220	6240	6300	6080	5980	1010	1130	790	501	1920
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2000, BY WATER YEAR (WY)												
MEAN	135	128	101	99.9	124	136	166	173	246	136	48.3	78.5
MAX	186	165	144	156	232	256	326	459	627	412	167	196
(WY)	1996	1999	1999	1997	1996	1997	1996	1997	1997	1998	1993	1993
MIN	81.2	91.4	63.8	57.1	56.9	79.5	93.0	14.1	14.9	12.8	6.66	20.4
(WY)	1993	1993	1993	1993	1993	1991	1993	1992	1992	2000	1991	1992

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1991 - 2000	
ANNUAL TOTAL	45783.9		25294.4			
ANNUAL MEAN	125		69.1		131	
HIGHEST ANNUAL MEAN					234	1997
LOWEST ANNUAL MEAN					60.2	1992
HIGHEST DAILY MEAN	474	Jun 4	142	Feb 28	998	Jun 27 1998
LOWEST DAILY MEAN	7.5	Jul 31	2.7	May 9	.59	May 6 1992
ANNUAL SEVEN-DAY MINIMUM	14	Jul 30	3.0	May 9	1.8	Aug 9 1992
INSTANTANEOUS PEAK FLOW			a174	Feb 28	c1100	Feb 8 1996
INSTANTANEOUS PEAK STAGE			b3.08	Jan 7	d6.99	Feb 9 1996
ANNUAL RUNOFF (AC-FT)	90810		50170		94650	
10 PERCENT EXCEEDS	214		118		238	
50 PERCENT EXCEEDS	120		94		110	
90 PERCENT EXCEEDS	44		6.5		23	

a--Gage height, 2.53 ft.
b--Backwater from ice jam; but may have been higher during period of no record, Jan. 13-16.
c--About, estimated based on upstream measurement.
d--Backwater from ice jam.
e--Estimated.

12331500 FLINT CREEK NEAR DRUMMOND, MT--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972-73, 1985 to current year.

REMARKS.--Flow affected by diversions for irrigation upstream from station. Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
17...	1030	E118	8.3	328	5.0	3.0	150	40	12
MAR 2000									
07...	0920	104	8.3	317	6.0	3.5	150	39	12
APR									
04...	1820	101	8.8	318	16.0	12.0	150	40	12
MAY									
09...	1625	2.8	8.8	406	12.0	13.0	180	49	14
22...	1800	16	8.7	275	26.0	18.5	130	36	10
JUN									
05...	0945	21	8.4	417	19.5	12.5	190	53	15
JUL									
27...	1030	8.0	8.3	512	23.0	16.0	250	68	19
SEP									
05...	1415	26	8.4	529	19.5	16.5	230	65	17

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
17...	5	7	<.1	<.1	E.7	2	E6	126	<1
MAR 2000									
07...	6	9	<.1	<.1	E.7	2	E9	232	<1
APR									
04...	8	10	<.1	<.1	E.8	2	<10	250	<1
MAY									
09...	11	11	<.1	<.1	E1	2	<10	69	E.6
22...	10	12	<.1	<.1	2	2	E6	210	<1
JUN									
05...	12	11	<.1	<.1	1	3	13	86	<1
JUL									
27...	11	13	<.1	<.1	E1	2	E9	72	<1
SEP									
05...	12	13	<.1	1	2	2	17	166	<1

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
17...	2	17	52	1	<31	7	E2.2	76
MAR 2000								
07...	3	20	66	3	13	12	3.4	85
APR								
04...	3	22	81	3	9	17	4.6	78
MAY								
09...	<1	38	51	3	7	3	.02	79
22...	3	40	118	3	10	13	.56	92
JUN								
05...	1	78	100	4	3	4	.23	89
JUL								
27...	<1	90	110	1	4	13	.28	70
SEP								
05...	2	63	132	3	7	19	1.3	55

E--Estimated.

PEND OREILLE RIVER BASIN

12331800 CLARK FORK NEAR DRUMMOND, MT

LOCATION.--Lat 46°42'44", long 113°19'48", in NE$^1/_4$SW$^1/_4$NW$^1/_4$ sec. 14, T.11 N., R.14 W., in Granite County, Hydrologic Unit 17010201, on right bank 50 ft upstream from country road bridge, 0.3 mi north of Bearmouth, 4.5 mi east of Bearmouth Chalet, 9.0 mi northwest of Drummond, and at river mile 403.9.

DRAINAGE AREA.--2,501 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,790 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good. Some regulation by settling ponds on Silver Bow Creek near Anaconda and Georgetown Lake (station number 12325000) on Flint Creek. Diversions for irrigation of about 88,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 23, 1981 recorded a discharge of about 16,000 ft^3/s, from measurements made upstream at Clark Fork at Drummond (12331600) and at downstream site, Clark Fork at Clinton (12331900).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	475	586	597	495	393	589	498	456	498	169	79	110
2	476	578	582	512	688	571	519	418	437	183	79	124
3	478	574	580	474	735	560	520	374	382	194	87	132
4	473	576	512	467	554	573	512	340	340	222	88	146
5	483	572	475	508	522	590	543	337	335	249	91	185
6	496	574	557	488	526	580	568	343	324	243	89	202
7	504	579	582	489	531	566	548	331	295	232	93	203
8	512	575	554	512	541	564	521	322	295	222	92	193
9	519	572	513	504	560	547	507	315	288	222	98	187
10	535	565	538	468	556	530	510	325	298	216	96	186
11	543	563	556	484	511	526	522	327	332	203	101	202
12	555	563	573	476	490	520	514	291	335	169	107	204
13	546	560	572	406	518	509	533	284	334	174	107	210
14	542	558	526	488	510	508	572	274	327	165	114	205
15	545	554	549	543	511	506	575	268	331	150	111	197
16	559	553	573	519	506	496	565	264	338	141	112	193
17	574	558	572	531	485	498	563	248	356	137	121	192
18	574	581	576	494	469	490	570	240	337	139	123	190
19	569	581	572	499	457	492	579	245	310	154	126	199
20	562	576	563	503	452	492	587	250	296	173	136	216
21	559	572	564	516	494	483	583	242	281	170	124	238
22	551	561	563	516	519	485	589	246	251	156	156	250
23	554	537	509	518	580	495	604	250	234	134	141	264
24	553	546	487	512	586	496	636	257	224	116	142	271
25	551	570	452	497	540	484	611	259	208	105	163	274
26	546	632	418	515	512	489	585	247	201	101	147	271
27	565	648	389	510	510	509	550	254	193	96	117	276
28	594	618	355	500	651	553	508	250	188	93	112	278
29	616	595	315	466	655	564	499	283	178	90	115	291
30	604	592	334	368	---	527	478	298	165	78	109	294
31	599	---	341	318	---	506	---	393	---	77	110	---
TOTAL	16812	17269	15849	15096	15562	16298	16469	9231	8911	4973	3486	6383
MEAN	542	576	511	487	537	526	549	298	297	160	112	213
MAX	616	648	597	543	735	590	636	456	498	249	163	294
MIN	473	537	315	318	393	483	478	240	165	77	79	110
AC-FT	33350	34250	31440	29940	30870	32330	32670	18310	17670	9860	6910	12660

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2000, BY WATER YEAR (WY)

MEAN	658	650	559	556	707	733	841	1273	1670	847	420	495
MAX	859	810	640	754	1377	1048	1356	2557	3560	1731	895	1007
(WY)	1998	1998	1998	1997	1996	1997	1996	1997	1997	1998	1993	1993
MIN	464	511	444	386	454	526	549	298	297	160	112	201
(WY)	1995	1995	1995	1995	1994	2000	2000	2000	2000	2000	2000	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1993 - 2000	
ANNUAL TOTAL	246042		146339			
ANNUAL MEAN	674		400		779	
HIGHEST ANNUAL MEAN					1192	1997
LOWEST ANNUAL MEAN					400	2000
HIGHEST DAILY MEAN	2840	Jun 4	735	Feb 3	8430	Feb 9 1996
LOWEST DAILY MEAN	232	Aug 1	77	Jul 31	77	Jul 31 2000
ANNUAL SEVEN-DAY MINIMUM	244	Jul 30	83	Jul 29	83	Jul 29 2000
INSTANTANEOUS PEAK FLOW			905	Feb 2	9800	Feb 9 1996
INSTANTANEOUS PEAK STAGE			3.97	Feb 2	10.03	Feb 9 1996
INSTANTANEOUS LOW FLOW			a75	Jul 30	a75	Jul 30 2000
ANNUAL RUNOFF (AC-FT)	488000		290300		564700	
10 PERCENT EXCEEDS	1040		576		1420	
50 PERCENT EXCEEDS	572		486		622	
90 PERCENT EXCEEDS	359		133		296	

a--Gage height, 2.03 ft.

12331800 CLARK FORK NEAR DRUMMOND, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1993 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
17...	1120	556	8.3	474	5.0	4.5	210	60	15
MAR 2000									
07...	1030	570	8.4	464	5.5	6.5	220	62	15
APR									
05...	0915	529	8.4	483	10.0	8.5	220	62	15
MAY									
09...	1730	315	8.5	485	15.5	14.0	220	63	15
23...	0825	253	8.2	513	17.0	14.5	240	68	17
JUN									
05...	1045	337	8.4	508	24.0	17.5	230	65	16
JUL									
21...	1440	181	8.5	573	32.0	22.5	270	76	19
SEP									
05...	1515	194	8.5	616	20.0	17.5	280	80	19

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
17...	7	8	<.1	E.08	3	11	<10	184	<1
MAR 2000									
07...	7	10	<.1	E.1	5	28	<10	366	<1
APR									
05...	9	10	<.1	<.1	4	13	<10	278	E.5
MAY									
09...	9	9	<.1	<.1	4	8	<10	80	<1
23...	10	10	<.1	<.1	5	7	E6	53	<1
JUN									
05...	12	12	<.1	<.1	5	10	<10	108	<1
JUL									
21...	10	13	<.1	<.1	4	8	<10	93	<1
SEP									
05...	11	11	<.1	E.08	8	8	<10	91	<1

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
17...	2	10	56	4	<31	12	18	73
MAR 2000								
07...	3	19	63	8	27	20	31	74
APR								
05...	2	19	59	7	18	21	30	67
MAY								
09...	1	13	27	4	14	4	3.4	91
23...	<1	19	32	8	11	3	2.0	92
JUN								
05...	<1	15	46	6	9	6	5.5	82
JUL								
21...	<1	13	57	3	10	23	11	50
SEP								
05...	<1	7	36	4	11	25	13	44

E--Estimated.

PEND OREILLE RIVER BASIN

12332000 MIDDLE FORK ROCK CREEK NEAR PHILIPSBURG, MT

LOCATION.--Lat 46°11'03", long 113°30'05", in $SW^1/_4NW^1/_4SE^1/_4$ sec.17, T.5 N., R.15 W., Granite County, Hydrologic Unit 17010202, on left bank 40 ft downstream from bridge on county highway, 1.2 mi upstream from East Fork, 3.4 mi upstream from West Fork, and 15 mi southwest of Philipsburg.

DRAINAGE AREA.--123 mi^2.

PERIOD OF RECORD.--September 1937 to current year. Monthly discharges only January to March 1938, published in WSP 1316.

GAGE.--Water-stage recorder. Datum of gage is 5,444.08 ft above sea level. Prior to Oct. 25, 1990, gage located at several sites 0.8 to 1.0 mi downstream. See WSP 1736 or 1933 for history of changes prior to Oct. 1, 1955.

REMARKS.--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. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	41	44	e38	e36	e35	34	130	241	112	48	31
2	45	e39	42	e36	e38	e35	36	164	224	115	47	41
3	45	43	e38	e33	e38	e36	33	178	226	110	47	42
4	44	43	e36	e36	e36	e38	43	207	236	107	47	41
5	44	43	e36	e38	e36	e36	55	209	250	100	51	47
6	43	47	e38	e38	e38	e34	49	196	271	96	47	45
7	44	46	e38	e38	e38	e34	e49	177	279	94	46	41
8	43	44	e36	e40	e40	e33	e48	170	285	90	44	38
9	44	43	e36	e40	e38	e32	47	166	275	88	42	39
10	45	42	e38	e38	e36	e32	50	164	248	84	45	40
11	44	42	e38	e36	e34	32	51	152	220	81	46	46
12	44	42	e40	e34	e34	31	56	140	209	79	43	44
13	43	41	e38	e34	e33	31	65	132	234	77	41	39
14	42	40	e38	e36	e33	31	71	130	205	74	40	37
15	42	40	e38	e38	e34	30	65	133	212	72	40	34
16	44	40	e40	e40	e36	29	63	150	210	71	39	33
17	44	41	e40	e40	e34	31	65	166	188	68	39	34
18	44	42	e40	e38	e32	29	67	182	172	66	38	33
19	43	e39	e38	e38	e32	32	74	212	174	67	38	36
20	43	e40	e40	e40	e34	26	79	218	166	69	36	36
21	42	e39	e40	e40	e34	28	83	244	155	67	33	40
22	42	e37	e38	e40	e36	32	96	289	151	64	33	39
23	41	e36	e38	e40	e36	35	107	324	147	61	33	37
24	41	e38	e36	e40	e34	31	99	297	141	59	34	36
25	40	e44	e36	e38	e34	31	94	285	136	57	34	36
26	41	57	e35	e40	e32	35	91	292	132	55	33	35
27	45	51	e35	e38	e34	36	89	272	127	53	32	33
28	48	e42	e34	e38	e36	43	117	295	122	52	31	33
29	49	e41	e36	e36	e36	37	127	301	117	50	31	32
30	46	44	e36	e34	---	35	121	271	113	48	31	32
31	44	---	e38	e34	---	32	---	269	---	48	31	---
TOTAL	1355	1267	1174	1167	1022	1022	2124	6515	5866	2334	1220	1130
MEAN	43.7	42.2	37.9	37.6	35.2	33.0	70.8	210	196	75.3	39.4	37.7
MAX	49	57	44	40	40	43	127	324	285	115	51	47
MIN	40	36	34	33	32	26	33	130	113	48	31	31
AC-FT	2690	2510	2330	2310	2030	2030	4210	12920	11640	4630	2420	2240
CFSM	.36	.34	.31	.31	.29	.27	.58	1.71	1.59	.61	.32	.31
IN.	.41	.38	.36	.35	.31	.31	.64	1.97	1.77	.71	.37	.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

MEAN	49.9	43.2	36.5	32.1	33.0	36.5	75.7	337	487	181	70.9	52.2
MAX	201	104	64.1	60.9	60.3	71.2	190	650	914	496	141	98.5
(WY)	1947	1947	1947	1976	1996	1986	1943	1947	1972	1975	1975	1946
MIN	26.9	25.7	23.6	22.0	16.5	22.7	28.1	137	141	48.7	25.8	30.4
(WY)	1988	1980	1946	1977	1959	1955	1975	1953	1992	1940	1940	1987

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000	
ANNUAL TOTAL	50165		26196			
ANNUAL MEAN	137		71.6		120	
HIGHEST ANNUAL MEAN					183	1997
LOWEST ANNUAL MEAN					62.3	1940
HIGHEST DAILY MEAN	982	May 29	324	May 23	1480	Jun 16 1974
LOWEST DAILY MEAN	34	Jan 25	26	Mar 20	5.3	Feb 9 1953
ANNUAL SEVEN-DAY MINIMUM	35	Dec 24	29	Mar 15	10	Feb 22 1962
INSTANTANEOUS PEAK FLOW			a343	May 23	c1680	Jun 16 1974
INSTANTANEOUS PEAK STAGE			b2.81	Feb 22	5.58	Jun 16 1974
INSTANTANEOUS LOW FLOW					5.3	Feb 9 1953
ANNUAL RUNOFF (AC-FT)	99500		51960		86740	
ANNUAL RUNOFF (CFSM)	1.12		.58		.97	
ANNUAL RUNOFF (INCHES)	15.17		7.92		13.23	
10 PERCENT EXCEEDS	387		175		330	
50 PERCENT EXCEEDS	48		41		48	
90 PERCENT EXCEEDS	38		33		27	

a--Gage height, 2.63 ft.
b--Recorded, may have been higher due to backwater from ice during period of no gage-height record.
c--Site and datum then in use.
e--Estimated.

PEND OREILLE RIVER BASIN

12334510 ROCK CREEK NEAR CLINTON, MT

LOCATION.--Lat 46°43'21", long 113°40'56", in NW$^1/_4$NE$^1/_4$SW$^1/_4$ sec.12, T.11 N., R.17 W., Missoula County, Hydrologic Unit 17010202, on left bank 100 ft downstream from private road bridge, 0.2 mi upstream from mouth, and 3.7 mi southeast of Clinton.

DRAINAGE AREA.--885 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,519.46 ft above sea level.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Some regulation by East Fork Rock Creek Reservoir (station number 12332500). During irrigation season water is diverted from East Fork Rock Creek in sec.5, T.4 N., R.14 W., 500 ft below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek. Diversions for irrigation of about 16,100 acres. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of 8.52 ft, from floodmark, discharge, 6,500 ft^3/s; local residents report flood of 1927 reached a stage of about 9.5 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	245	230	211	187	e130	206	205	555	914	345	178	155
2	241	220	207	187	213	202	218	637	797	341	174	169
3	238	216	199	175	224	204	219	720	745	340	169	172
4	235	225	173	171	198	213	222	790	737	340	168	172
5	233	225	147	188	188	221	281	838	735	334	169	177
6	233	221	184	177	196	220	299	806	759	330	168	183
7	233	223	208	175	191	220	273	740	767	322	164	182
8	231	225	193	190	189	219	253	684	764	317	161	178
9	242	219	180	193	197	210	256	667	750	315	160	183
10	238	212	183	180	196	201	276	661	732	301	162	182
11	237	209	191	174	180	202	297	631	698	288	165	194
12	232	208	195	171	180	196	319	582	657	281	164	194
13	228	206	205	158	185	193	387	544	657	288	161	189
14	223	204	191	173	188	194	481	516	648	288	158	182
15	219	203	187	195	191	190	476	514	620	279	158	178
16	221	201	198	195	186	186	437	529	669	281	157	175
17	220	202	205	194	167	185	425	570	620	275	159	186
18	222	209	205	174	155	186	432	627	565	268	160	184
19	223	204	200	162	146	191	461	680	538	265	162	181
20	222	201	194	171	153	188	496	716	538	265	162	181
21	221	206	195	187	176	180	517	748	505	258	160	187
22	217	196	186	189	197	181	555	840	477	248	159	189
23	210	187	160	184	201	196	602	956	458	241	159	189
24	208	176	e130	180	203	193	572	952	435	230	162	187
25	208	207	e125	177	193	185	519	893	419	218	168	185
26	209	253	e120	184	182	190	494	872	405	205	164	183
27	224	260	e110	182	185	199	470	852	391	199	162	184
28	253	227	e120	178	208	230	509	913	379	192	159	182
29	262	209	e120	142	209	237	628	1010	367	185	158	179
30	245	214	122	109	---	216	589	935	354	181	156	184
31	234	---	e140	e110	---	206	---	929	---	181	155	---
TOTAL	7107	6398	5384	5412	5407	6240	12168	22907	18100	8401	5041	5446
MEAN	229	213	174	175	186	201	406	739	603	271	163	182
MAX	262	260	211	195	224	237	628	1010	914	345	178	194
MIN	208	176	110	109	130	180	205	514	354	181	155	155
AC-FT	14100	12690	10680	10730	10720	12380	24140	45440	35900	16660	10000	10800
CFSM	.26	.24	.20	.20	.21	.23	.46	.83	.68	.31	.18	.21
IN.	.30	.27	.23	.23	.23	.26	.51	.96	.76	.35	.21	.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2000, BY WATER YEAR (WY)

MEAN	256	230	201	188	196	249	513	1503	1763	699	317	268
MAX	474	430	460	329	426	428	1022	3676	3755	1908	635	389
(WY)	1976	1976	1976	1976	1996	1986	1996	1976	1975	1975	1975	1975
MIN	157	149	119	106	109	163	236	544	407	267	156	148
(WY)	1988	1988	1989	1988	1993	1991	1975	1977	1992	1985	1988	1992

12334510 ROCK CREEK NEAR CLINTON, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1973 - 2000	
ANNUAL TOTAL	199385		108011			
ANNUAL MEAN	546		295		533	
HIGHEST ANNUAL MEAN					966	1976
LOWEST ANNUAL MEAN					258	1992
HIGHEST DAILY MEAN	3670	Jun 4	1010	May 29	5480	May 18 1997
LOWEST DAILY MEAN	110	Dec 27	109	Jan 30	38	Dec 22 1998
ANNUAL SEVEN-DAY MINIMUM	121	Dec 24	121	Dec 24	65	Jan 3 1974
INSTANTANEOUS PEAK FLOW			1050	May 29	b5530	May 18 1997
INSTANTANEOUS PEAK STAGE			4.99	May 29	8.05	Jun 9 1997
INSTANTANEOUS LOW FLOW			a92	Jan 31	37	Dec 23 1998
ANNUAL RUNOFF (AC-FT)	395500		214200		385900	
ANNUAL RUNOFF (CFSM)	.62		.33		.60	
ANNUAL RUNOFF (INCHES)	8.38		4.54		8.18	
10 PERCENT EXCEEDS	1410		640		1280	
50 PERCENT EXCEEDS	255		206		270	
90 PERCENT EXCEEDS	193		162		155	

a--Backwter from ice.
b--Gage height, 7.81 ft.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979-83, 1985 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: September 1979 to September 1983, April 1995 to current year.
INSTRUMENTATION.--Temperature probe installed Apr. 14, 1995.
REMARKS--Unpublished records of instantaneous specific conductance and temperature data are available in files of the District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE : Maximum, 23.0, Aug. 1, 2000; minimum, 0.0°C, on many days during winter periods.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.0°C, Aug.1; minimum, 0.0°C, many days December through February.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV 1999											
17...	1230	201	8.2	149	7.0	3.5	67	17	5.9	1.1	.2
APR 2000											
05...	1030	266	8.0	138	10.0	6.0	62	16	5.4	--	--
MAY											
23...	1010	932	8.0	83	15.5	10.5	36	9.3	3.1	--	--
JUN											
05...	1210	715	8.1	98	28.5	12.5	43	11	3.7	--	--
JUL											
27...	0745	201	8.1	146	15.0	15.0	68	18	5.9	1.1	.2
SEP											
06...	1050	183	8.2	158	13.5	10.5	71	18	6.1	--	--

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
NOV 1999											
17...	3.1	74	.8	.1	11	4.8	E.1	.008	<.001	.005	E.01
APR 2000											
05...	--	--	--	--	--	--	--	--	--	--	--
MAY											
23...	--	--	--	--	--	--	.3	<.005	<.001	.005	.03
JUN											
05...	--	--	--	--	--	--	.2	.005	<.001	.049	.02
JUL											
27...	3.1	72	.6	.1	8.6	3.7	.2	.011	<.001	.004	.03
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--

E--Estimated.

12334510 ROCK CREEK NEAR CLINTON, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
NOV 1999											
17...	.12	48	89	<2	<3	<.1	<.1	<1	<1	<1	E6
APR 2000											
05...	--	--	--	E.6	<3	<.1	<.1	--	<1	<1	11
MAY											
23...	--	--	--	E.5	<3	<.1	<.1	--	E.9	1	20
JUN											
05...	--	--	--	E.6	<3	<.1	<.1	--	<1	2	<10
JUL											
27...	.11	46	84	E.7	E2	<.1	<.1	<1	<1	<1	E10
SEP											
06...	--	--	--	E.6	<3	<.1	<.1	--	E.7	<1	15

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999											
17...	21	<1	<1	<1	E2	<2	<1	<31	1	.54	50
APR 2000											
05...	63	<1	<1	<1	3	--	<1	<1	4	2.9	77
MAY											
23...	211	<1	<1	1	13	--	3	3	16	40	70
JUN											
05...	91	<1	<1	1	6	--	2	<1	6	12	73
JUL											
27...	67	<1	<1	3	8	<2	<1	2	5	2.7	71
SEP											
06...	51	<1	<1	2	6	--	<1	<1	3	1.5	76

E--Estimated.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.5	7.0	8.5	5.5	3.0	4.5	4.0	3.0	3.5	1.5	.5	.5
2	8.5	5.5	7.0	4.5	2.0	3.0	3.0	2.5	2.5	1.0	.0	.5
3	9.0	4.5	6.5	4.5	2.0	3.0	2.5	1.0	2.0	1.0	.0	.5
4	10.0	5.0	7.0	6.0	3.5	4.5	1.0	.0	.0	1.0	.0	.5
5	9.5	5.5	7.5	4.0	2.5	3.5	.5	.0	.5	1.0	.5	.5
6	8.5	7.0	8.0	6.0	4.0	5.0	1.5	.5	1.0	1.0	.0	.5
7	9.5	7.5	8.5	5.5	4.5	5.0	1.5	.5	1.0	2.0	.5	1.0
8	11.0	7.5	9.0	5.5	4.0	4.5	2.0	.0	1.0	1.5	.5	1.0
9	10.0	8.5	9.5	6.0	4.5	5.0	.5	.0	.5	1.5	.0	1.0
10	9.0	6.5	8.0	5.0	3.5	4.5	1.5	.5	1.0	1.0	.0	.5
11	9.5	6.5	8.0	6.5	4.5	5.5	1.5	1.0	1.5	1.0	.5	.5
12	9.0	8.0	8.5	7.5	5.0	6.0	2.5	1.0	2.0	1.5	.0	.5
13	10.5	7.0	8.5	9.0	6.5	7.5	2.5	.5	1.5	.5	.0	.0
14	10.0	7.5	9.0	7.0	4.5	5.5	1.5	.5	1.0	1.5	.5	1.0
15	7.5	5.5	6.5	5.0	3.0	4.0	2.0	1.0	1.5	1.5	.5	1.0
16	6.5	3.5	5.0	5.0	2.5	3.5	3.5	2.0	2.5	1.5	.5	1.0
17	5.0	3.5	4.5	4.0	3.0	3.5	3.5	2.0	2.5	2.0	.5	1.5
18	8.0	4.5	5.5	4.5	3.5	4.0	3.0	2.0	2.5	1.5	.0	.5
19	7.5	4.0	5.5	4.0	2.5	3.5	2.5	.5	1.5	1.5	.0	.5
20	7.0	4.0	5.5	4.5	3.0	3.5	2.0	1.5	2.0	1.5	.0	1.0
21	7.5	4.0	5.5	3.5	2.0	2.5	2.5	1.5	2.0	2.0	.5	1.0
22	7.5	4.0	5.5	2.5	1.5	2.0	2.0	.5	1.0	1.5	.5	1.0
23	7.0	4.0	5.5	2.0	1.0	1.5	.5	.0	.0	2.0	.5	1.0
24	7.0	4.0	5.5	2.5	1.5	2.0	.5	.0	.0	2.0	.5	1.0
25	7.0	4.5	5.5	4.5	2.5	3.5	.5	.0	.0	2.0	.5	1.0
26	7.0	5.5	6.0	6.0	4.0	5.0	.5	.0	.0	1.5	.5	1.0
27	8.0	6.0	7.0	4.0	3.0	3.5	.5	.0	.0	2.0	1.0	1.5
28	7.5	6.5	7.0	3.5	2.5	3.0	.5	.0	.0	2.0	.5	1.0
29	7.0	5.5	6.0	3.0	1.5	2.5	.5	.0	.5	1.5	.0	.5
30	7.5	5.0	6.0	3.5	2.0	3.0	.5	.0	.5	.5	.0	.0
31	6.0	4.5	5.0	---	---	---	1.0	.5	.5	.5	.0	.0
MONTH	11.0	3.5	7.0	9.0	1.0	4.0	4.0	0.0	1.0	2.0	0.0	0.5

PEND OREILLE RIVER BASIN

12334510 ROCK CREEK NEAR CLINTON, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.0	.0	.5	4.5	1.5	2.5	7.0	4.5	6.0	14.0	7.5	10.5
2	1.5	1.0	1.5	4.5	.5	2.5	7.0	5.0	6.0	12.0	9.0	10.5
3	2.5	.5	1.5	6.0	1.5	3.5	9.5	3.0	6.0	11.5	7.5	9.5
4	1.5	.0	.5	6.5	2.0	3.5	11.0	5.0	7.5	10.0	8.5	9.0
5	2.0	.5	1.0	5.5	2.5	3.5	10.0	5.5	7.5	10.5	7.5	9.0
6	3.5	1.0	2.0	6.5	3.0	4.5	7.5	5.0	6.0	10.5	7.5	9.0
7	3.0	1.0	2.0	5.0	3.5	4.0	9.0	3.5	6.0	11.0	6.5	9.0
8	3.5	1.0	2.0	5.0	3.0	4.0	10.5	4.0	6.5	10.0	7.0	8.5
9	2.5	1.0	2.0	5.5	2.5	4.0	11.5	5.5	8.0	10.0	8.0	8.5
10	2.5	.0	1.0	6.0	3.0	4.0	10.5	6.0	8.0	8.5	7.0	7.5
11	1.5	.0	.5	5.0	3.0	3.5	11.5	6.0	8.0	8.0	5.5	7.0
12	2.0	.5	1.0	5.5	2.0	3.5	11.0	7.0	9.0	8.5	6.5	7.5
13	2.5	1.0	1.5	5.5	3.0	4.0	10.0	8.0	9.0	10.5	5.5	8.0
14	1.5	1.0	1.5	6.0	2.5	4.0	8.5	5.5	7.0	11.0	7.5	9.0
15	3.0	1.0	2.0	5.0	2.0	3.5	8.5	6.0	7.5	12.0	7.5	10.0
16	3.5	1.0	2.0	3.5	1.5	2.5	8.5	6.0	7.5	12.0	8.5	10.5
17	2.5	.0	1.0	4.0	2.0	3.0	11.5	6.5	8.5	13.5	9.5	11.0
18	3.0	.0	1.0	5.0	2.5	3.5	12.0	7.0	9.5	14.0	10.0	11.5
19	2.0	.0	.5	6.5	3.0	4.5	12.0	8.5	9.5	11.5	9.5	10.5
20	1.0	.0	.5	6.0	2.0	4.0	11.0	7.5	9.5	13.5	9.0	10.5
21	3.0	.5	1.5	7.0	2.0	4.0	12.5	7.5	9.5	12.5	10.0	11.0
22	4.5	1.0	2.5	8.5	3.0	5.5	10.0	8.0	9.0	14.5	10.0	12.0
23	3.5	1.0	2.0	7.5	4.5	5.5	8.5	6.5	7.5	12.5	10.0	11.5
24	2.0	1.5	2.0	8.5	3.5	5.5	9.5	5.0	7.0	12.5	9.0	10.5
25	3.5	1.0	2.0	7.5	3.0	5.0	7.0	4.5	6.0	13.0	9.5	11.0
26	3.0	.5	1.5	9.5	4.5	6.5	11.0	5.5	7.5	12.0	10.0	11.0
27	3.5	1.5	2.5	10.0	4.0	7.0	13.5	7.0	10.0	12.0	9.0	10.5
28	4.0	2.0	3.0	8.0	5.5	7.0	11.5	8.5	10.5	13.0	10.0	11.5
29	4.0	.5	2.0	6.5	4.5	5.0	9.0	6.5	7.5	12.5	10.5	11.5
30	---	---	---	7.5	3.5	5.5	11.5	5.5	8.0	11.0	9.0	10.0
31	---	---	---	9.0	3.5	6.0	---	---	---	10.0	9.0	9.5
MONTH	4.5	0.0	1.5	10.0	0.5	4.5	13.5	3.0	8.0	14.5	5.5	10.0

		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.5	8.5	10.0	19.0	13.5	16.0	23.0	17.0	19.5	15.5	13.0	14.5
2	14.5	9.0	11.5	19.0	13.5	16.0	22.0	16.0	19.0	14.0	12.5	13.5
3	15.0	11.0	13.0	16.0	12.5	13.5	19.5	15.5	17.5	13.5	10.0	12.0
4	16.0	11.0	13.5	15.5	10.0	12.5	19.0	15.5	17.0	14.0	10.5	12.0
5	14.0	11.5	13.0	14.0	10.5	12.0	20.0	14.0	17.0	14.0	11.5	12.5
6	16.0	11.5	13.5	16.0	11.5	13.0	21.0	14.5	17.5	12.5	11.0	11.5
7	17.5	12.0	14.5	15.5	11.0	13.0	20.5	14.5	17.5	15.0	9.5	12.0
8	16.5	13.0	15.0	17.0	11.0	13.5	20.5	14.0	17.0	14.5	10.5	12.5
9	14.0	11.5	12.5	18.0	12.0	15.0	18.0	14.0	16.5	13.5	10.5	12.0
10	12.0	10.0	11.0	19.0	12.5	15.5	16.5	14.5	15.5	12.0	10.5	11.5
11	12.5	9.5	11.0	19.0	12.0	15.5	18.5	14.0	16.0	14.0	11.0	12.0
12	12.0	10.5	11.5	19.5	13.0	16.0	19.0	12.5	15.5	15.5	10.5	12.5
13	12.5	10.5	11.5	20.5	13.5	16.5	19.0	13.5	16.0	17.0	12.0	14.0
14	13.5	11.5	12.0	20.5	14.0	17.0	19.0	12.5	15.5	17.0	12.5	14.5
15	13.5	11.5	12.5	18.5	14.0	16.0	17.5	12.5	15.0	17.5	12.5	15.0
16	14.0	10.5	12.5	18.5	12.0	15.0	18.5	12.5	15.0	18.0	13.5	15.5
17	15.5	10.5	13.0	19.0	13.5	16.0	17.5	12.0	14.5	18.0	13.5	15.5
18	16.0	11.5	14.0	18.0	14.0	16.0	17.0	12.5	14.5	15.5	13.5	14.5
19	16.0	12.0	13.5	19.0	13.5	16.0	17.5	12.0	14.5	14.5	12.5	13.5
20	15.5	11.5	13.0	20.5	15.0	17.5	18.0	12.5	15.0	12.5	10.0	11.0
21	17.5	11.5	14.0	21.5	14.5	17.5	17.5	11.5	14.5	10.5	8.0	10.0
22	18.0	13.0	15.0	20.0	15.0	17.5	17.0	11.5	14.0	8.0	6.0	6.5
23	17.0	12.5	14.5	21.0	15.0	17.5	17.5	12.0	14.5	8.5	4.5	6.5
24	17.5	12.0	14.5	20.5	14.0	17.0	16.5	14.0	15.0	9.5	5.0	7.0
25	19.0	13.0	15.5	21.0	14.0	17.0	19.0	13.5	16.0	11.0	6.0	8.0
26	18.5	12.5	15.5	21.0	15.0	17.5	18.5	13.0	15.5	11.5	6.5	9.0
27	19.0	12.5	15.5	22.0	15.5	18.5	17.5	12.5	15.0	11.5	7.0	9.0
28	19.0	12.5	15.5	22.0	15.0	18.5	17.0	12.0	14.0	11.5	7.5	9.5
29	18.0	13.5	15.5	22.0	15.5	18.5	16.0	11.0	13.5	11.5	8.0	10.0
30	19.0	12.0	15.5	22.0	16.0	19.0	16.0	12.5	14.0	11.5	10.0	10.5
31	---	---	---	22.0	16.5	19.0	16.0	11.5	13.5	---	---	---
MONTH	19.0	8.5	13.5	22.0	10.0	16.0	23.0	11.0	15.5	18.0	4.5	11.5

PEND OREILLE RIVER BASIN

12334550 CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MT

(National water-quality assessment program)

LOCATION.--Lat 46°49'34", long 113°48'48", in $SW^1/_4NW^1/_4SW^1/_4$ sec. 1, T.12 N., R.18 W., Missoula County, Hydrologic Unit 17010201, on left bank 0.8 mi southeast of Turah, 4 mi southeast of Bonner, and at river mile 370.2.
DRAINAGE AREA.--3,641 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year. Water-discharge records for the period March 1985 to September 1985 are available in files of the Helena district office.
GAGE.--Water-stage recorder. Elevation of gage is 3,320 ft, from topographic map. Prior to May 9, 1986, non-recording gage at same site at datum 2.00 ft higher.
REMARKS.--Water-discharge records good. Some regulation by settling ponds on Silver Bow Creek near Anaconda and by Georgetown Lake (station number 12325000) on Flint Creek. Diversions for irrigation of about 100,000 acres upstream from station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	697	883	889	e650	540	984	836	1120	1460	568	271	282
2	712	861	874	784	812	954	838	1150	1320	570	264	309
3	719	842	851	743	1130	936	846	1200	1190	580	258	318
4	718	864	778	702	955	950	833	1240	1130	597	258	324
5	719	862	676	763	838	977	907	1280	1120	623	260	338
6	731	853	760	747	846	982	978	1240	1130	632	261	372
7	746	862	859	721	837	961	942	1180	1110	623	258	389
8	748	862	828	774	841	947	890	1110	1100	602	255	393
9	783	857	e750	788	871	927	873	1100	1090	596	253	398
10	775	844	786	745	896	883	884	1080	1070	575	257	401
11	801	837	807	723	836	868	917	1070	1070	542	264	428
12	811	831	827	728	775	857	944	1010	1050	525	265	437
13	823	852	848	677	825	833	1020	952	1040	535	264	434
14	811	833	809	661	817	827	1150	910	1030	537	259	428
15	804	829	785	818	817	812	1170	893	1010	511	257	417
16	818	819	832	811	801	797	1130	897	1040	490	253	410
17	828	824	854	814	754	798	1120	930	1020	480	254	416
18	837	844	865	776	708	788	1120	968	975	470	263	415
19	841	847	869	734	684	792	1160	1000	921	463	266	414
20	830	836	850	743	669	790	1190	1060	904	457	270	422
21	821	846	843	776	728	765	1220	1080	869	450	273	453
22	811	818	838	796	800	756	1260	1150	819	436	276	468
23	801	796	766	785	869	782	1330	1260	775	419	291	488
24	804	767	689	781	922	799	1340	1280	738	401	299	498
25	804	851	634	752	880	773	1250	1220	711	384	314	501
26	816	978	575	788	824	770	1190	1190	679	365	312	504
27	844	1030	528	779	802	802	1140	1180	661	351	300	499
28	920	957	e440	762	930	879	1120	1200	642	335	286	497
29	958	898	e420	685	1070	953	1220	1350	622	319	284	499
30	934	884	436	581	---	893	1190	1280	591	305	280	520
31	904	---	e450	509	---	843	---	1330	---	284	280	---
TOTAL	24969	25767	23016	22896	24077	26678	32008	34910	28887	15025	8405	12672
MEAN	805	859	742	739	830	861	1067	1126	963	485	271	422
MAX	958	1030	889	818	1130	984	1340	1350	1460	632	314	520
MIN	697	767	420	509	540	756	833	893	591	284	253	282
AC-FT	49530	51110	45650	45410	47760	52920	63490	69240	57300	29800	16670	25130

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2000, BY WATER YEAR (WY)

MEAN	867	861	753	731	892	1062	1535	2592	2912	1300	646	711
MAX	1287	1173	1233	1149	2124	1664	3072	6345	7090	2920	1423	1423
(WY)	1998	1998	1996	1997	1996	1986	1996	1997	1997	1998	1993	1993
MIN	592	616	492	474	472	712	828	915	639	485	271	357
(WY)	1993	1993	1993	1993	1989	1991	1991	1992	1992	2000	2000	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1986 - 2000	
ANNUAL TOTAL	484267		279310			
ANNUAL MEAN	1327		763		1238	
HIGHEST ANNUAL MEAN					2219	1997
LOWEST ANNUAL MEAN					686	1992
HIGHEST DAILY MEAN	6440	Jun 5	1460	Jun 1	9530	Jun 2 1997
LOWEST DAILY MEAN	420	Dec 29	253	Aug 9	200	Dec 21 1998
ANNUAL SEVEN-DAY MINIMUM	498	Dec 25	257	Aug 4	224	Aug 15 1992
INSTANTANEOUS PEAK FLOW			1510	Jun 1	b12400	Feb 9 1996
INSTANTANEOUS PEAK STAGE			5.19	Jun 1	c10.24	Dec 10 1995
INSTANTANEOUS LOW FLOW			a246	Aug 9		
ANNUAL RUNOFF (AC-FT)	960500		554000		897100	
10 PERCENT EXCEEDS	2500		1120		2400	
50 PERCENT EXCEEDS	869		808		860	
90 PERCENT EXCEEDS	648		319		502	

a--Gage height, 3.51 ft.
b--Gage height, 9.05 ft.
c--Backwater from ice.
e--Estimated.

PEND OREILLE RIVER BASIN

12334550 CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MT--Continued

(National water quality assessment program station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1985 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1991 to September 1998.
SUSPENDED-SEDIMENT DISCHARGE: March 1985 to current year.

REMARKS.-- In addition to the long-term monitoring program for Supefund, sampling also was conducted as part of the Northern Rockies Intermontane Basins study of the USGS National Water-Quality Assessment program. Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.0°C, Aug. 17, 1992; minimum, 0.0°C, on many days during winter.
SEDIMENT CONCENTRATION: Maximum daily mean, 1,140 mg/L, Feb. 25, 1986; minimum daily mean, 1 mg/L, Sep. 12, 1987.
SEDIMENT LOAD: Maximum daily, 24,400 tons, Feb. 25, 1986; minimum daily 1.1 tons, Sep. 12, 1987.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 54 mg/L, Feb. 3; minimum daily mean, 2 mg/L, on several days in December 1999 and August 2000.
SEDIMENT LOAD: Maximum daily, 165 tons, Feb. 3; minimum daily, 1.4 tons, Aug. 18, 19.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
17...	1345	831	8.6	390	5.0	5.0	180	49	13
MAR 2000									
07...	1220	963	8.5	369	11.0	6.0	170	47	12
APR									
05...	1210	907	8.5	365	11.5	7.5	160	45	12
MAY									
10...	1040	1080	8.4	234	11.5	9.0	100	29	7.6
23...	1155	1230	8.3	201	17.5	12.5	88	24	6.6
JUN									
05...	1325	1100	8.5	245	35.0	16.0	110	29	8.0
JUL									
21...	1550	452	8.8	310	34.0	21.5	140	39	11
SEP									
05...	1645	342	8.7	359	23.0	15.0	160	44	12

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
17...	6	6	<.1	E.06	2	7	<10	101	<1
MAR 2000									
07...	5	7	<.1	E.08	3	12	<10	252	<1
APR									
05...	5	5	<.1	<.1	2	8	<10	212	<1
MAY									
10...	3	3	<.1	<.1	2	4	<10	104	<1
23...	3	3	<.1	<.1	2	5	12	211	<1
JUN									
05...	4	4	<.1	<.1	2	6	<10	131	<1
JUL									
21...	5	6	<.1	<.1	2	5	<10	85	<1
SEP									
05...	5	5	<.1	<.1	2	3	E7	50	<1

E--Estimated.

12334550 CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
17...	E1	3	28	3	<31	5	11	89
MAR 2000								
07...	2	9	43	6	30	14	36	84
APR								
05...	1	7	37	4	14	14	34	81
MAY								
10...	<1	4	14	3	6	5	15	78
23...	<1	4	21	4	11	14	46	74
JUN								
05...	<1	4	27	4	7	9	27	79
JUL								
21...	<1	5	25	2	8	9	11	82
SEP								
05...	<1	3	13	1	6	5	4.6	89

E--Estimated.

NAWQA WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 1999											
20...	1030	841	685	100	11.4	7.5	375	9.5	5.3	180	52
DEC											
03...	1100	852	684	102	12.5	7.9	377	1.5	2.5	180	51
JAN 2000											
26...	0945	770	676	102	12.6	8.0	390	--	1.8	180	50
MAR											
08...	1045	929	678	99	11.3	8.2	355	3.0	4.8	170	47
APR											
12...	0900	952	678	90	9.3	8.1	330	7.3	8.8	150	41
MAY											
25...	0830	1230	674	93	9.1	8.0	198	17.0	10.8	93	26
JUN											
21...	1015	884	677	100	9.4	8.4	275	14.0	13.0	120	33
JUL											
31...	1045	287	678	118	9.7	8.4	301	28.5	19.2	150	39
AUG											
29...	1100	287	676	113	10.5	8.3	344	20.5	12.9	160	43

DATE	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	POTAS-SIUM, TOTAL RECOV-ERABLE (MG/L AS K) (00937)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM, TOTAL RECOV-ERABLE (MG/L AS NA) (00929)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
OCT 1999										
20...	51.0	13	13.1	2.7	2.8	.3	9.9	9.8	138	168
DEC										
03...	51.7	13	13.3	2.5	2.6	.3	10	10.3	130	159
JAN 2000										
26...	51.7	13	13.6	2.3	2.7	.3	10	10.7	148	180
MAR										
08...	48.7	12	12.4	2.5	2.8	.3	9.7	9.4	133	162
APR										
12...	42.3	11	10.9	2.3	2.0	.3	8.2	8.0	117	142
MAY										
25...	24.2	7.0	6.5	1.5	1.5	.2	4.4	4.4	74	90
JUN										
21...	33.8	9.2	9.5	2.1	2.1	.3	6.9	6.4	102	124
JUL										
31...	36.0	12	10.7	2.2	2.1	.3	7.0	6.6	110	134
AUG										
29...	43.2	12	12.6	2.4	2.5	.3	8.1	7.8	123	150

12334550 CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MT--Continued

NAWQA WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)
OCT 1999											
20...	.000	4.2	.4	18	57	E.10	.2	<.002	.009	.001	.012
DEC											
03...	.000	7.1	.4	16	60	E.05	.2	<.002	.10	.001	.012
JAN 2000											
26...	.000	4.3	.4	16	62	E.06	E.08	.002	.14	.002	.008
MAR											
08...	.000	3.6	.3	14	54	E.09	.3	<.002	.028	.001	.015
APR											
12...	.000	3.2	.4	13	47	.1	.3	.005	.013	<.001	.013
MAY											
25...	.000	1.8	.2	11	22	E.07	.2	.003	<.005	<.001	.009
JUN											
21...	.360	2.9	.3	10	33	.1	.3	.003	.008	.001	.008
JUL											
31...	.000	3.4	.3	13	43	.1	.2	.010	.021	<.001	E.005
AUG											
29...	.480	3.3	.3	13	51	<.1	.1	.007	.014	<.001	E.004

DATE	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)
OCT 1999											
20...	.008	.029	1.7	.8	.34	561	247	239	6	107	<1
DEC											
03...	.005	.023	1.3	.3	.33	561	244	240	<1	75	<1
JAN 2000											
26...	.005	.023	1.1	.4	.34	518	249	247	5	97	<1
MAR											
08...	.0130	.043	--	--	.31	569	227	224	--	196	<1
APR											
12...	.0060	.038	--	--	.29	540	210	197	1	218	<1
MAY											
25...	.0100	.023	--	--	.17	408	123	119	11	209	<1
JUN											
21...	<.001	.017	--	--	.24	422	177	160	9	57	<1
JUL											
31...	.0040	.014	--	--	.27	151	195	186	21	55	<1
AUG											
29...	.0010	.012	--	--	.29	167	216	208	<1	36	<1

DATE	ANTIMONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)
OCT 1999											
20...	<1	6	7	85	80	<1	<5	--	<1	<.1	<.8
DEC											
03...	<1	7	6	76	75	<1	<5	--	<1	<.1	<1.0
JAN 2000											
26...	<1	5	5	78	78	<1	<5	--	<1	<.1	<.8
MAR											
08...	<1	5	6	72	77	<1	<5	--	<1	<.1	<1
APR											
12...	<1	5	6	79	79	<1	<5	--	<1	E.08	<.8
MAY											
25...	<1	3	3	67	71	<1	<5	E10	<1	<.1	<.8
JUN											
21...	<1	4	4	81	79	<1	<5	15	<1	<.1	<.8
JUL											
31...	<1	4	4	95	94	<1	<5	16	<1	<.1	<.8
AUG											
29...	<1	4	5	94	94	<1	<5	21	<1	<.1	<.8

E--Estimated.

12334550 CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MT--Continued

NAWQA WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, DISSOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)
OCT 1999											
20...	<1	<1	<2	2	<20	<10	143	<1	1	--	10
DEC											
03...	<1	<1	<2	2	<20	<10	117	<1	1	--	12
JAN 2000											
26...	<1	<1	<2	3	<20	<10	129	<1	1	--	10
MAR											
08...	<1	<1	<2	3	<20	E9	224	<1	2	--	12
APR											
12...	<1	<1	<2	3	E13	E8	260	<1	2	--	10
MAY											
25...	<1	<1	<2	4	<20	12	218	<1	E.5	6	E7
JUN											
21...	<1	<1	<2	2	<20	<10	86	<1	E.5	7	E7
JUL											
31...	<1	<1	<2	2	<20	<10	79	<1	E.5	8	E7
AUG											
29...	<1	<1	<2	2	<20	E6	42	<1	<1	11	10

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DISSOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)
OCT 1999											
20...	4	48	--	2	3	<1	<2	<2	<3	<1	<1
DEC											
03...	3	30	<.3	2	2	<1	<2	<2	<3	<1	<1
JAN 2000											
26...	5	29	<.3	2	2	2	<2	<2	<3	<1	<1
MAR											
08...	8	40	<.3	2	2	<1	<2	<2	<3	<1	<1
APR											
12...	8	48	<.3	2	2	<1	<2	<2	<3	<1	<1
MAY											
25...	4	21	<.3	1	1	<1	<2	<.7	<3	<1	<1
JUN											
21...	5	22	<.3	2	2	<1	<2	<.7	<3	<1	<1
JUL											
31...	6	24	<.3	2	2	<1	<2	<.7	<3	<1	<1
AUG											
29...	4	12	<.3	2	2	<1	<2	<.7	<3	<1	<1

DATE	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR) (01082)	THALLIUM, DISSOLVED (UG/L AS TL) (01057)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999										
20...	--	246	--	--	4	<31	4	9	20	91
DEC										
03...	--	277	--	--	4	<31	5	6	14	95
JAN 2000										
26...	--	260	--	--	6	<31	6	--	--	--
MAR										
08...	--	237	--	--	7	E22	5	14	35	82
APR										
12...	--	202	--	--	4	E28	3	16	41	83
MAY										
25...	120	117	<.9	<1	4	<31	1	13	43	63
JUN										
21...	182	165	<.9	2	4	<31	2	6	14	74
JUL										
31...	201	189	<.9	<1	6	E17	2	7	5.4	67
AUG										
29...	233	225	<.9	<1	2	<31	2	4	3.1	77

E--Estimated.

PEND OREILLE RIVER BASIN

12334550 CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MT--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	5	9.4	12	29	8	19	10	18	6	8.7	24	64
2	5	9.6	10	23	7	17	10	21	29	64	18	46
3	6	12	10	23	6	14	10	20	54	165	16	40
4	6	12	9	21	6	13	9	17	27	70	16	41
5	6	12	8	19	5	9.1	8	16	11	25	18	47
6	8	16	8	18	6	12	8	16	9	21	22	58
7	10	20	8	19	7	16	7	14	13	29	18	47
8	12	24	8	19	6	13	6	13	23	52	14	36
9	14	30	8	19	5	10	5	11	30	71	15	38
10	14	29	8	18	6	13	5	10	27	65	15	36
11	14	30	9	20	8	17	4	7.8	20	45	14	33
12	14	31	10	22	9	20	4	7.9	14	29	12	28
13	14	31	10	23	8	18	4	7.3	11	25	12	27
14	13	28	10	22	8	17	4	7.1	11	24	9	20
15	12	26	9	20	7	15	10	22	10	22	9	20
16	11	24	9	20	6	13	8	18	10	22	7	15
17	10	22	6	13	6	14	10	22	10	20	8	17
18	10	23	4	9.1	7	16	8	17	9	17	8	17
19	9	20	4	9.1	6	14	5	9.9	10	18	9	19
20	9	20	5	11	7	16	4	8.0	11	20	7	15
21	9	20	6	14	7	16	4	8.4	12	24	7	14
22	9	20	5	11	6	14	4	8.6	14	30	6	12
23	8	17	4	8.6	4	8.3	4	8.5	14	33	10	21
24	8	17	5	10	2	3.7	5	11	15	37	10	22
25	8	17	8	18	2	3.4	5	10	16	38	9	19
26	8	18	13	34	2	3.1	4	8.5	13	29	10	21
27	10	23	15	42	2	2.9	5	11	12	26	13	28
28	16	40	11	28	3	3.6	7	14	14	35	17	40
29	18	47	8	19	3	3.4	7	13	32	92	17	44
30	16	40	8	19	4	4.7	6	9.4	---	---	11	27
31	14	34	---	---	5	6.1	5	6.9	---	---	10	23
TOTAL	---	722.0	---	580.8	---	365.3	---	392.3	---	1156.7	---	935

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12	27	12	36	18	71	5	7.7	5	3.7	4	3.0
2	12	27	15	47	14	50	5	7.7	5	3.6	4	3.3
3	11	25	14	45	11	35	6	9.4	5	3.5	4	3.4
4	13	29	16	54	8	24	6	9.7	5	3.5	4	3.5
5	16	39	17	59	9	27	6	10	5	3.5	5	4.6
6	21	55	12	40	10	31	7	12	5	3.5	7	7.0
7	15	38	12	38	10	30	7	12	5	3.5	9	9.5
8	14	34	9	27	12	36	7	11	5	3.4	10	11
9	15	35	8	24	10	29	7	11	5	3.4	10	11
10	15	36	8	23	9	26	8	12	5	3.5	10	11
11	17	42	23	66	11	32	8	12	5	3.6	10	12
12	18	46	7	19	9	26	9	13	5	3.6	9	11
13	26	72	5	13	9	25	9	13	5	3.6	9	11
14	33	102	5	12	7	19	9	13	5	3.5	9	10
15	29	92	5	12	6	16	9	12	4	2.8	9	10
16	22	67	5	12	7	20	9	12	4	2.7	9	10
17	22	67	7	18	7	19	8	10	3	2.1	9	10
18	22	67	8	21	6	16	8	10	2	1.4	8	9.0
19	24	75	8	22	7	17	8	10	2	1.4	8	8.9
20	24	77	10	29	6	15	8	9.9	2	1.5	7	8.0
21	26	86	12	35	4	9.4	8	9.7	3	2.2	7	8.6
22	28	95	14	43	4	8.8	8	9.4	4	3.0	7	8.8
23	29	104	22	75	4	8.4	8	9.1	4	3.1	8	11
24	27	98	19	66	5	10	7	7.6	5	4.0	8	11
25	22	74	13	43	5	9.6	7	7.3	5	4.2	9	12
26	16	51	12	39	5	9.2	6	5.9	5	4.2	9	12
27	17	52	12	38	6	11	6	5.7	4	3.2	9	12
28	16	48	13	42	6	10	6	5.4	4	3.1	10	13
29	17	56	18	66	5	8.4	6	5.2	4	3.1	11	15
30	12	39	12	41	6	9.6	6	4.9	3	2.3	12	17
31	---	---	14	50	---	---	6	4.6	4	3.0	---	---
TOTAL	---	1755	---	1155	---	658.4	---	292.2	---	96.7	---	287.6

TOTAL LOAD FOR YEAR: 8,397.0 tons

PEND OREILLE RIVER BASIN

12335100 BLACKFOOT RIVER ABOVE NEVADA CREEK, NEAR HELMVILLE, MT

LOCATION.--Lat 46°55'09", long 113°00'53", in $SW^1/_4SW^1/_4SE^1/_4$ sec. 32, T.14 N., R.11 W., Powell County, Hydrologic Unit 17010203, on right bank 40 ft downstream from county road bridge, 1.9 mi south of Browns Lake, 4.2 mi upstream from Nevada Creek, 4.4 mi northwest of Helmville, and at river mile 72.0.

DRAINAGE AREA.--494 mi^2.

PERIOD OF RECORD.--October 1999 to September 2000. Records equivalent to those published as "12335000 Blackfoot River near Helmville," September 1940 to October 1953 at site 13.5 mi upstream.

GAGE.--Water-stage recorder. Elevation of gage is 4,280 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Numerous diversions for irrigation 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 June 5, 1953 reached a discharge of 6,040 ft^3/s at 12335000 Blackfoot River near Helmville.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	179	191	e170	e130	140	191	501	720	372	172	137
2	172	176	187	e160	e150	140	195	540	656	364	166	142
3	173	175	183	e160	e140	142	193	643	612	354	164	152
4	174	176	177	e160	e130	145	189	728	586	353	158	154
5	173	175	e170	e170	e140	150	197	801	586	340	159	165
6	173	174	e170	e150	148	150	204	802	598	331	164	166
7	171	173	170	e160	146	150	197	760	623	312	159	166
8	162	173	169	e170	146	151	187	720	646	306	157	162
9	171	173	166	e170	148	149	184	701	672	303	155	163
10	190	171	166	e160	150	147	186	697	659	304	155	165
11	181	170	165	e160	144	146	190	672	627	294	159	174
12	179	170	166	e150	e130	144	191	630	588	283	157	173
13	181	169	166	e140	e130	142	210	598	573	278	155	166
14	173	167	164	e150	e135	142	244	560	560	270	155	164
15	172	166	168	e160	e140	142	241	548	643	260	153	161
16	177	166	168	e160	141	142	230	539	777	252	150	156
17	175	167	168	e150	e135	143	223	553	719	246	149	155
18	171	175	169	e150	e130	141	226	585	666	240	149	152
19	168	174	167	e150	e130	141	232	615	622	234	149	155
20	170	172	162	e150	e130	140	241	665	605	233	147	156
21	171	171	162	e150	e135	140	249	670	566	230	147	160
22	170	169	161	e160	e135	141	304	685	523	220	147	158
23	171	167	160	e150	138	147	403	707	501	214	148	158
24	172	167	158	146	140	151	477	734	482	208	145	159
25	171	179	e155	148	140	153	480	732	467	203	147	158
26	171	226	e150	144	136	160	466	727	451	191	145	158
27	180	263	e150	144	136	177	438	731	429	192	143	156
28	187	225	e150	142	138	209	434	727	414	187	143	147
29	194	205	e150	142	140	215	466	739	397	184	143	147
30	188	194	e150	e130	---	201	491	730	381	182	134	151
31	181	---	e160	e120	---	193	---	744	---	177	135	---
TOTAL	5435	5407	5118	4726	4011	4774	8359	20784	17349	8117	4709	4736
MEAN	175	180	165	152	138	154	279	670	578	262	152	158
MAX	194	263	191	170	150	215	491	802	777	372	172	174
MIN	162	166	150	120	130	140	184	501	381	177	134	137
AC-FT	10780	10720	10150	9370	7960	9470	16580	41230	34410	16100	9340	9390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2000, BY WATER YEAR (WY)

MEAN	175	180	165	152	138	154	279	670	578	262	152	158
MAX	175	180	165	152	138	154	279	670	578	262	152	158
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
MIN	175	180	165	152	138	154	279	670	578	262	152	158
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 2000 WATER YEAR	
ANNUAL TOTAL	93525	
ANNUAL MEAN	256	
HIGHEST DAILY MEAN	802	May 6
LOWEST DAILY MEAN	120	Jan 31
ANNUAL SEVEN-DAY MINIMUM	133	Feb 17
INSTANTANEOUS PEAK FLOW	820	May 6
INSTANTANEOUS PEAK STAGE	5.30	May 6
INSTANTANEOUS LOW FLOW	a101	Feb 11
ANNUAL RUNOFF (AC-FT)	185500	
10 PERCENT EXCEEDS	607	
50 PERCENT EXCEEDS	170	
90 PERCENT EXCEEDS	142	

a--Gage height, 3.26 ft.
e--Estimated.

PEND OREILLE RIVER BASIN

12335500 NEVADA CREEK ABOVE RESERVOIR, NEAR FINN, MT

LOCATION.--Lat 46°46'42", long 112°46'00", in SW1/4NW1/4SW1/4 sec.20, T.12 N., R.9 W., Powell County, Hydrologic Unit 17010203, on right bank 0.7 mi upstream from Nevada Lake, 1.1 mi downstream from Gallagher Creek, 4.0 mi west of Finn, 11 mi southeast of Helmville, and at river mile 34.5.

DRAINAGE AREA.--116 mi2.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Elevation of gage is 4,640 ft above sea level, from topographic map. Prior to Apr. 30, 1942, nonrecording gage at site 0.1 mi, downstream at different datum. Apr. 30, 1942 to July 26, 1953, water-stage recorder at site 0.2 mi downstream at different datum. July 26, 1953, to Nov. 6, 1978, water-stage recorder at site 0.8 mi upstream at different datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 2,900 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	15	e17	e12	e10	e15	36	38	50	15	7.6	6.6
2	11	15	e16	e11	e14	e14	40	39	39	18	7.7	7.1
3	11	15	e16	e11	e12	e16	32	51	32	18	7.6	7.8
4	11	16	e15	e11	e10	e14	48	58	28	19	8.1	9.0
5	11	16	e14	e12	e11	e15	62	59	25	17	8.4	10
6	11	16	e14	e10	e13	e15	45	63	25	18	7.7	11
7	11	16	e14	e11	e13	e15	38	50	23	17	6.5	9.1
8	11	16	e13	e12	e13	e15	34	46	22	16	6.0	8.0
9	13	15	e13	e11	e12	e14	37	49	23	18	6.9	8.1
10	12	15	e13	e11	e11	e14	41	60	23	15	8.6	8.6
11	12	15	e15	e11	e10	e15	43	48	24	14	8.3	11
12	12	15	e17	e10	e12	e15	45	44	24	13	6.4	9.3
13	12	15	e16	e9.0	e13	e15	61	39	26	13	5.8	8.2
14	13	14	e16	e11	e14	e16	61	34	25	13	5.4	7.6
15	13	14	e18	e12	e14	e15	50	32	47	14	5.4	7.3
16	14	14	e20	e12	e12	e14	43	28	39	13	5.5	7.2
17	13	15	e19	e11	e10	16	46	30	30	13	6.5	7.2
18	13	17	e18	e10	e11	17	50	35	25	12	4.7	7.0
19	14	16	e18	e10	e10	18	54	45	27	12	4.3	7.5
20	14	16	e17	e10	e11	18	56	51	30	12	4.1	8.0
21	14	15	e18	e11	e13	17	54	48	25	11	3.9	9.1
22	14	e14	e18	e12	e15	23	57	49	23	10	4.3	8.8
23	15	e13	e16	e11	e17	32	59	50	20	9.4	4.3	9.5
24	15	e18	e14	e10	e19	29	59	52	18	9.0	4.4	9.4
25	15	e20	e12	e11	e17	36	54	50	18	8.6	5.1	9.6
26	15	33	e10	e12	e17	67	50	46	18	8.7	4.7	9.3
27	20	28	e11	e12	e18	87	42	43	16	8.0	4.8	9.1
28	22	19	e10	e12	e15	90	41	46	16	7.5	5.1	9.1
29	21	e19	e10	e10	e14	50	45	44	13	7.4	4.8	9.1
30	17	e18	e10	e9.0	---	34	44	51	14	7.2	5.9	9.6
31	15	---	e11	e8.0	---	34	---	64	---	6.9	6.4	---
TOTAL	426	503	459	336.0	381	805	1427	1442	768	393.7	185.2	258.2
MEAN	13.7	16.8	14.8	10.8	13.1	26.0	47.6	46.5	25.6	12.7	5.97	8.61
MAX	22	33	20	12	19	90	62	64	50	19	8.6	11
MIN	11	13	10	8.0	10	14	32	28	13	6.9	3.9	6.6
AC-FT	845	998	910	666	756	1600	2830	2860	1520	781	367	512

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2000, BY WATER YEAR (WY)

MEAN	14.0	14.7	12.5	11.7	16.0	34.0	67.9	114	91.3	27.9	14.4	10.4
MAX	32.2	28.8	47.4	54.5	84.6	114	196	356	429	96.5	40.5	28.2
(WY)	1960	1976	1976	1984	1986	1978	1952	1976	1975	1955	1975	1965
MIN	5.52	5.73	3.74	3.83	4.17	7.61	10.0	16.0	11.5	6.19	3.89	3.68
(WY)	1940	1989	1993	1988	1944	1962	1941	1977	1992	1985	1961	1940

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1939 - 2000	
ANNUAL TOTAL	12778.8		7384.1			
ANNUAL MEAN	35.0		20.2		36.0	
HIGHEST ANNUAL MEAN					77.2	1975
LOWEST ANNUAL MEAN					11.8	1988
HIGHEST DAILY MEAN	247	Jun 4	90	Mar 28	1240	May 22 1981
LOWEST DAILY MEAN	7.2	Sep 24	3.9	Aug 21	2.0	Jan 11 1944
ANNUAL SEVEN-DAY MINIMUM	7.6	Sep 20	4.3	Aug 18	2.0	Feb 9 1944
INSTANTANEOUS PEAK FLOW			138	Mar 27	b1800	Jun 2 1953
INSTANTANEOUS PEAK STAGE			2.47	Mar 27	c7.40	May 29 1953
INSTANTANEOUS LOW FLOW			a3.1	Aug 20	d2.0	Aug 20 1944
ANNUAL RUNOFF (AC-FT)	25350		14650		26090	
10 PERCENT EXCEEDS	72		46		89	
50 PERCENT EXCEEDS	17		14		15	
90 PERCENT EXCEEDS	11		7.6		6.4	

a--Gage height, 1.19 ft.
b--Gage height, 6.00 ft, site and datum then in use; from rating curve extended above 400 ft^3/s on the basis of inflow-outflow study of Nevada Lake.
c--Site and datum then in use; backwater from diversion dam.
d--Probably less than 2.0 ft^3/s in several years.
e--Estimated.

12335500 NEVADA CREEK ABOVE RESERVOIR, NEAR FINN, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1994 to January 2000 (discontinued).

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
16...	1100	13	279	8.0	1.0	4	.14	85
JAN 2000								
04...	1215	11	260	-6.0	0.0	4	.12	82

464810112490001 NEVADA CREEK BELOW RESERVOIR, NEAR HELMVILLE, MT

LOCATION.--Lat 46°48'10", long 112°49'00", in $SW^1/_4SW^1/_4SE^1/_4$ sec.11, T.12 N., R.10 W., Powell County, Hydrologic Unit 17010203, 0.6 mi downstream from Nevada Lake, 8.3 mi southeast of Helmville, and at river mile 31.1.

PERIOD OF RECORD.--April 1994 to January 2000 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
16...	1150	15	242	10.0	4.0	10	.41	93
JAN 2000								
04...	1410	16	260	-6.0	2.0	15	.64	99

PEND OREILLE RIVER BASIN

12338300 NORTH FORK BLACKFOOT RIVER ABOVE DRY GULCH, NEAR OVANDO, MT

LOCATION.--Lat 46°58'48", long 113°05'25", in NW$^1/_4$SW$^1/_4$SW$^1/_4$ sec.11, T.14 N., R.12 W., Powell County, Hydrologic Unit 17010203, on right bank 400 ft upstream from county road bridge, 0.9 mi upstream from Dry Gulch, 3.2 mi southeast of Ovando, and at river mile 2.5.

DRAINAGE AREA.--314 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,060 ft above sea level, from topographic map.

REMARKS.--Records good. Numerous diversions for irrigation upstream from station. U.S. Geological 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 8, 1964 reached a discharge of 11,800 ft^3/s, from slope-area measurement of peak flow, as determined at North Fork Blackfoot River near Ovando (station 12338000), 9 mi upstream. Flood of about May 22, 1948 reached a discharge of 4,380 ft^3/s, from slope-area measurement of peak flow at same site.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	178	165	150	123	113	116	141	1010	937	446	206	165
2	177	164	149	123	118	116	149	1370	852	434	203	167
3	177	162	149	121	117	116	149	1430	842	420	203	169
4	176	163	145	121	114	116	151	1510	900	410	204	168
5	174	161	137	117	114	116	162	1360	964	389	204	168
6	173	160	141	114	114	116	169	1250	1050	374	200	168
7	171	160	142	114	114	116	170	1130	1100	376	199	167
8	171	160	140	115	114	118	171	1070	1150	359	197	165
9	173	158	137	117	114	117	173	1050	1160	361	196	165
10	173	157	138	116	113	116	182	1020	1020	351	192	168
11	171	156	138	118	113	117	196	932	939	334	192	168
12	171	154	138	118	113	119	220	841	841	322	190	165
13	170	153	138	118	112	120	280	765	857	308	189	161
14	169	152	138	118	113	121	313	734	797	302	185	160
15	169	152	139	118	113	121	303	728	1080	289	185	159
16	170	153	139	119	111	120	305	792	1030	280	183	158
17	169	153	140	118	111	120	357	981	926	276	181	156
18	167	154	140	118	111	119	527	1120	853	270	181	157
19	165	152	139	117	111	121	772	1250	821	268	179	156
20	165	152	139	116	109	119	970	1220	801	264	176	158
21	164	151	139	116	110	119	1100	1260	726	258	176	160
22	162	149	138	117	109	122	1250	1340	681	253	176	161
23	162	149	138	116	109	123	1330	1510	666	251	175	163
24	162	147	137	116	112	123	1140	1420	624	247	174	163
25	162	150	132	116	113	125	967	1380	585	241	173	160
26	160	162	129	117	112	126	837	1350	550	238	170	158
27	163	158	128	116	113	128	796	1260	529	235	170	157
28	166	153	126	116	114	135	963	1260	500	232	170	156
29	173	151	126	116	114	140	1050	1210	475	226	168	156
30	168	150	123	114	---	138	956	1120	467	222	167	156
31	166	---	123	114	---	138	---	1060	---	211	166	---
TOTAL	5237	4661	4255	3633	3268	3777	16249	35733	24723	9447	5730	4858
MEAN	169	155	137	117	113	122	542	1153	824	305	185	162
MAX	178	165	150	123	118	140	1330	1510	1160	446	206	169
MIN	160	147	123	114	109	116	141	728	467	211	166	156
AC-FT	10390	9250	8440	7210	6480	7490	32230	70880	49040	18740	11370	9640

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2000, BY WATER YEAR (WY)

MEAN	170	158	133	110	102	110	379	1264	1297	491	236	182
MAX	183	160	137	117	113	122	542	1372	1940	626	280	197
(WY)	1998	1998	2000	2000	2000	2000	2000	1999	1999	1999	1999	1999
MIN	158	155	130	98.0	86.6	94.7	282	1153	824	305	185	162
(WY)	1999	2000	1998	1999	1999	1999	1998	2000	2000	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1998 - 2000	
ANNUAL TOTAL	166695		121571			
ANNUAL MEAN	457		332		387	
HIGHEST ANNUAL MEAN					456	1999
LOWEST ANNUAL MEAN					332	2000
HIGHEST DAILY MEAN	3870	May 26	1510	May 4	3870	May 26 1999
LOWEST DAILY MEAN	80	Feb 12	109	Feb 20	80	Feb 12 1999
ANNUAL SEVEN-DAY MINIMUM	81	Mar 6	110	Feb 17	81	Mar 6 1999
INSTANTANEOUS PEAK FLOW			1590	May 4	4280	May 26 1999
INSTANTANEOUS PEAK STAGE			4.46	May 4	5.75	May 26 1999
INSTANTANEOUS LOW FLOW			a109	Feb 17		
ANNUAL RUNOFF (AC-FT)	330600		241100		280200	
10 PERCENT EXCEEDS	1330		990		1050	
50 PERCENT EXCEEDS	171		165		170	
90 PERCENT EXCEEDS	88		116		105	

a--Gage height, 2.44 ft.

PEND OREILLE RIVER BASIN

12340000 BLACKFOOT RIVER NEAR BONNER, MT

LOCATION.--Lat 46°53'59", long 113°45'20", in $SE^1/_4SE^1/_4NW^1/_4$ sec.9, T.13 N., R.17 W., Missoula County, Hydrologic Unit 17010203, Lolo National Forest, on right bank 5.0 mi downstream from Union Creek, 5.6 mi northeast of Bonner, and at river mile 7.9.

DRAINAGE AREA.--2,290 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to November 1898, March 1899 to September 1901, May 1903 to January 1905, March to October 1905, October 1939 to current year. Monthly discharge only for some periods, published in WSP 1316. Published as "at Bonner" 1898-99 and as Big Blackfoot near Bonner 1903-05.

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,344.76 ft above sea level. July 7, 1898 to June 30, 1901, and May 15, 1903, to Oct. 31, 1905, nonrecording gage at site 7 mi downstream at different datum. Oct. 4, 1939, to Sept. 30, 1955, nonrecording gage at site 1.3 mi downstream at datum 21.82 ft lower.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Flow slightly regulated by Nevada Creek Reservoir (station number 12336500). Diversions for irrigation of about 20,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	590	647	708	e550	e420	579	1060	3600	3540	1550	614	472
2	587	651	707	617	e480	589	1130	3980	3250	1490	592	500
3	587	654	690	594	e600	603	1150	4400	3040	1450	579	513
4	587	667	634	579	e550	632	1170	4660	2990	1410	583	525
5	585	668	612	584	e560	652	1300	4660	3050	1360	579	529
6	589	659	660	589	e560	688	1430	4450	3170	1320	575	536
7	586	652	653	577	576	707	1450	4200	3280	1290	570	540
8	579	647	627	590	570	714	1430	3950	3380	1220	557	531
9	592	641	599	581	575	713	1440	3800	3480	1210	551	518
10	594	632	613	548	567	696	1520	3720	3340	1170	546	529
11	607	627	612	544	537	687	1690	3540	3130	1140	544	572
12	596	621	614	e500	545	675	1870	3330	2900	1080	557	561
13	597	622	626	e480	e540	671	2380	3120	2810	1050	551	553
14	594	615	614	e500	e540	673	3060	2920	2750	1020	544	546
15	593	608	627	e550	e540	670	3150	2800	2980	972	533	532
16	594	608	641	576	e510	671	3090	2770	3580	937	524	527
17	600	609	649	589	e500	670	3040	2910	3350	908	510	510
18	600	620	655	e570	e480	652	3180	3210	3110	885	508	500
19	591	621	657	e510	e460	695	3570	3470	2890	867	501	493
20	587	625	641	e480	e460	688	3950	3630	2780	842	497	495
21	588	624	638	e500	e480	685	4240	3710	2590	824	494	521
22	584	618	e600	e520	e510	696	4590	3830	2420	808	496	515
23	578	603	e590	e550	541	742	4860	4100	2290	787	496	514
24	579	599	e570	554	546	794	4740	4190	2180	756	494	520
25	583	668	571	575	549	785	4350	4110	2090	734	494	523
26	588	804	536	579	542	815	3950	4040	1990	706	483	521
27	613	889	e460	556	543	896	3610	3930	1890	699	483	514
28	646	841	e440	549	561	1040	3520	3830	1800	679	486	511
29	672	763	e420	e500	572	1150	3610	3800	1710	663	485	502
30	673	720	e420	e440	---	1080	3570	3670	1620	649	485	510
31	659	---	e460	e380	---	1060	---	3670	---	638	466	---
TOTAL	18598	19823	18544	16811	15414	23068	83100	116000	83380	31114	16377	15633
MEAN	600	661	598	542	532	744	2770	3742	2779	1004	528	521
MAX	673	889	708	617	600	1150	4860	4660	3580	1550	614	572
MIN	578	599	420	380	420	579	1060	2770	1620	638	466	472
AC-FT	36890	39320	36780	33340	30570	45760	164800	230100	165400	61710	32480	31010
CFSM	.26	.29	.26	.24	.23	.32	1.21	1.63	1.21	.44	.23	.23
IN.	.30	.32	.30	.27	.25	.37	1.35	1.88	1.35	.51	.27	.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2000, BY WATER YEAR (WY)*

MEAN	662	658	616	559	607	786	2057	4959	4972	1888	846	679
MAX	1547	1480	1555	1069	1668	2351	4727	9802	13610	6557	1921	1250
(WY)	1960	1960	1996	1976	1971	1986	1943	1997	1899	1899	1899	1899
MIN	370	369	332	348	359	435	463	1096	1158	533	365	363
(WY)	1988	1988	1988	1988	1993	1988	1905	1941	1987	1977	1988	1988

12340000 BLACKFOOT RIVER NEAR BONNER, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1898 - 2000*	
ANNUAL TOTAL	604123		457862			
ANNUAL MEAN	1655		1251		1593	
HIGHEST ANNUAL MEAN					2480	1976
LOWEST ANNUAL MEAN					558	1941
HIGHEST DAILY MEAN	8800	May 27	4860	Apr 23	18000	Jun 10 1964
LOWEST DAILY MEAN	415	Jan 25	380	Jan 31	200	Jan 4 1950
ANNUAL SEVEN-DAY MINIMUM	472	Dec 25	469	Dec 26	239	Dec 21 1983
INSTANTANEOUS PEAK FLOW			4930	Apr 23	a19200	Jun 10 1964
INSTANTANEOUS PEAK STAGE			5.77	Apr 23	b16.00	Feb 9 1996
INSTANTANEOUS LOW FLOW					c156	Feb 2 1989
ANNUAL RUNOFF (AC-FT)	1198000		908200		1154000	
ANNUAL RUNOFF (CFSM)	.72		.55		.70	
ANNUAL RUNOFF (INCHES)	9.81		7.44		9.45	
10 PERCENT EXCEEDS	4380		3530		4210	
50 PERCENT EXCEEDS	703		627		748	
90 PERCENT EXCEEDS	531		500		450	

*--During periods of operation (1900-01, 1904, 1940 to current year).
a--Gage height, 10.89 ft.
b--Backwater from ice.
c--Gage height, 1.20 ft, but may have been lower during water year 1989 period of ice affect.
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-59, 1985 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1955 to September 1959, October 1999 to September 2000.
SUSPENDED-SEDIMENT DISCHARGE: July 1986 to April 1987, June 1988 to September 1995.
INSTRUMENTATION.--Temperature recorder installed Aug. 3, 1999
REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 21.0°C, July 23-25, 30, 1956, July 30, 2000, Aug. 1, 2000; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATION: Maximum daily mean, 335 mg/L, May 19, 1991; minimum daily mean, 1 mg/L on many days.
SEDIMENT LOAD: Maximum daily, 8,100 tons, May 19, 1991; minimum daily, 0.54 ton, Feb. 8, 1995.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE : Maximum, 21.0°C, July 30, Aug. 1; minimum, 0.0°C on many days December through February.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV 1999											
18...	0940	621	8.3	273	6.00	4.0	130	34	12	.9	.1
APR 2000											
05...	1440	1330	8.6	213	14.0	9.0	100	27	9.0	--	--
MAY											
23...	1415	4210	8.4	157	17.0	12.0	78	20	6.7	--	--
JUN											
05...	1455	3100	8.4	175	27.0	14.5	86	22	7.5	--	--
JUL											
21...	1720	816	8.7	237	30.5	21.0	120	30	11	.8	.1
SEP											
06...	0930	541	8.5	275	11.0	12.5	130	33	12	--	--

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
NOV 1999											
18...	3.2	140	.9	<.1	10	6.3	151	.21	253	<.001	.006
APR 2000											
05...	--	--	--	--	--	--	--	--	--	--	--
MAY											
23...	--	--	--	--	--	--	--	--	--	<.001	<.005
JUN											
05...	--	--	--	--	--	--	--	--	--	<.001	<.005
JUL											
21...	2.6	123	.6	<.1	8.1	4.2	132	.18	290	<.001	.005
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--

12340000 BLACKFOOT RIVER NEAR BONNER, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, DISSOLVED (UG/L AS FE) (01046)
NOV 1999											
18...	E.08	<.001	<.008	E1	<3	<.1	<.1	<1	<1	<1	<10
APR 2000											
05...	--	--	--	1	<3	<.1	<.1	--	E.8	3	38
MAY											
23...	.2	.003	.021	E.7	<3	<.1	<.1	--	2	2	E9
JUN											
05...	.2	.003	.015	E.8	<3	<.1	<.1	--	<1	2	<10
JUL											
21...	.2	.002	E.007	1	E2	<.1	<.1	<1	<1	<1	E7
SEP											
06...	--	--	--	1	<3	<.1	<.1	--	<1	<1	<10

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999											
18...	26	<1	<1	1	E2	<2	<1	<31	2	3.4	96
APR 2000											
05...	235	<1	<1	3	20	--	3	1	12	43	86
MAY											
23...	214	<1	<1	2	19	--	2	4	18	205	81
JUN											
05...	110	<1	<1	2	12	--	3	<1	9	75	84
JUL											
21...	24	<1	<1	2	6	<2	1	1	1	2.2	90
SEP											
06...	26	<1	<1	<1	5	--	<1	1	2	2.9	92

E--Estimated.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.5	7.5	8.5	5.5	3.5	4.5	3.0	2.0	2.5	.5	.5	.5
2	8.5	6.5	7.5	3.5	2.5	3.0	3.0	2.5	2.5	.5	.5	.5
3	7.5	5.5	6.5	3.5	2.0	3.0	2.5	1.5	2.0	.5	.5	.5
4	8.0	5.0	7.0	5.0	3.5	4.0	1.5	.0	.5	.5	.5	.5
5	8.5	6.0	7.5	3.5	2.5	3.0	.5	.0	.5	.5	.0	.5
6	8.5	7.0	8.0	4.5	3.5	4.0	.5	.0	.5	.5	.0	.5
7	8.5	8.0	8.0	5.0	4.5	4.5	1.5	.5	1.0	.5	.0	.5
8	9.5	8.0	9.0	5.0	4.0	4.5	1.0	.5	1.0	.5	.5	.5
9	10.0	8.5	9.5	4.5	4.0	4.5	.5	.0	.5	.5	.0	.5
10	8.5	7.0	8.0	5.0	3.5	4.5	1.0	.0	.5	.5	.0	.5
11	8.5	6.5	7.5	5.5	4.5	5.0	1.0	.5	1.0	.5	.0	.5
12	9.0	8.0	8.5	6.0	4.5	5.5	2.0	1.0	1.5	.5	.0	.5
13	9.5	8.0	8.5	7.5	6.0	7.0	2.0	1.0	2.0	.5	.0	.5
14	9.5	8.0	9.0	7.5	5.5	6.5	1.5	.5	1.0	.5	.5	.5
15	8.0	6.5	7.5	5.5	4.0	4.5	1.0	.5	1.0	.5	.0	.5
16	6.5	5.5	6.0	4.5	3.0	4.0	2.5	1.0	2.0	.5	.0	.5
17	5.5	4.5	5.0	4.0	3.0	3.5	2.5	2.0	2.5	.5	.0	.5
18	6.5	5.0	6.0	4.5	4.0	4.0	2.5	2.0	2.5	.5	.0	.0
19	6.5	4.5	5.5	4.0	2.5	3.0	2.5	1.0	1.5	.5	.0	.0
20	6.0	4.0	5.5	3.5	2.5	3.0	1.5	1.0	1.5	.5	.0	.5
21	6.5	4.5	5.5	3.0	2.5	3.0	1.5	1.0	1.5	.5	.0	.5
22	6.5	4.5	5.5	3.0	2.5	2.5	1.0	.5	.5	.5	.0	.5
23	6.0	4.5	5.5	2.5	1.5	2.0	1.5	.5	1.0	.5	.5	.5
24	6.5	4.5	5.5	2.5	2.0	2.0	1.5	1.0	1.5	.5	.0	.5
25	6.5	4.5	5.5	2.5	1.5	2.0	1.0	.5	1.0	.5	.0	.5
26	7.0	6.0	6.5	3.5	2.5	3.0	.5	.0	.5	.5	.0	.5
27	7.5	6.0	7.0	3.0	2.0	2.5	1.0	.0	.5	.5	.0	.5
28	7.5	6.5	7.0	3.0	2.5	2.5	1.0	.5	.5	.5	.5	.5
29	7.0	6.0	6.5	3.0	2.5	3.0	1.0	.5	.5	.5	.0	.5
30	6.5	5.5	6.0	2.5	2.0	2.5	1.0	.5	.5	.5	.0	.5
31	6.0	5.0	5.5	---	---	---	1.0	.5	.5	.5	.0	.5
MONTH	10.0	4.0	7.0	7.5	1.5	3.5	3.0	0.0	1.0	0.5	0.0	0.5

PEND OREILLE RIVER BASIN

12340000 BLACKFOOT RIVER NEAR BONNER, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.5	5.0	3.0	4.0	6.5	5.5	6.0	10.5	8.0	9.5
2	.5	.0	.5	4.5	2.5	3.5	6.5	5.5	6.0	10.5	9.0	10.0
3	.5	.0	.5	5.0	3.0	4.0	7.5	4.5	6.0	9.0	8.0	8.5
4	.5	.0	.5	5.0	3.0	4.0	8.5	6.0	7.0	9.0	8.0	8.5
5	.5	.0	.5	4.5	3.0	4.0	8.0	6.0	7.0	9.0	7.5	8.0
6	.5	.5	.5	6.0	4.0	5.0	7.0	5.5	6.0	9.5	8.0	8.5
7	1.0	.5	.5	5.5	4.0	5.0	7.0	4.5	5.5	9.5	8.0	8.5
8	1.5	.5	1.0	5.0	4.0	4.5	8.0	4.5	6.0	9.5	8.0	9.0
9	1.5	1.0	1.0	5.0	4.0	4.5	9.0	6.0	7.5	10.0	8.5	9.0
10	1.5	.5	1.0	5.5	3.0	4.0	8.5	7.0	8.0	9.0	8.0	8.5
11	1.0	.0	.5	4.0	3.5	4.0	9.0	6.5	8.0	8.5	7.5	8.0
12	.5	.5	.5	5.0	3.0	4.0	9.0	7.5	8.0	8.0	6.5	7.5
13	1.0	.0	.5	5.0	3.5	4.5	8.5	6.5	7.5	9.5	7.0	8.0
14	.5	.5	.5	4.5	3.5	4.0	6.5	4.5	5.0	10.0	9.0	9.5
15	1.0	.5	.5	5.0	3.0	4.0	7.5	5.5	6.5	11.5	9.0	10.0
16	2.0	.5	1.0	4.5	3.0	3.5	7.5	6.0	7.0	11.0	10.0	10.5
17	1.0	.5	.5	3.5	3.0	3.0	9.0	6.5	7.5	12.0	10.5	11.0
18	1.0	.5	.5	4.5	3.0	3.5	9.5	7.0	8.5	12.5	11.0	11.5
19	1.0	.5	.5	4.5	3.5	4.0	9.5	8.0	9.0	11.5	10.0	10.5
20	1.5	.5	.5	5.0	3.0	4.0	9.5	7.5	8.5	11.0	9.0	10.0
21	1.0	.5	.5	5.5	3.0	4.5	9.5	8.0	9.0	11.0	10.5	10.5
22	1.5	.5	1.0	6.5	4.0	5.0	9.5	8.0	8.5	12.0	9.5	10.5
23	2.0	.5	1.5	6.5	5.0	5.5	8.0	7.0	7.5	11.5	10.5	11.5
24	3.0	1.5	2.0	7.0	4.5	5.5	7.5	6.5	7.0	11.5	10.0	11.0
25	3.0	1.5	2.5	6.0	4.0	5.0	7.5	6.0	6.5	12.0	11.0	11.5
26	2.5	1.5	2.0	7.5	5.0	6.0	8.0	6.0	7.0	12.0	11.0	11.5
27	2.5	1.5	2.0	8.0	5.0	6.5	10.0	7.5	8.5	11.5	10.5	11.0
28	4.0	2.5	3.0	7.5	6.5	7.0	10.0	8.5	9.5	12.5	11.0	11.5
29	4.0	2.5	3.5	6.5	5.0	6.0	8.5	6.5	7.5	12.5	11.0	11.5
30	---	---	---	7.0	4.0	5.5	8.5	6.5	7.5	11.5	10.5	11.0
31	---	---	---	7.0	4.5	6.0	---	---	---	11.0	9.5	10.0
MONTH	4.0	0.0	1.0	8.0	2.5	4.5	10.0	4.5	7.5	12.5	6.5	10.0

		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.0	9.0	9.5	19.0	16.0	17.5	21.0	18.0	19.5	15.5	14.0	14.5
2	12.5	10.5	11.0	19.5	16.0	17.5	20.5	17.0	19.0	14.5	13.5	14.0
3	14.0	11.5	12.5	17.5	15.0	16.0	19.0	17.0	18.5	14.0	12.0	13.0
4	14.5	12.5	13.5	16.0	13.0	14.5	19.0	17.0	18.0	13.5	11.5	12.5
5	14.0	13.0	13.5	15.5	13.5	14.5	18.0	15.5	17.0	15.0	12.5	13.5
6	14.0	12.5	13.5	16.5	14.0	15.0	18.5	15.5	17.0	13.5	12.0	12.5
7	15.0	13.0	14.0	16.5	13.5	15.0	19.0	15.5	17.5	13.5	10.5	12.0
8	15.0	14.0	14.5	17.5	13.5	15.5	19.0	15.5	17.5	13.0	11.0	12.0
9	14.5	12.5	13.5	18.5	15.0	16.5	18.0	15.5	17.0	13.0	11.0	12.0
10	12.5	11.0	12.0	19.0	15.5	17.0	17.0	15.5	16.5	12.0	11.5	11.5
11	12.0	11.0	11.5	19.0	15.5	17.5	17.5	15.0	16.0	13.5	11.0	12.0
12	12.0	11.5	12.0	19.5	15.5	17.5	17.0	14.0	15.5	14.5	11.0	13.0
13	12.5	11.0	11.5	20.5	16.5	18.5	17.5	14.5	16.0	15.5	12.5	14.0
14	12.0	11.0	11.5	20.5	17.0	19.0	17.0	14.0	16.0	16.0	13.0	14.5
15	12.0	11.0	11.5	19.0	16.5	18.0	16.5	14.0	15.5	16.0	13.5	15.0
16	12.5	11.0	11.5	18.5	15.0	17.0	16.5	13.5	15.5	17.0	14.5	16.0
17	14.0	12.0	13.0	18.5	15.5	17.0	16.5	13.5	15.0	17.0	14.5	16.0
18	14.0	12.5	13.5	18.0	16.0	17.0	16.5	14.0	15.0	16.0	14.5	15.0
19	14.5	12.5	13.5	18.5	15.5	17.0	16.5	14.0	15.0	14.5	13.5	14.0
20	13.0	12.0	12.5	19.0	15.5	17.0	16.5	14.0	15.0	13.5	11.0	12.0
21	14.5	12.0	13.5	19.5	16.0	18.0	16.0	13.0	14.5	11.5	9.5	10.5
22	16.0	13.5	14.5	19.0	16.0	17.5	15.5	13.0	14.5	10.0	8.5	9.0
23	16.0	13.5	14.5	19.0	16.0	17.5	16.0	13.5	15.0	8.5	6.5	7.5
24	15.5	13.5	14.5	19.0	15.5	17.5	16.0	14.5	15.5	9.0	6.0	7.5
25	17.0	13.5	15.0	19.0	15.5	17.5	17.0	14.0	15.5	9.5	7.0	8.5
26	17.0	14.0	15.5	19.5	16.0	18.0	17.0	14.0	15.5	10.5	8.0	9.0
27	17.5	14.5	15.5	20.0	17.0	18.5	16.0	14.0	15.0	10.5	8.0	9.5
28	18.0	14.5	16.0	20.0	16.5	18.5	15.5	13.0	14.5	10.5	8.5	10.0
29	18.0	15.0	16.5	20.0	16.5	18.5	15.0	12.5	14.0	11.5	9.5	10.5
30	18.5	14.5	16.5	21.0	17.0	19.0	15.5	13.5	14.5	11.5	11.0	11.0
31	---	---	---	20.0	17.5	19.0	15.0	12.5	14.0	---	---	---
MONTH	18.5	9.0	13.5	21.0	13.0	17.0	21.0	12.5	16.0	17.0	6.0	12.0

PEND OREILLE RIVER BASIN

12340500 CLARK FORK ABOVE MISSOULA, MT

LOCATION.--Lat 46°52'38", long 113°55'53", in $NW^1/_4NW^1/_4NW^1/_4$ sec.19, T.13 N., R.18 W., Missoula County, Hydrologic Unit 17010204, on right bank 0.2 mi downstream from county road bridge, 2.8 mi east of Missoula, 2.8 mi downstream from Milltown Dam, 3.0 mi downstream from Blackfoot River, and at river mile 361.6.

DRAINAGE AREA.--5,999 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1929 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1042: 1936. WSP 1152: 1942. WSP 1246: 1929-30, 1935, drainage area. WSP 1316: 1932-33.

GAGE.--Water-stage recorder. Datum of gage is 3,198.30 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to May 27, 1929, nonrecording gage.

REMARKS.--Water-discharge records good. Diurnal fluctuation caused by powerplant at Milltown. Diversions for irrigation of about 120,000 acres upstream from station. U. S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1908 reached a discharge of 48,000 ft^3/s, provided by The Montana Power Company.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1320	1510	1530	1190	1100	1490	1860	4760	5050	2080	863	718
2	1350	1510	1540	1360	1340	1500	1930	5070	4660	1920	819	754
3	1350	1480	1490	1340	1640	1470	2020	5660	4270	1960	811	805
4	1380	1520	1400	1230	1450	1530	1970	5940	4170	1930	798	814
5	1350	1490	1230	1280	1380	1570	2180	6030	4210	1900	791	836
6	1340	1500	1360	1260	1380	1620	2380	5790	4280	1900	817	866
7	1380	1490	1450	1220	1380	1620	2430	5470	4420	1860	790	887
8	1360	1490	1420	1300	1370	1620	2370	5100	4500	1780	768	877
9	1410	1480	1330	1310	1390	1610	2270	4940	4630	1750	766	884
10	1410	1460	1330	1260	1410	1540	2390	4850	4470	1690	772	888
11	1450	1440	1370	1210	1330	1510	2590	4680	4280	1670	774	979
12	1430	1430	1390	1210	1270	1500	2770	4370	3960	1560	785	959
13	1440	1410	1420	1100	1340	1470	3360	4120	3830	1530	785	950
14	1440	1410	1390	1150	1330	1460	4280	3830	3810	1480	770	938
15	1410	1400	1360	1330	1340	1460	4390	3650	3880	1440	767	913
16	1410	1400	1420	1320	1330	1410	4310	3650	4650	1370	753	878
17	1440	1390	1450	1340	1230	1460	4200	3800	4430	1340	740	870
18	1450	1440	1460	1260	1180	1390	4310	4130	4100	1310	719	893
19	1440	1440	1460	1230	1140	1480	4770	4500	3820	1280	733	859
20	1430	1420	1430	1190	1090	1420	5170	4720	3660	1250	751	870
21	1430	1440	1420	1240	1230	1450	5500	4780	3450	1230	725	930
22	1400	1410	1400	1320	1340	1400	5900	4990	3170	1210	732	925
23	1400	1380	1360	1310	1370	1470	6240	5350	3030	1140	753	967
24	1380	1320	1280	1280	1440	1550	6180	5540	2870	1130	767	952
25	1420	1450	1220	1230	1390	1530	5700	5370	2720	1090	759	1010
26	1400	1710	1090	1280	1330	1560	5270	5270	2620	1040	763	969
27	1450	1860	e1000	1280	1300	1650	4810	5170	2530	1010	756	969
28	1520	1770	952	1260	1410	1840	4660	5030	2320	984	735	975
29	1600	1650	905	1210	1580	2080	4820	5180	2250	907	734	949
30	1580	1560	880	1070	---	1960	4840	5010	2130	905	737	982
31	1550	---	990	e850	---	1880	---	5020	---	895	739	---
TOTAL	44120	44660	40727	38420	38810	48500	115870	151770	112170	44541	23772	27066
MEAN	1423	1489	1314	1239	1338	1565	3862	4896	3739	1437	767	902
MAX	1600	1860	1540	1360	1640	2080	6240	6030	5050	2080	863	1010
MIN	1320	1320	880	850	1090	1390	1860	3650	2130	895	719	718
AC-FT	87510	88580	80780	76210	76980	96200	229800	301000	222500	88350	47150	53690

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2000, BY WATER YEAR (WY)

MEAN	1574	1571	1433	1340	1490	1876	3742	7973	8342	3198	1500	1416
MAX	2987	2852	3323	2546	3431	4124	10080	17240	19270	8759	3448	2874
(WY)	1960	1960	1976	1976	1996	1986	1934	1976	1975	1975	1975	1965
MIN	854	882	874	606	674	1037	1191	2005	2122	868	627	653
(WY)	1936	1938	1945	1937	1933	1937	1941	1941	1992	1931	1988	1937

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1929 - 2000	
ANNUAL TOTAL	1087177		730426			
ANNUAL MEAN	2979		1996		2963	
HIGHEST ANNUAL MEAN					5071	1976
LOWEST ANNUAL MEAN					1344	1941
HIGHEST DAILY MEAN	14400	Jun 5	6240	Apr 23	30800	Jun 21 1975
LOWEST DAILY MEAN	880	Dec 30	718	Sep 1	340	Sep 27 1937
ANNUAL SEVEN-DAY MINIMUM	1010	Dec 25	736	Aug 16	446	Jan 7 1937
INSTANTANEOUS PEAK FLOW			a6770	Apr 23	32300	Jun 21 1975
INSTANTANEOUS PEAK STAGE			5.94	Apr 23	13.75	Jun 21 1975
INSTANTANEOUS LOW FLOW			b401	Aug 5	c115	Oct 25 1943
ANNUAL RUNOFF (AC-FT)	2156000		1449000		2146000	
10 PERCENT EXCEEDS	7030		4660		7050	
50 PERCENT EXCEEDS	1580		1420		1680	
90 PERCENT EXCEEDS	1320		856		1000	

a--Result of regulation.
b--Gage height, 1.69 ft, result of regulation.
c--Gage height, 0.64 ft.
e--Estimated.

PEND OREILLE RIVER BASIN

12340500 CLARK FORK ABOVE MISSOULA, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-71, 1977-83, 1986 to current year. Water years 1969-71 samples collected 3.4 miles downstream from gaging station.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: June 1977 to September 1983.
SUSPENDED-SEDIMENT DISCHARGE: July 1986 to April 1987, June 1988 to January 1996, March 1996 to present.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE (water years 1977-83): Maximum, 22.5°C, Aug. 7, 8, 1983; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATION: Maximum daily mean, 592 mg/L, May 18, 1997; minimum daily mean, 1 mg/L, on many days from 1990 to 1994, and 1999 to 2000.
SEDIMENT LOAD: Maximum daily, 42,200 tons, May 18, 1997; minimum daily, 1.6 tons, Dec. 27, 1992.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 26 mg/L, Apr. 23; minimum daily mean, 1 mg/L, on several days in December, August, and September.
SEDIMENT LOAD: Maximum daily, 438 tons, Apr. 23; minimum daily, 1.9 tons, Sept. 1.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 1999									
18...	1100	1490	8.5	340	7.0	4.5	160	42	12
MAR 2000									
07...	1500	1600	8.4	317	13.5	6.5	150	41	11
APR									
05...	1635	2300	8.4	279	16.0	7.5	130	36	11
MAY									
10...	0830	4860	8.3	183	7.0	8.5	86	23	7.1
23...	1545	5450	8.3	169	21.0	12.0	79	21	6.6
JUN									
05...	1630	4220	8.3	197	27.0	14.5	91	24	7.7
JUL									
21...	1830	1230	8.4	267	35.0	20.0	120	32	11
SEP									
06...	0755	854	8.4	307	10.5	13.5	140	37	12

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
NOV 1999									
18...	4	3	<.1	<.1	1	6	<10	79	<1
MAR 2000									
07...	4	4	<.1	<.1	3	7	13	166	<1
APR									
05...	3	3	<.1	<.1	2	5	19	182	<1
MAY									
10...	1	E1	<.1	<.1	E1	5	11	175	<1
23...	1	E2	<.1	<.1	2	4	15	169	<1
JUN									
05...	2	E2	<.1	<.1	2	6	<10	98	<1
JUL									
21...	2	3	<.1	<.1	E.7	2	E6	80	<1
SEP									
06...	3	3	<.1	<.1	2	3	<10	56	<1

E--Estimated.

12340500 CLARK FORK ABOVE MISSOULA, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1999								
18...	<1	14	23	2	<31	4	16	93
MAR 2000								
07...	<1	26	38	4	12	9	39	93
APR								
05...	<1	19	27	2	8	9	56	97
MAY								
10...	<1	9	20	3	8	12	157	93
23...	<1	8	20	3	6	15	221	89
JUN								
05...	<1	10	18	3	2	6	68	91
JUL								
21...	<1	14	26	3	3	6	20	88
SEP								
06...	<1	6	15	1	4	4	9.2	92

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	4	14	3	12	5	21	2	6.4	2	5.9	11	44
2	4	15	3	12	4	17	3	11	4	14	9	36
3	4	15	3	12	3	12	3	11	5	22	7	28
4	4	15	3	12	2	7.6	3	10	6	23	7	29
5	4	15	3	12	2	6.6	3	10	5	19	7	30
6	4	14	3	12	3	11	3	10	6	22	8	35
7	4	15	3	12	6	23	3	9.9	6	22	8	35
8	4	15	4	16	6	23	3	11	6	22	8	35
9	4	15	4	16	5	18	3	11	6	23	8	35
10	4	15	4	16	4	14	3	10	6	23	8	33
11	4	16	4	16	4	15	3	9.8	5	18	7	29
12	4	15	4	15	4	15	3	9.8	5	17	6	24
13	2	7.8	4	15	4	15	2	5.9	4	14	7	28
14	2	7.8	4	15	4	15	2	6.2	4	14	7	28
15	2	7.6	4	15	3	11	2	7.2	4	14	4	16
16	2	7.6	4	15	3	12	2	7.1	4	14	4	15
17	3	12	4	15	3	12	2	7.2	4	13	5	20
18	3	12	5	19	3	12	2	6.8	4	13	6	23
19	3	12	5	19	3	12	2	6.6	4	12	9	36
20	3	12	5	19	3	12	2	6.4	4	12	8	31
21	4	15	4	16	3	12	2	6.7	4	13	7	27
22	4	15	4	15	3	11	2	7.1	4	14	8	30
23	4	15	4	15	2	7.3	2	7.1	5	18	8	32
24	4	15	4	14	1	3.5	2	6.9	6	23	8	33
25	3	12	4	16	1	3.3	2	6.6	6	23	6	25
26	3	11	6	28	2	5.9	2	6.9	6	22	7	29
27	3	12	6	30	2	5.4	2	6.9	7	25	8	36
28	4	16	5	24	2	5.1	2	6.8	9	34	8	40
29	6	26	5	22	2	4.9	2	6.5	10	43	12	67
30	6	26	5	21	2	4.8	2	5.8	---	---	11	58
31	4	17	---	---	2	5.3	2	4.6	---	---	9	46
TOTAL	---	437.8	---	496	---	352.7	---	245.2	---	551.9	---	1013

PEND OREILLE RIVER BASIN

12340500 CLARK FORK ABOVE MISSOULA, MT--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9	45	12	154	12	164	5	28	4	9.3	1	1.9
2	10	52	15	205	12	151	5	26	4	8.8	1	2.0
3	9	49	20	306	12	138	4	21	4	8.8	1	2.2
4	8	43	25	401	8	90	4	21	5	11	2	4.4
5	10	59	25	407	7	80	3	15	5	11	2	4.5
6	10	64	22	344	6	69	4	21	5	11	4	9.4
7	8	52	18	266	9	107	4	20	5	11	4	9.6
8	8	51	14	193	11	134	4	19	5	10	4	9.5
9	9	55	12	160	10	125	4	19	4	8.3	4	9.5
10	8	52	12	157	9	109	4	18	4	8.3	4	9.6
11	10	70	11	139	8	92	4	18	4	8.4	4	11
12	12	90	9	106	7	75	4	17	4	8.5	4	10
13	16	145	9	100	8	83	4	17	4	8.5	4	10
14	23	266	8	83	8	82	5	20	4	8.3	4	10
15	21	249	8	79	8	84	5	19	4	8.3	4	9.9
16	19	221	7	69	13	163	5	18	4	8.1	3	7.1
17	17	193	10	103	10	120	5	18	4	8.0	3	7.0
18	18	209	9	100	6	66	4	14	4	7.8	4	9.6
19	22	283	9	109	8	83	4	14	4	7.9	4	9.3
20	24	335	12	153	9	89	5	17	4	8.1	5	12
21	25	371	12	155	8	75	4	13	4	7.8	5	13
22	24	382	10	135	7	60	4	13	4	7.9	5	12
23	26	438	13	188	5	41	4	12	2	4.1	5	13
24	24	400	13	194	6	46	5	15	1	2.1	5	13
25	21	323	12	174	6	44	5	15	1	2.0	5	14
26	15	213	13	185	5	35	5	14	1	2.1	4	10
27	15	195	12	168	4	27	4	11	2	4.1	4	10
28	14	176	14	190	5	31	3	8.0	2	4.0	4	11
29	14	182	13	182	4	24	3	7.3	2	4.0	4	10
30	12	157	13	176	4	23	3	7.3	2	4.0	4	11
31	---	---	12	163	---	---	3	7.2	2	4.0	---	---
TOTAL	---	5420	---	5544	---	2510	---	502.8	---	225.5	---	275.5

TOTAL LOAD FOR YEAR: 17,574.4 tons

PEND OREILLE RIVER BASIN

12342500 WEST FORK BITTERROOT RIVER NEAR CONNER, MT

LOCATION.--Lat 45°43'30", long 114°16'50", in $SE^1/_4NE^1/_4NW^1/_4$ sec.26, T.1 S., R.22 W., Ravalli County, Hydrologic Unit 17010205, on right bank 0.6 mi downstream from Painted Rocks Lake, 6.4 mi upstream from Nez Perce Creek, 16.1 mi southwest of Conner, and at river mile 19.2.

DRAINAGE AREA.--317 mi^2.

PERIOD OF RECORD.--April 1941 to current year.

REVISED RECORDS.--WSP 1246: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,581.36 ft above sea level (U.S. Forest Service bench mark).

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Painted Rocks Lake (station 12342000). Diversions for irrigation of about 200 acres upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	53	58	58	59	60	63	199	638	184	234	188
2	52	53	58	58	59	60	63	201	579	185	231	188
3	53	53	58	58	59	60	63	202	549	180	257	188
4	53	53	58	58	59	60	63	229	538	178	286	186
5	53	53	58	58	59	60	63	254	540	172	286	185
6	54	53	58	58	59	60	63	258	547	170	282	184
7	54	55	58	58	59	61	63	259	537	169	282	182
8	53	55	58	58	59	62	63	263	529	165	282	180
9	53	55	58	58	59	62	64	263	509	164	282	180
10	53	55	58	58	59	62	65	312	479	163	294	179
11	53	55	58	58	59	62	65	445	448	164	310	177
12	53	55	58	58	59	62	65	435	420	165	306	175
13	53	55	58	59	59	62	129	413	436	145	306	174
14	53	55	58	59	59	62	181	401	401	113	306	184
15	53	55	58	59	60	62	182	394	388	109	305	195
16	53	55	58	59	60	62	182	399	380	109	302	193
17	53	56	58	59	60	60	182	440	348	178	302	191
18	53	56	58	59	60	60	182	500	322	259	302	190
19	54	56	58	59	60	62	184	582	313	258	298	188
20	55	56	58	59	60	62	185	655	302	255	294	186
21	53	56	58	59	60	62	187	704	261	255	291	160
22	53	56	58	59	60	62	188	803	252	257	290	139
23	53	56	58	59	60	62	191	896	256	259	290	138
24	53	56	58	59	60	62	191	902	247	259	268	135
25	53	56	58	59	60	62	192	878	232	259	243	123
26	53	57	58	59	60	62	195	851	222	259	241	101
27	53	58	58	59	60	62	195	813	214	246	241	103
28	54	58	58	59	60	62	196	801	210	234	241	103
29	55	58	58	59	60	63	198	785	194	234	238	103
30	53	58	58	59	---	63	198	751	185	234	237	102
31	53	---	58	59	---	63	---	702	---	234	212	---
TOTAL	1649	1661	1798	1817	1726	1908	4101	15990	11476	6215	8539	4900
MEAN	53.2	55.4	58.0	58.6	59.5	61.5	137	516	383	200	275	163
MAX	55	58	58	59	60	63	198	902	638	259	310	195
MIN	52	53	58	58	59	60	63	199	185	109	212	101
AC-FT	3270	3290	3570	3600	3420	3780	8130	31720	22760	12330	16940	9720

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2000, BY WATER YEAR (WY)

MEAN	160	115	92.4	84.8	81.0	95.1	206	816	928	269	197	175
MAX	484	416	270	243	215	277	719	2011	1960	633	439	385
(WY)	1943	1945	1960	1957	1957	1952	1956	1947	1964	1975	1995	1973
MIN	52.3	53.3	27.8	21.4	6.80	7.85	8.65	119	118	127	84.5	62.4
(WY)	1999	1988	1958	1977	1944	1944	1944	1977	1987	1973	1945	1944

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1941 - 2000	
ANNUAL TOTAL	96221		61780			
ANNUAL MEAN	264		169		270	
HIGHEST ANNUAL MEAN					457	1976
LOWEST ANNUAL MEAN					120	1977
HIGHEST DAILY MEAN	2000	May 27	902	May 24	3900	May 9 1947
LOWEST DAILY MEAN	52	Sep 29	52	Oct 1,2	a.60	May 3 1954
ANNUAL SEVEN-DAY MINIMUM	52	Sep 29	53	Oct 1	.66	May 1 1954
INSTANTANEOUS PEAK FLOW			913	May 24	4060	May 9 1947
INSTANTANEOUS PEAK STAGE			3.12	May 24	6.18	May 9 1947
INSTANTANEOUS LOW FLOW					b.20	Nov 25 1952
ANNUAL RUNOFF (AC-FT)	190900		122500		195700	
10 PERCENT EXCEEDS	537		382		642	
50 PERCENT EXCEEDS	103		63		116	
90 PERCENT EXCEEDS	54		55		58	

a--May 3-7, 1954.
b--Dam shut down.

12344000 BITTERROOT RIVER NEAR DARBY, MT

LOCATION.--Lat 45°58'20", long 114°08'26", in $SW^1/_4SE^1/_4NE^1/_4$ sec.36, T.3 N., R.21 W., Ravalli County, Hydrologic Unit 17010205, on left bank 50 ft upstream from bridge on U.S. Highway 93, 0.3 mi downstream from Chaffin Creek, 4.1 mi southeast of Darby, and at river mile 77.2.
DRAINAGE AREA.--1,049 mi^2.
PERIOD OF RECORD.--April 1937 to current year. Monthly discharge only for April 1937, published in WSP 1316.
REVISED RECORDS.--WSP 1246: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 3,942.14 ft above sea level. Prior to Oct. 1, 1987, at datum 1.00 ft higher. Prior to Aug. 2, 1939, non-recording gage at highway bridge 45 ft upstream at same datum.
REMARKS.--Records good. Some regulation by Painted Rocks Lake (station number 12342000). Diversions for irrigation of about 5,000 acres upstream of station. Ditch bypassing station irrigates about 500 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189	198	242	241	221	252	363	1450	1950	771	361	283
2	186	181	231	223	244	249	393	1840	1810	789	356	296
3	185	193	224	208	239	255	399	1850	1950	734	355	310
4	185	209	153	210	220	270	458	1940	2060	656	398	301
5	183	214	156	214	220	298	733	1850	2160	603	402	303
6	185	230	251	198	216	312	726	1700	2290	606	392	303
7	189	239	229	207	214	321	611	1510	2320	614	388	299
8	186	224	194	211	215	320	544	1440	2360	562	386	292
9	187	214	185	207	227	309	562	1390	2160	571	380	305
10	194	208	208	200	230	306	669	1400	1870	554	379	320
11	191	207	211	200	225	292	784	1420	1680	532	410	378
12	187	207	213	202	225	281	922	1350	1590	515	404	383
13	185	206	223	180	225	276	1280	1250	2060	503	399	337
14	185	206	200	221	230	274	1460	1210	1730	458	393	321
15	185	203	209	222	247	267	1250	1230	2160	425	390	327
16	187	201	225	220	233	257	1100	1390	1770	398	388	322
17	185	205	248	217	213	260	1020	1690	1470	388	385	327
18	197	213	247	202	179	251	1060	1980	1380	493	384	324
19	194	204	233	202	193	284	1330	2210	1420	498	380	331
20	191	210	225	209	213	262	1470	2200	1280	493	375	348
21	191	206	220	211	241	252	1460	2510	1170	477	371	337
22	188	198	196	207	246	265	1700	2930	1190	456	370	302
23	187	164	141	199	245	292	1640	3060	1210	446	368	291
24	185	172	153	203	252	295	1400	2690	1080	438	368	285
25	184	255	168	205	237	292	1220	2620	1020	421	343	282
26	184	397	179	207	223	312	1110	2680	954	413	332	253
27	193	343	171	202	240	341	1060	2480	893	404	328	243
28	202	263	170	189	257	422	1450	2740	846	378	324	240
29	221	234	181	156	253	427	1570	2700	819	372	320	238
30	207	239	179	158	---	390	1380	2340	785	367	317	244
31	202	---	217	182	---	363	---	2170	---	363	312	---
TOTAL	5900	6643	6282	6313	6623	9247	31124	61220	47437	15698	11458	9125
MEAN	190	221	203	204	228	298	1037	1975	1581	506	370	304
MAX	221	397	251	241	257	427	1700	3060	2360	789	410	383
MIN	183	164	141	156	179	249	363	1210	785	363	312	238
AC-FT	11700	13180	12460	12520	13140	18340	61730	121400	94090	31140	22730	18100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2000, BY WATER YEAR (WY)

MEAN	360	318	284	252	272	355	973	2887	3091	992	405	348
MAX	1020	788	765	421	791	1011	2530	5995	6235	2608	751	634
(WY)	1947	1947	1947	1947	1996	1972	1943	1947	1964	1975	1975	1941
MIN	143	144	138	125	125	139	306	1110	678	210	141	129
(WY)	1938	1988	1988	1988	1941	1944	1937	1977	1987	1940	1940	1937

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1937 - 2000	
ANNUAL TOTAL	319407		217070			
ANNUAL MEAN	875		593		885	
HIGHEST ANNUAL MEAN					1423	1976
LOWEST ANNUAL MEAN					454	1987
HIGHEST DAILY MEAN	6240	May 26	3060	May 23	11000	May 9 1947
LOWEST DAILY MEAN	141	Dec 23	141	Dec 23	80	Feb 9 1939
ANNUAL SEVEN-DAY MINIMUM	166	Dec 23	166	Dec 23	98	Jan 1 1988
INSTANTANEOUS PEAK FLOW			3310	May 23	b11500	May 9 1947
INSTANTANEOUS PEAK STAGE			4.86	May 23	8.43	May 17 1997
INSTANTANEOUS LOW FLOW			117	Dec 23	c71	Feb 9 1939
INSTANTANEOUS LOW STAGE			a0.77	Dec 23		
ANNUAL RUNOFF (AC-FT)	633500		430600		641200	
10 PERCENT EXCEEDS	2360		1650		2380	
50 PERCENT EXCEEDS	342		302		369	
90 PERCENT EXCEEDS	189		188		195	

a--Result of freezeup.
b--Gage height, 8.18 ft,datum then in use.
c--Observed.

PEND OREILLE RIVER BASIN

12350250 BITTERROOT RIVER AT BELL CROSSING, NEAR VICTOR, MT

LOCATION.--Lat 46°26'36", long 114°07'22", in NW$^1/_4$NW$^1/_4$NE$^1/_4$ sec. 20, T.8 N., R.20 W., Ravalli County, Hydrologic Unit 17010205, on right bank 20 ft downstream from highway bridge at Bell Crossing, 1.5 mi northeast of Victor, 2.0 mi upstream from Big Creek, and at river mile 38.3.

DRAINAGE AREA.--1,963 mi^2.

PERIOD OF RECORD.--April 1987 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 3,330 ft above sea level, from topographic map.

REMARKS.--Seasonal records good except those for estimated daily discharges, which are poor. Some regulation by Painted Rocks Lake (station number 12342000). Diversions for irrigation of about 80,000 acres 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1							1200	e210	241			
2							1210	e205	250			
3							1140	e200	269			
4							1000	e230	276			
5							855	e240	268			
6							836	e235	260			
7							861	e230	252			
8							757	e220	239			
9							738	e210	236			
10							721	e210	250			
11							653	e215	296			
12							600	221	402			
13							577	234	385			
14							548	230	338			
15							488	227	319			
16							438	226	309			
17							394	226	320			
18							395	222	320			
19							e410	217	337			
20							e405	203	356			
21							e400	199	408			
22							e390	194	433			
23							e380	201	419			
24							e360	218	412			
25							e330	228	399			
26							e300	223	391			
27							e270	213	366			
28							e250	206	372			
29							e240	206	377			
30							e230	211	409			
31							e220	221	---			
TOTAL							17596	6731	9909			
MEAN							568	217	330			
MAX							1210	240	433			
MIN							220	194	236			
AC-FT							34900	13350	19650			

STATISTICS OF MONTHLY MEAN DATA FOR CALENDAR YEARS 1987 - 2000, BY SEASON

MEAN	1625	3622	5055	1284	379	377	541	1798
MAX	3052	5027	11060	2665	670	595	947	1798
(WY)	1990	1993	1996	1996	1993	1996	1996	1996
MIN	747	3092	1372	207	95.8	145	397	1798
(WY)	1991	1987	1987	1987	1988	1987	1989	1996

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1987 - 2000	
HIGHEST DAILY MEAN	1210	Jul 2	17500	Jun 9 1996
LOWEST DAILY MEAN	194	Aug 22	63	Jul 16 1987
INSTANTANEOUS PEAK FLOW			a18700	Jun 9 1996
INSTANTANEOUS PEAK STAGE			b10.67	May 18 1997
INSTANTANEOUS LOW FLOW			60	Jul 16 1987

a--Gage height, 10.07 ft.
b--Flood on or about May 18, 1997 may have exceeded stage of 10.67 ft, discharge unknown.
e--Estimated.

PEND OREILLE RIVER BASIN

12352500 BITTERROOT RIVER NEAR MISSOULA, MT

(National water-quality assessment program)

LOCATION--Lat 46°49'55", long 114°03'11",in SW¼NW¼NE¼ sec. 1, T.12 N., R.20 W., Missoula County, Hydrologic Unit 17010205, on right bank 40 ft downstream from bridge on U.S. Highway 93, 0.5 mi south of Fort Missoula, and at river mile 5.7.
DRAINAGE AREA.--2,814 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1898 to November 1901, May 1903 to December 1904, July 1989 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 3,110 ft above sea level, from topographic map. Prior to Jan. 1, 1905, nonrecording gage at site 1.5 mi upstream at different datum.
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Some regulation by Painted Rocks Lake (station number 12342000). Diversions for irrigation of about 111,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	757	825	986	779	e650	922	e1150	3460	5910	1920	513	495
2	760	814	979	811	799	902	e1100	4140	5130	1870	491	592
3	760	806	949	786	928	885	e1200	4920	5080	1820	477	630
4	769	798	892	779	884	889	e1250	5140	5570	1710	492	642
5	772	819	799	785	837	911	1540	5460	5850	1540	501	633
6	779	838	827	780	816	956	2050	4830	6070	1500	515	626
7	779	901	914	760	800	e1000	2080	4290	6470	1550	508	613
8	779	950	908	767	796	e1050	1890	3860	6710	1470	489	611
9	781	934	850	779	803	e1030	1780	3710	6770	1360	484	602
10	788	894	818	766	816	1000	1870	3750	5900	1360	486	616
11	788	870	829	765	813	985	2170	3560	5280	1270	499	651
12	781	853	836	764	806	955	2520	3350	4860	1160	502	707
13	777	849	857	711	811	931	3270	3100	5360	1110	513	752
14	769	866	849	737	821	922	4710	2870	6100	1070	524	721
15	761	872	829	798	855	909	4820	2760	6010	995	519	686
16	760	855	835	811	863	887	4170	2910	6950	922	520	661
17	760	837	868	805	832	879	3790	3540	5530	864	519	671
18	760	833	903	787	794	867	3600	4600	4650	807	522	669
19	751	824	928	765	738	874	4050	5440	4330	803	514	672
20	760	816	898	748	726	882	4950	5710	4210	794	502	664
21	739	820	870	767	778	866	5130	6000	3760	769	487	697
22	715	809	849	765	826	850	5360	7040	3540	745	484	729
23	712	784	805	757	840	863	5480	8050	3560	708	492	740
24	698	768	769	744	888	891	4840	7540	3320	684	509	743
25	698	776	741	741	903	908	3980	6570	3050	668	528	734
26	698	1000	743	746	872	923	3480	6570	2860	646	532	721
27	719	1490	749	743	864	957	3050	6380	2570	619	520	705
28	789	1300	726	735	923	1050	3100	6740	2330	596	504	688
29	910	1100	706	e670	947	1190	3950	8210	2150	566	490	686
30	883	1010	707	e600	---	1240	3780	7180	2030	541	483	694
31	842	---	710	e550	---	e1200	---	6380	---	530	478	---
TOTAL	23794	26911	25929	23301	24029	29574	96110	158060	141910	32967	15597	20051
MEAN	768	897	836	752	829	954	3204	5099	4730	1063	503	668
MAX	910	1490	986	811	947	1240	5480	8210	6950	1920	532	752
MIN	698	768	706	550	650	850	1100	2760	2030	530	477	495
AC-FT	47200	53380	51430	46220	47660	58660	190600	313500	281500	65390	30940	39770

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2000, BY WATER YEAR (WY)*

MEAN	1010	1107	1045	931	1031	1314	2848	6871	8760	3402	1069	909
MAX	1570	2211	3141	1791	3030	2021	4944	13430	21880	14510	3412	1623
(WY)	1904	1996	1996	1997	1996	1997	1996	1997	1899	1899	1899	1899
MIN	568	614	530	542	477	804	1347	4039	2397	980	503	455
(WY)	1905	1905	1905	1993	1994	1994	1995	1990	1992	1994	2000	1904

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1898 - 2000*	
ANNUAL TOTAL	901212		618233			
ANNUAL MEAN	2469		1689		2528	
HIGHEST ANNUAL MEAN					4864	1899
LOWEST ANNUAL MEAN					1366	1992
HIGHEST DAILY MEAN	15200	Jun 4	8210	May 29	37400	Jun 20 1899
LOWEST DAILY MEAN	680	Sep 25	477	Aug 3	300	Feb 9 1994
ANNUAL SEVEN-DAY MINIMUM	692	Sep 21	495	Aug 3	370	Sep 16 1904
INSTANTANEOUS PEAK FLOW			8550	May 29	a38300	Jun 20 1899
INSTANTANEOUS PEAK STAGE			7.60	May 29	13.11	May 18 1997
INSTANTANEOUS LOW FLOW			466	Aug 3	300	Feb 9 1994
INSTANTANEOUS LOW STAGE			2.67	Aug 3		
ANNUAL RUNOFF (AC-FT)	1788000		1226000		1831000	
10 PERCENT EXCEEDS	6970		4880		6400	
50 PERCENT EXCEEDS	1020		839		1150	
90 PERCENT EXCEEDS	761		584		650	

*--During periods of operation (July 1898 to November 1901, May 1903 to December 1904, and July 1989 to current year).
a--Observed gage height, 11.55 ft, site and datum then in use.
e--Estimated.

12352500 BITTERROOT RIVER NEAR MISSOULA, MT--Continued

(National water-quality assessment program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1997 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: November 1999 to September 2000.
INSTRUMENTATION.--Temperature probe installed Nov. 4, 1999.
REMARKS.--Missing temperature data for Nov. 4-9, Jan. 4, 5, 29-31, Mar. 31, and Apr. 1-4 due to equipment problems. Sampled as part of the Northern Rockies Intermontane Basins study of the USGS National Water-Quality Assessment program. 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, Aug. 1, 2000; minimum, 0.0°C, Jan. 13, 2000.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 24.5°C, Aug. 1; minimum, 0.0°C, Jan. 13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 1999											
20...	1600	760	688	12.4	119	8.6	158	--	9.0	69	20.0
DEC											
02...	1000	980	676	10.6	91	7.9	127	2.5	4.0	57	16.6
JAN 2000											
26...	1415	751	681	12.8	106	7.9	142	.5	3.0	61	17.6
MAR											
08...	1545	E1050	679	11.4	107	8.0	123	6.0	7.5	51	14.6
APR											
12...	1300	2510	681	10.2	100	7.7	72	19.0	9.5	29	8.4
MAY											
02...	1015	3980	679	9.3	95	7.5	52	14.5	11.0	--	--
23...	1130	7960	681	9.4	97	7.2	39	17.5	11.5	15	4.6
JUN											
20...	1430	4190	682	10.2	110	7.6	59	24.0	13.5	24	7.1
JUL											
31...	1430	529	680	9.6	123	8.3	159	35.5	21.5	72	20.9
AUG											
29...	1430	498	678	10.3	120	8.2	177	27.0	17.0	77	22.5
SEP											
19...	1000	482	681	8.4	93	7.8	171	--	15.0	75	22.2

DATE	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	POTAS-SIUM, TOTAL RECOV-ERABLE (MG/L AS K) (00937)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM, TOTAL RECOV-ERABLE (MG/L AS NA) (00929)	SODIUM AD-SORP-TION RATIO (00931)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
OCT 1999											
20...	20.0	4.7	4.7	2.0	2.0	6.2	6.0	.3	--	78	93
DEC											
02...	--	3.8	--	1.5	--	5.1	--	.3	--	60	74
JAN 2000											
26...	--	4.1	--	1.3	--	5.2	--	.3	--	86	105
MAR											
08...	14.9	3.5	3.6	1.2	1.3	4.7	4.7	.3	--	59	72
APR											
12...	6.0	1.9	1.5	1.0	.8	2.9	2.3	.2	25	33	40
MAY											
02...	6.0	--	1.5	.7	.8	--	2.3	--	25	31	38
23...	4.8	1.0	1.3	.6	.9	1.6	1.7	.2	--	18	22
JUN											
20...	6.8	1.5	1.6	.7	.8	2.3	2.1	.2	--	27	33
JUL											
31...	--	4.7	--	1.9	--	6.0	--	.3	--	78	95
AUG											
29...	21.3	4.9	4.7	2.1	2.2	6.7	6.4	.3	--	86	105
SEP											
19...	--	4.7	--	2.1	--	6.3	--	.3	--	84	102

PEND OREILLE RIVER BASIN

12352500 BITTERROOT RIVER NEAR MISSOULA, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)
OCT 1999											
20...	1	2.0	.2	13.9	3.6	.10	.14	<.002	.013	.002	E.005
DEC											
02...	0	1.8	.1	13.4	3.0	<.10	.16	<.002	.078	.001	E.005
JAN 2000											
26...	0	2.0	.2	13.4	3.7	E.10	E.10	.005	.102	.001	.009
MAR											
08...	0	1.6	.2	12.2	2.9	.11	.28	.004	.054	.001	.006
APR											
12...	0	.9	.1	10.1	1.9	.12	.31	.005	.033	<.001	.008
MAY											
02...	0	.7	<.1	8.4	1.4	E.10	.17	.004	.035	<.001	E.005
23...	0	.3	<.1	7.5	1.1	.18	.35	.005	.039	.001	.007
JUN											
20...	0	.6	<.1	8.2	1.1	E.10	.16	<.002	.017	.002	.006
JUL											
31...	0	2.1	.1	13.5	3.1	.12	.18	.003	.016	<.001	E.005
AUG											
29...	0	2.2	.2	13.2	3.2	.13	.14	.004	.019	<.001	.006
SEP											
19...	0	2.1	.2	12.5	3.3	E.10	.20	.006	.017	.001	E.005

DATE	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ANTIMONY, TOTAL (UG/L AS SB) (01097)
OCT 1999											
20...	E.006	.001	1.8	.2	99	.14	207	6	<28	<1	<1
DEC											
02...	.018	<.001	1.8	.2	82	.11	222	--	--	--	--
JAN 2000											
26...	.014	.004	1.3	.2	100	.12	185	--	--	--	--
MAR											
08...	.033	.003	--	--	76	.12	--	3	216	<1	<1
APR											
12...	.040	.002	--	--	47	.07	352	17	262	<1	<1
MAY											
02...	.020	.002	--	--	--	--	--	17	262	<1	<1
23...	.056	.004	--	--	28	.05	731	37	1280	<1	<1
JUN											
20...	.012	<.001	--	--	38	.07	543	24	123	<1	<1
JUL											
31...	.011	.003	--	--	99	.14	144	--	--	--	--
AUG											
29...	.012	.002	--	--	107	.15	147	<1	E23	<1	<1
SEP											
19...	.016	.003	--	--	104	.14	134	--	--	--	--

E--Estimated.

12352500 BITTERROOT RIVER NEAR MISSOULA, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT 1999											
20...	<2	<3	45	40	<1	<5	--	<1	<.1	<.8	<1
DEC											
02...	--	--	--	--	--	--	--	--	--	--	--
JAN 2000											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	<2	<3	30	34	<1	<5	--	<1	<.1	<1.0	<1
APR											
12...	<2	<3	15	17	<1	<5	--	<1	<.1	<.8	<1
MAY											
02...	<2	<3	15	17	<1	<5	--	<1	<.1	<.8	<1
23...	<.9	<3	11	26	<1	<5	<12	<1	<.1	<.8	E1
JUN											
20...	<.9	<3	16	17	<1	<5	<12	<1	<.1	<.8	<1
JUL											
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
29...	E.7	<3	46	46	<1	<5	E11	<1	<.1	<.8	<1
SEP											
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT 1999											
20...	<1	<2	<1	<20	30	50	<1	<1	--	<7	5
DEC											
02...	--	--	--	--	20	--	--	--	--	--	7
JAN 2000											
26...	--	--	--	--	30	--	--	--	--	--	11
MAR											
08...	<1	<2	<1	<20	20	340	<1	<1	--	E3	13
APR											
12...	<1	<2	<1	<20	20	270	<1	<1	--	<7	5
MAY											
02...	<1	<2	<1	<20	40	270	<1	<1	--	<7	4
23...	<1	<2	<1	<20	20	1140	<1	E1	1	E4	5
JUN											
20...	<1	<2	<1	<20	20	170	<1	<1	1	<7	4
JUL											
31...	--	--	--	--	60	--	--	--	--	--	6
AUG											
29...	<1	<2	<1	<20	40	90	<1	<1	2	E4	6
SEP											
19...	--	--	--	--	40	--	--	--	--	--	4

E--Estimated.

PEND OREILLE RIVER BASIN

12352500 BITTERROOT RIVER NEAR MISSOULA, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DISSOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)
OCT 1999										
20...	8	<.3	<1	<1	<1	<2	<2	<3	<1	<1
DEC										
02...	--	--	--	--	--	--	--	--	--	--
JAN 2000										
26...	--	--	--	--	--	--	--	--	--	--
MAR										
08...	43	<.3	<1	<1	<1	<2	<2	<3	<1	<1
APR										
12...	14	<.3	<1	<1	<1	<2	<2	<3	<1	<1
MAY										
02...	14	<.3	<1	<1	<1	<2	<2	<3	<1	<1
23...	44	<.3	<1	<1	<1	<2	<.7	<3	<1	<1
JUN										
20...	8	<.3	<1	1	<1	<2	<.7	<3	<1	<1
JUL										
31...	--	--	--	--	--	--	--	--	--	--
AUG										
29...	14	<.3	<1	<1	<1	<2	<.7	<3	<1	<1
SEP										
19...	--	--	--	--	--	--	--	--	--	--

DATE	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR) (01082)	THALLIUM, DISSOLVED (UG/L AS TL) (01057)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999										
20...	--	81	--	2	--	<1	<31	2	4.1	75
DEC										
02...	--	--	--	--	--	--	--	3	7.9	80
JAN 2000										
26...	--	--	--	--	--	--	--	--	--	--
MAR										
08...	--	68	--	1	--	2	<31	20	--	55
APR										
12...	--	34	--	<1	--	<1	<31	28	190	74
MAY										
02...	--	34	--	<1	--	<1	<31	18	193	62
23...	28	32	<.9	<1	<1	3	<31	168	3610	29
JUN										
20...	38	35	<.9	<1	<1	<1	<31	6	68	64
JUL										
31...	--	--	--	--	--	--	--	3	4.3	69
AUG										
29...	86	83	<.9	2	<1	<1	<31	2	2.7	83
SEP										
19...	--	--	--	--	--	--	--	4	5.2	90

DATE	TIME	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DISSOLVED (UG/L) (34253)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
OCT 1999										
20...	1600	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003
MAR 2000										
08...	1545	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003
MAY										
23...	1130	<.003	<.002	<.002	<.002	<.006	<.002	<.002	<.003	<.003
JUN										
20...	1430	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003

12352500 BITTERROOT RIVER NEAR MISSOULA, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
OCT 1999										
20...	<.004	<.004	<.002	<.002	91	<.002	<.001	<.017	<.002	<.004
MAR 2000										
08...	<.004	<.004	<.002	<.002	101	<.002	<.001	<.017	<.002	<.004
MAY										
23...	<.004	<.004	<.002	<.002	103	<.002	<.001	<.017	<.002	<.004
JUN										
20...	<.004	<.004	<.002	<.002	99	E.003	<.001	<.017	<.002	<.004

DATE	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)
OCT 1999										
20...	<.003	<.003	104	<.004	<.002	<.005	<.001	<.006	<.002	<.004
MAR 2000										
08...	<.003	<.003	99	<.004	<.002	<.005	<.001	<.006	<.002	<.004
MAY										
23...	<.003	<.003	98	<.004	<.002	<.005	<.001	<.006	<.002	<.004
JUN										
20...	<.003	<.003	94	<.004	<.002	<.005	<.001	<.006	<.002	<.004

DATE	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT 1999										
20...	<.004	<.003	E.001	<.004	<.004	<.004	<.005	<.002	E.005	<.003
MAR 2000										
08...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	E.002	<.003
MAY										
23...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003
JUN										
20...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003

DATE	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT 1999										
20...	<.007	<.004	<.090	<.005	<.01	<.007	<.013	<.002	E.002	E.004
MAR 2000										
08...	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.001	<.002
MAY										
23...	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.001	<.002
JUN										
20...	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.001	<.002

E--Estimated.

PEND OREILLE RIVER BASIN

12352500 BITTERROOT RIVER NEAR MISSOULA, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1							5.0	4.0	4.5	2.5	2.0	2.5
2							5.0	4.5	4.5	2.5	2.0	2.5
3							4.5	3.5	4.0	2.0	1.5	2.0
4				---	---	---	3.5	2.0	2.5	2.0	2.0	---
5				---	---	---	2.0	1.0	2.0	3.0	---	---
6				---	---	---	3.0	2.0	2.5	2.5	1.5	2.0
7				---	---	---	3.5	2.5	3.0	2.5	2.0	2.0
8				---	---	---	3.5	2.5	3.0	3.5	2.5	3.0
9				8.0	---	---	3.0	2.0	2.5	3.0	2.0	3.0
10				7.5	6.5	7.0	3.5	2.5	3.0	2.0	1.0	1.5
11				8.0	7.0	7.5	3.5	3.0	3.0	2.0	1.5	1.5
12				9.5	7.5	8.0	4.5	3.0	3.5	2.5	1.0	1.5
13				10.5	8.5	9.5	4.5	3.0	4.0	1.0	.0	.5
14				9.5	7.5	8.5	3.5	2.5	3.0	2.0	.5	1.5
15				7.5	6.0	6.5	3.5	3.0	3.0	3.0	2.0	2.5
16				6.5	5.0	6.0	4.5	3.5	4.0	3.0	2.0	2.5
17				6.0	5.5	6.0	4.5	4.0	4.5	3.5	2.0	2.5
18				6.5	6.0	6.0	4.5	4.0	4.0	2.5	1.5	2.0
19				6.0	5.0	5.5	4.0	3.5	3.5	2.5	1.0	1.5
20				5.5	5.0	5.0	4.0	3.5	3.5	2.0	1.5	1.5
21				5.5	4.5	5.0	4.0	3.5	3.5	3.0	2.0	2.5
22				5.0	4.0	4.5	3.5	2.5	3.0	3.0	2.5	2.5
23				4.0	3.5	3.5	3.0	2.5	3.0	4.0	3.0	3.5
24				4.5	3.5	4.0	3.0	2.5	2.5	3.5	2.5	3.0
25				5.5	4.5	5.0	3.0	2.5	3.0	2.5	2.0	2.5
26				6.5	5.5	6.0	2.5	2.0	2.5	3.5	2.5	2.5
27				5.5	4.5	5.0	2.5	2.0	2.0	3.5	2.5	3.0
28				5.0	4.0	4.5	2.5	2.0	2.0	3.0	2.5	2.5
29				4.0	3.5	4.0	2.5	2.0	2.0	---	---	---
30				4.5	3.5	4.0	2.5	1.5	2.0	---	---	---
31				---	---	---	2.0	1.5	2.0	---	---	---
MONTH				---	---	---	5.0	1.0	3.0	---	---	---
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	7.0	5.0	6.0	---	---	---	12.5	9.5	11.0
2	3.5	2.5	3.0	7.0	4.5	6.0	---	---	---	12.0	10.0	11.0
3	4.0	2.5	3.0	8.5	5.5	7.0	---	---	---	10.0	9.0	9.5
4	3.0	2.0	2.5	8.5	5.5	7.0	10.5	---	---	10.0	9.0	9.5
5	4.0	2.0	3.0	8.0	6.0	7.0	10.0	8.0	9.0	10.0	8.5	9.0
6	4.0	3.0	3.5	7.5	5.5	6.5	9.0	7.0	8.0	10.5	8.5	9.5
7	4.0	3.0	3.5	7.5	6.0	7.0	8.5	5.5	7.0	11.0	8.5	10.0
8	5.0	3.0	4.0	7.5	5.5	6.5	9.5	6.0	8.0	10.5	9.0	9.5
9	5.5	4.0	4.5	7.0	5.5	6.5	11.0	7.5	9.0	10.5	9.5	10.0
10	5.0	3.0	4.0	7.5	5.0	6.0	11.0	8.5	9.5	9.5	8.0	9.0
11	4.0	2.5	3.0	6.5	5.5	6.0	11.0	8.5	9.5	9.5	7.5	8.5
12	3.0	1.5	2.0	7.0	4.5	6.0	10.5	9.0	10.0	10.0	8.5	9.0
13	4.0	2.0	3.0	6.5	5.5	6.0	10.5	8.5	9.5	12.0	8.0	10.0
14	3.5	2.5	3.0	8.0	5.0	6.5	8.5	6.5	7.5	12.0	10.5	11.0
15	4.5	2.5	3.5	8.5	5.5	6.5	8.5	7.5	8.0	13.5	10.0	11.5
16	5.5	3.0	4.0	6.0	5.0	5.5	8.0	7.5	8.0	13.0	11.0	12.0
17	4.5	2.5	3.5	5.5	4.0	5.0	10.0	7.0	8.5	13.5	11.0	12.5
18	4.0	1.5	3.0	6.0	4.0	5.0	11.0	8.5	9.5	13.5	12.0	12.5
19	3.5	1.0	2.5	8.0	5.0	6.5	11.0	9.5	10.0	12.5	10.5	11.5
20	3.5	1.0	2.0	7.5	5.0	6.5	10.5	8.5	9.5	12.5	10.0	11.0
21	4.0	2.5	3.0	8.0	5.0	6.5	10.5	8.5	9.5	12.5	11.5	12.0
22	5.5	3.0	4.5	10.0	6.0	8.0	10.5	8.0	9.0	13.5	11.5	12.5
23	5.5	4.0	5.0	10.0	8.0	8.5	8.0	7.0	7.5	13.0	11.0	12.0
24	5.0	4.0	4.5	9.5	6.5	8.0	9.0	6.5	8.0	12.0	10.5	11.5
25	5.5	3.5	4.5	8.5	6.0	7.5	8.0	7.0	7.5	12.5	10.5	11.5
26	5.0	3.5	4.5	10.0	6.0	8.0	10.5	6.5	8.5	12.5	11.5	12.0
27	5.5	4.0	4.5	11.0	7.0	9.0	12.5	9.0	10.5	12.0	10.5	11.0
28	6.5	5.0	5.5	10.0	8.5	9.0	12.0	9.5	11.0	12.5	11.0	11.5
29	6.5	4.5	5.5	8.5	7.0	7.5	9.5	8.5	9.0	12.5	11.0	12.0
30	---	---	---	8.5	5.5	7.0	10.5	7.5	9.0	12.0	10.5	11.5
31	---	---	---	---	6.0	---	---	---	---	12.0	10.0	11.0
MONTH	---	---	---	---	4.0	---	---	---	---	13.5	7.5	11.0

12352500 BITTERROOT RIVER NEAR MISSOULA, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.5	9.0	10.5	21.0	17.0	18.5	24.5	20.0	22.0	17.0	15.5	16.5
2	14.0	11.5	12.5	20.5	17.5	19.0	24.0	19.5	21.5	16.0	14.0	15.5
3	15.0	13.0	14.0	19.0	15.0	17.0	21.5	18.5	19.5	16.0	13.0	14.5
4	15.0	13.0	14.0	17.0	13.5	15.5	21.5	17.5	19.0	16.0	12.5	14.0
5	14.5	13.0	13.5	16.5	14.0	15.5	21.0	16.5	18.5	15.5	13.5	14.5
6	15.0	12.5	14.0	16.5	14.0	15.5	22.0	17.5	19.5	15.5	13.5	14.5
7	15.5	13.0	14.5	18.5	14.5	16.0	22.5	17.5	20.0	17.0	12.5	14.5
8	15.5	14.0	15.0	18.5	15.0	17.0	21.5	17.5	19.5	16.5	14.0	15.0
9	15.0	12.0	13.0	20.0	16.0	18.0	20.0	17.5	19.0	15.5	13.5	14.5
10	12.5	11.5	12.0	21.0	16.5	18.5	19.0	16.5	18.0	14.5	13.0	13.5
11	12.5	10.5	11.5	21.0	17.0	19.0	20.5	16.5	18.0	15.0	12.5	14.0
12	12.5	12.0	12.5	21.0	17.0	19.0	19.5	16.0	17.5	16.5	13.0	15.0
13	13.5	11.5	12.5	22.0	18.5	20.0	20.5	16.0	18.0	18.5	14.5	16.5
14	13.5	12.0	12.5	23.0	18.5	20.5	20.5	16.0	18.0	19.5	15.5	17.5
15	13.5	12.0	12.5	21.0	18.0	19.5	19.5	16.0	17.5	19.0	15.5	17.5
16	14.0	11.5	13.0	21.5	16.5	19.0	20.0	15.0	17.5	20.0	16.5	18.0
17	15.0	12.5	14.0	21.5	17.5	19.5	18.5	15.5	17.0	19.5	16.0	18.0
18	15.5	13.5	14.5	20.0	18.0	19.0	19.0	15.0	16.5	18.0	16.0	16.5
19	15.0	14.0	14.5	21.0	17.0	19.0	19.0	15.0	17.0	16.5	14.5	15.5
20	15.5	13.0	14.0	22.0	18.0	20.0	18.0	15.0	16.5	14.5	12.5	13.5
21	16.0	14.0	15.0	23.0	18.0	20.5	19.5	14.5	17.0	12.5	10.0	11.5
22	18.0	15.0	16.5	22.0	18.5	20.5	18.5	15.0	17.0	10.5	8.5	9.5
23	17.5	15.0	16.5	22.5	18.0	20.0	18.0	14.5	16.5	10.5	7.0	8.5
24	17.0	15.0	16.0	22.5	17.5	20.0	18.0	16.0	17.0	11.5	7.5	9.5
25	18.0	14.5	16.0	22.5	17.5	20.0	20.0	15.5	17.5	12.5	8.5	10.5
26	18.0	15.5	16.5	23.0	18.0	20.5	20.5	16.5	18.0	13.5	9.5	11.5
27	18.5	15.5	17.0	23.0	19.0	21.0	19.0	15.5	17.5	13.5	10.0	12.0
28	19.0	15.5	17.0	23.5	18.5	21.0	19.0	15.0	17.0	13.5	10.5	12.0
29	19.0	16.0	17.5	24.0	19.0	21.5	18.5	14.5	16.5	14.5	11.5	12.5
30	19.0	16.0	17.5	23.5	19.0	21.5	17.5	15.5	16.5	13.0	12.5	12.5
31	---	---	---	23.0	19.0	21.0	18.0	14.5	16.5	---	---	---
MONTH	19.0	9.0	14.5	24.0	13.5	19.0	24.5	14.5	18.0	20.0	7.0	14.0

PEND OREILLE RIVER BASIN

12353000 CLARK FORK BELOW MISSOULA, MT

LOCATION.--Lat 46°52'09", long 114°07'33", in NW$^1/_4$NE$^1/_4$SE$^1/_4$ sec.21, T.13 N., R.20 W., Missoula County, Hydrologic Unit 17010204, on right bank 1.0 mi downstream from Bitterroot River, 4.5 mi west of Missoula, and at river mile 349.5.

DRAINAGE AREA.--9,003 mi^2.

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 1042: 1931. WSP 1246: Drainage area. WSP 1316: 1932(M), 1935(M), 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 3,083.88 ft above sea level (levels by U.S. Army Corps of Engineers).

REMARKS.--Records excellent. Some diurnal fluctuation at low flow caused by powerplant at Milltown 14.9 mi upstream. Diversions for irrigation of about 235,000 acres upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2030	2300	2460	1860	1480	2380	3010	8210	10800	3980	1270	1100
2	2070	2260	2460	2060	1990	2340	3060	9120	9620	3790	1190	1200
3	2070	2200	2410	1990	2460	2300	3220	10500	9110	3780	1180	1290
4	2090	2220	2270	1920	2340	2330	3230	11000	9390	3650	1170	1320
5	2060	2230	1990	1950	2170	2410	3580	11500	9680	3480	1170	1330
6	2030	2250	2050	1960	2130	2490	4300	10600	9970	3420	1180	1350
7	2070	2330	2290	1890	2110	2560	4440	9770	10500	3420	1180	1360
8	2050	2390	2290	1940	2090	2580	4220	8970	10800	3260	1140	1350
9	2100	2360	2140	1990	2120	2580	4000	8610	11000	3130	1130	1370
10	2140	2290	2070	1950	2150	2500	4190	8530	10100	3050	1130	1380
11	2160	2240	2120	1890	2100	2450	4620	8150	9320	2940	1150	1510
12	2150	2200	2130	1880	2020	2400	5130	7640	8610	2740	1150	1560
13	2140	2170	2190	1720	2050	2330	6410	7120	8790	2610	1170	1610
14	2120	2170	2180	1760	2090	2320	8930	6570	9570	2530	1160	1560
15	2070	2180	2100	2000	2130	2290	9230	6270	9470	2420	1160	1510
16	2050	2160	2160	2060	2130	2270	8490	6330	11200	2280	1150	1450
17	2070	2130	2230	2070	2010	2250	7980	7030	9820	2170	1130	1420
18	2110	2180	2290	1990	1920	2220	7860	8350	8610	2060	1130	1450
19	2100	2170	2320	1900	1800	2260	8720	9590	7980	2020	1110	1440
20	2080	2140	2280	1850	1730	2250	10000	10100	7680	1990	1130	1430
21	2070	2160	2240	1890	1880	2230	10600	10500	7070	1910	1100	1520
22	2040	2130	2190	1970	2040	2170	11200	11700	6540	1870	1100	1560
23	2020	2060	2110	1970	2100	2230	11700	13100	6410	1750	1110	1600
24	2000	1990	1990	1920	2250	2330	11100	12900	6070	1700	1140	1620
25	2010	2080	1890	1880	2250	2380	9790	11700	5650	1650	1150	1650
26	2000	2530	1760	1910	2150	2400	8820	11500	5370	1580	1160	1600
27	2070	3210	1640	1930	2100	2520	7900	11300	5010	1500	1140	1580
28	2250	3040	1570	1910	2220	2800	7720	11300	4610	1460	1110	1560
29	2490	2720	1510	1830	2440	3190	8680	13000	4390	1370	1100	1550
30	2480	2520	1490	1540	---	3200	8620	11900	4160	1320	1100	1560
31	2350	---	1520	1330	---	3070	---	11100	---	1300	1100	---
TOTAL	65540	69010	64340	58710	60450	76030	210750	303960	247300	76130	35490	43790
MEAN	2114	2300	2075	1894	2084	2453	7025	9805	8243	2456	1145	1460
MAX	2490	3210	2460	2070	2460	3200	11700	13100	11200	3980	1270	1650
MIN	2000	1990	1490	1330	1480	2170	3010	6270	4160	1300	1100	1100
AC-FT	130000	136900	127600	116500	119900	150800	418000	602900	490500	151000	70390	86860

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2000, BY WATER YEAR (WY)

MEAN	2735	2754	2503	2261	2513	3110	6419	14900	16830	5903	2309	2306
MAX	6617	5110	6064	4401	6697	7012	16500	30440	33970	16320	5530	5160
(WY)	1960	1960	1996	1934	1996	1972	1934	1997	1972	1975	1975	1965
MIN	1393	1471	1414	871	1108	1743	2302	5113	4619	1361	810	909
(WY)	1938	1938	1988	1937	1933	1937	1941	1941	1987	1931	1931	1937

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1930 - 2000	
ANNUAL TOTAL	1997420		1311500			
ANNUAL MEAN	5472		3583		5381	
HIGHEST ANNUAL MEAN					8832	1976
LOWEST ANNUAL MEAN					2582	1937
HIGHEST DAILY MEAN	30400	Jun 5	13100	May 23	54100	May 18 1997
LOWEST DAILY MEAN	1490	Dec 30	1100	Aug 21	580	Jan 19 1933
ANNUAL SEVEN-DAY MINIMUM	1630	Dec 25	1120	Aug 17	660	Dec 8 1932
INSTANTANEOUS PEAK FLOW			13500	May 23	55100	May 18 1997
INSTANTANEOUS PEAK STAGE			5.87	May 23	12.18	May 18 1997
INSTANTANEOUS LOW FLOW			1070	Aug 6	a388	Jan 18 1933
INSTANTANEOUS LOW STAGE			0.73	Aug 6	-0.05	Feb 3 1989
ANNUAL RUNOFF (AC-FT)	3962000		2601000		3899000	
10 PERCENT EXCEEDS	14100		9410		13400	
50 PERCENT EXCEEDS	2670		2170		2810	
90 PERCENT EXCEEDS	2060		1320		1630	

a--Gage height, 0.58 ft, result of freezeup.

PEND OREILLE RIVER BASIN

12354000 ST. REGIS RIVER NEAR ST. REGIS, MT

(National water-quality assessment program)

LOCATION.--Lat 47°17'49", long 115°07'18", in NW$^1/_4$NE$^1/_4$ sec.26, T.18 N., R.28 W., Mineral County, Hydrologic Unit 17010204, on left bank 50 ft downstream from road bridge, 500 ft upstream from Little Joe Creek, 1.2 mi west of St.Regis, and 1.7 mi upstream from mouth..

DRAINAGE AREA.--303 mi^2.

PERIOD OF RECORD.--August 2000.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1985 to September 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum 21.0° C, July 27, 29, 1987; minimum 0.0° C on many days during winter periods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
AUG 2000												
03...	0930	84	693	101	9.5	7.7	93	22.5	13.5	41	12	2.6

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
AUG 2000												
03...	.1	1.9	46	56	1.2	<.1	11	1	<.1	.002	.008	.003

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
AUG 2000											
03...	<.008	<1	<1	<10	<21	<1	<1	2	2	4	<1

PEND OREILLE RIVER BASIN

12354500 CLARK FORK AT ST. REGIS, MT

(National water-quality assessment program)

LOCATION.--Lat 47°18'07", long 115°05'11", in NW$^1/_4$SE$^1/_4$SW$^1/_4$ sec.19, T.18 N., R.27 W., Mineral County, Hydrologic Unit 17010204, on left bank at St. Regis, 0.4 mi downstream from St. Regis River, and at river mile 270.3.

DRAINAGE AREA.--10,709 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1246: Drainage area. WSP 1316: 1916-17, 1920, 1929-31(M), 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 2,600.37 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Nov. 29, 1933, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. Diversions for irrigation of about 244,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2700	3260	3780	2420	2140	3480	4790	12400	15500	5850	2110	1690
2	2720	3160	3680	2700	2520	3440	4810	12800	14500	5620	2050	1800
3	2760	3110	3640	2870	2960	3450	4960	14300	13400	5410	1990	1850
4	2760	3110	3520	2840	3330	3450	5260	15800	13200	5360	1950	1910
5	2770	3140	3340	2790	3250	3530	5700	16300	13500	5140	1920	1970
6	2750	3160	3130	2780	3120	3690	6310	15700	13900	5020	1900	2000
7	2730	3240	3150	2780	3060	3850	6710	14500	14100	4950	1900	2000
8	2780	3260	3320	2730	3030	3950	6640	13500	14600	4810	1890	2010
9	2940	3280	3300	2740	3040	3970	6450	12700	14700	4600	1840	2010
10	2960	3260	3160	2770	3080	3960	6460	12600	14400	4450	1820	2040
11	2910	3180	3070	2740	3110	3880	7050	12200	13200	4290	1840	2150
12	2900	3130	3110	2680	3090	3810	7870	11500	12300	4120	1840	2210
13	2890	3150	3230	2640	3020	3740	9220	10800	12000	3920	1820	2230
14	2870	3150	3230	2550	3070	3690	13100	10300	12500	3760	1820	2250
15	2840	3110	3210	2600	3120	3670	14900	9790	12800	3630	1810	2220
16	2800	3100	3170	2790	3100	3630	14000	9640	13400	3510	1790	2160
17	2780	3070	3280	2860	3070	3570	13000	10200	13800	3350	1790	2110
18	2800	3030	3430	2840	2950	3540	12700	11500	12300	3240	1770	2070
19	2820	3030	3510	2750	2830	3530	13200	13100	11300	3130	1760	2090
20	2810	3050	3490	2680	2710	3550	14700	14300	10700	3060	1730	2090
21	2810	3040	3400	2660	2700	3510	15900	15000	10200	2990	1750	2130
22	2790	3030	3320	2680	2820	3490	16900	16100	9500	2850	1710	2180
23	2760	3000	3250	2740	3000	3550	17500	17800	8970	2790	1690	2210
24	2740	2910	3150	2740	3110	3670	16900	18500	8640	2660	1690	2250
25	2720	2940	3000	2710	3220	3780	15300	17500	8200	2600	1710	2260
26	2750	3730	2880	2690	3230	3810	13700	16500	7730	2550	1710	2280
27	2840	4350	2740	2700	3170	3900	12600	16200	7330	2460	1700	2250
28	3080	4560	2570	2700	3150	4200	12000	16200	6930	2370	1700	2230
29	3380	4270	2450	2670	3280	4570	12100	16900	6450	2310	1670	2200
30	3410	3970	2380	2560	---	4880	12700	17100	6160	2230	1660	2210
31	3340	---	2370	2220	---	4870	---	16300	---	2150	1660	---
TOTAL	88910	98780	98260	83620	87280	117610	323430	438030	346210	115180	55990	63060
MEAN	2868	3293	3170	2697	3010	3794	10780	14130	11540	3715	1806	2102
MAX	3410	4560	3780	2870	3330	4880	17500	18500	15500	5850	2110	2280
MIN	2700	2910	2370	2220	2140	3440	4790	9640	6160	2150	1660	1690
MED	2800	3140	3230	2710	3070	3690	12400	14300	12400	3510	1790	2140
AC-FT	176400	195900	194900	165900	173100	233300	641500	868800	686700	228500	111100	125100
CFSM	.27	.31	.30	.25	.28	.35	1.01	1.32	1.08	.35	.17	.20
IN.	.31	.34	.34	.29	.30	.41	1.12	1.52	1.20	.40	.19	.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2000, BY WATER YEAR (WY)*

MEAN	3433	3597	3487	3144	3505	4317	9288	20340	21630	7737	3168	3003
MAX	8042	7047	10710	8520	10660	11490	24880	42140	42410	19460	6747	6252
(WY)	1960	1934	1934	1934	1996	1972	1934	1997	1972	1975	1975	1965
MIN	1854	1942	1909	1474	1592	2199	3333	7190	6021	1998	1454	1351
(WY)	1938	1932	1937	1937	1936	1937	1937	1941	1987	1931	1931	1937

12354500 CLARK FORK AT ST. REGIS, MT--Continued

(National water-quality assessment program)

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1930 - 2000*	
ANNUAL TOTAL	2792440		1916360			
ANNUAL MEAN	7651		5236		7225	
HIGHEST ANNUAL MEAN					11560	1997
LOWEST ANNUAL MEAN					3420	1941
HIGHEST DAILY MEAN	39400	Jun 5	18500	May 24	68500	May 18 1997
LOWEST DAILY MEAN	2370	Dec 31	1660	Aug 30	800	Feb 3 1989
ANNUAL SEVEN-DAY MINIMUM	2470	Sep 22	1680	Aug 26	1130	Jan 31 1936
INSTANTANEOUS PEAK FLOW			18700	May 24	a68900	May 18 1997
INSTANTANEOUS PEAK STAGE			11.18	May 24	20.27	May 18 1997
INSTANTANEOUS LOW FLOW					b732	Feb 3 1989
ANNUAL RUNOFF (AC-FT)	5539000		3801000		5234000	
ANNUAL RUNOFF (CFSM)	.71		.49		.67	
ANNUAL RUNOFF (INCHES)	9.70		6.66		9.17	
10 PERCENT EXCEEDS	20100		13400		17900	
50 PERCENT EXCEEDS	3620		3150		3710	
90 PERCENT EXCEEDS	2780		2010		2210	

*--Statistics not computed prior to 1930 as the 1924 to 1929 period of record was estimated.
a--Also May 24, 1948. Gage height, 19.96 ft.
b--Gage height, 3.29 ft, result of upstream freezeup.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 1998 to current year.

REMARKS.--Sampled as part of the Northern Rockies Intermontane Basins study of the USGS National Water-Quality Assessment program. Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)
OCT 1999											
18...	1415	2790	705	11.7	103	7.6	268	--	6.5	120	34
NOV											
30...	1300	3970	694	11.8	99	8.1	218	8.0	4.0	100	28
JAN 2000											
24...	1400	2730	699	13.4	106	8.0	267	3.0	2.0	120	32
MAR											
06...	1400	3740	686	11.4	105	8.3	244	11.0	7.0	110	29
APR											
10...	1400	6470	696	11.2	106	8.2	184	23.0	9.0	78	21
MAY											
09...	1215	12700	690	10.4	99	8.1	134	8.0	9.0	59	16
24...	1230	18700	691	9.8	101	7.8	95	25.5	12.5	45	13
JUN											
20...	0930	10700	697	9.2	98	8.1	138	14.0	14.0	60	16
AUG											
01...	1430	2100	693	9.4	118	8.4	218	--	22.0	110	29
30...	1400	1660	691	9.3	105	8.5	241	24.0	16.5	110	29

DATE	CALCIUM TOTAL RECOVERABLE (MG/L AS CA) (00916)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	MAGNESIUM, TOTAL RECOVERABLE (MG/L AS MG) (00927)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	POTASSIUM, TOTAL RECOVERABLE (MG/L AS K) (00937)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM, TOTAL RECOVERABLE (MG/L AS NA) (00929)	SODIUM ADSORPTION RATIO (00931)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)
OCT 1999											
18...	33	9.6	9.5	1.8	1.8	7.8	7.5	.3	115	140	.0
NOV											
30...	--	7.8	--	1.5	--	7.6	--	.3	94	115	.0
JAN 2000											
24...	32	9.1	9.2	1.5	1.7	9.3	9.6	.4	116	141	.0
MAR											
06...	30	8.4	8.4	1.6	1.7	8.8	8.6	.4	97	116	.8
APR											
10...	22	6.1	6.0	1.2	1.2	6.7	6.5	.3	80	97	.0
MAY											
09...	15	4.6	4.6	.8	.9	4.6	4.5	.3	60	73	.0
24...	12	3.4	3.4	.7	.8	2.1	2.5	.1	43	53	.0
JUN											
20...	16	4.8	4.9	1.0	.9	3.5	3.3	.2	64	78	.0
AUG											
01...	26	8.6	7.9	1.3	1.4	5.8	5.5	.2	102	122	1.0
30...	29	8.8	8.7	1.6	1.7	7.1	7.0	.3	111	132	2.0

12354500 CLARK FORK AT ST. REGIS, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS TOTAL (MG/L AS P) (00665)
OCT 1999											
18...	3.1	.2	11	20	.1	.2	.009	.021	.003	<.006	E.005
NOV											
30...	2.9	.1	12	16	<.1	.2	<.002	.090	.003	E.004	.014
JAN 2000											
24...	3.5	.2	11	23	E.06	.1	.002	.093	.002	E.003	.009
MAR											
06...	3.4	.2	11	20	.1	.3	<.002	.067	.003	.009	.030
APR											
10...	2.3	.2	10	13	E.08	.3	.004	.041	.001	.012	.032
MAY											
09...	1.4	.2	8.4	8.5	E.09	.2	<.002	.047	<.001	E.004	.020
24...	1.0	<.1	7.5	3.7	.1	.3	.006	.034	<.001	.007	.038
JUN											
20...	1.2	<.1	7.7	6.2	E.07	.2	.002	.024	.001	E.005	.013
AUG											
01...	2.7	.1	9.6	10	E.08	.4	.005	<.005	<.001	<.006	.009
30...	3.2	.1	7.7	12	.1	.1	.003	<.005	<.001	E.003	E.007

DATE	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ANTIMONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DISSOLVED (UG/L AS AS) (01000)
OCT 1999											
18...	.002	1.6	.2	156	.21	1190	<1	E15	<1	<1	2
NOV											
30...	.001	2.1	.2	133	.19	1500	--	--	--	--	--
JAN 2000											
24...	.001	1.4	.2	160	.22	1190	7	E24	<1	<1	2
MAR											
06...	.0060	--	--	140	.20	1510	1	83	<1	<1	2
APR											
10...	.0060	--	--	109	.16	1990	7	185	<1	<1	E2
MAY											
09...	.0020	--	--	81	.12	2910	23	127	<1	<1	E.8
24...	.0080	--	--	57	.08	3030	18	646	<1	<1	E.7
JUN											
20...	<.001	--	--	79	.12	2600	14	84	<1	<1	E.9
AUG											
01...	.0020	--	--	128	.18	748	17	<28	<1	<1	2
30...	<.001	--	--	137	.19	632	<1	E20	<1	<1	2

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, DISSOLVED (UG/L AS CO) (01035)
OCT 1999											
18...	E2	110	103	<1	<5	--	<1	<.1	<.8	<1	<1
NOV											
30...	--	--	--	--	--	--	--	--	--	--	--
JAN 2000											
24...	E1	103	98	<1	<5	--	<1	<.1	<.8	<1	<1
MAR											
06...	E2	85	87	<1	<5	--	<1	<.1	<1	<1	<1
APR											
10...	E1	70	68	<1	<5	--	<1	<.1	<.8	<1	<1
MAY											
09...	<3	63	61	<1	<5	E7	<1	<.1	<.8	<1	<1
24...	<3	42	54	<1	<5	<12	<1	<.1	<.8	<1	<1
JUN											
20...	<3	64	63	<1	<5	<12	<1	<.1	<.8	<1	<1
AUG											
01...	<3	105	102	<1	<5	E9	<1	<.1	<.8	<1	<1
30...	E2	108	107	<1	<5	E12	<1	<.1	<.8	<1	<1

E--Estimated.

12354500 CLARK FORK AT ST. REGIS, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT 1999										
18...	<2	1	<20	E7	27	<1	<1	--	E5	2
NOV										
30...	--	--	--	E7	--	--	--	--	--	E1
JAN 2000										
24...	<2	1	<20	<10	32	<1	<1	--	E4	4
MAR										
06...	<2	1	<20	13	111	<1	<1	--	<7	5
APR										
10...	<2	<1	<20	11	199	<1	E.6	--	<7	3
MAY										
09...	<2	<1	<20	11	161	<1	<1	2	<7	2
24...	E1	<1	<20	E10	639	<1	E.7	1	<7	2
JUN										
20...	<2	<1	<20	E8	104	<1	<1	2	<7	2
AUG										
01...	<2	1	<20	<10	29	<1	E.6	3	<7	3
30...	<2	1	<20	E6	35	<1	<1	4	E4.	3

DATE	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
OCT 1999										
18...	7	<.3	1	<1	<1	<2	<2	<3	<1	<1
NOV										
30...	--	--	--	--	--	--	--	--	--	--
JAN 2000										
24...	8	<.3	1	2	1	<2	<2	<3	<1	<1
MAR										
06...	28	<.3	<1	<1	<1	E1	<2	<3	<1	<1
APR										
10...	28	<.3	<1	<1	<1	<2	<2	<3	<1	<1
MAY										
09...	16	<.3	<1	<1	<1	<2	<.7	<3	<1	<1
24...	43	<.3	<1	<1	<1	<2	<.7	<3	<1	<1
JUN										
20...	10	<.3	<1	2	<1	<2	<.7	<3	<1	<1
AUG										
01...	17	<.3	<1	1	<1	<2	<.7	<3	<1	<1
30...	18	<.3	<1	<1	<1	<2	<.7	<3	<1	<1

DATE	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR) (01082)	THAL-LIUM, DIS-SOLVED (UG/L AS TL) (01057)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999										
18...	--	121	--	2	--	<1	<31	2	15	88
NOV										
30...	--	--	--	--	--	--	--	4	43	76
JAN 2000										
24...	--	121	--	2	--	2	<31	--	--	--
MAR										
06...	--	111	--	2	--	3	E18	8	81	78
APR										
10...	--	72	--	1	--	<1	E20	11	192	87
MAY										
09...	50	47	<.9	<1	<1	4	<31	11	377	84
24...	37	37	<.9	<1	<1	3	<31	53	2680	63
JUN										
20...	57	52	<.9	<1	<1	<1	<31	6	173	75
AUG										
01...	90	83	<.9	<1	<1	4	<31	1	5.7	83
30...	98	94	<.9	1	<1	1	<31	2	9.0	83

E--Estimated.

PEND OREILLE RIVER BASIN

12354500 CLARK FORK AT ST. REGIS, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DISSOLVED (UG/L) (34253)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
OCT 1999 18...	1415	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003

DATE	CHLORPYRIFOS DISSOLVED (UG/L) (38933)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DIAZINON, DISSOLVED (UG/L) (39572)	DIELDRIN DISSOLVED (UG/L) (39381)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
OCT 1999 18...	<.004	<.004	<.002	<.002	107	<.002	<.001	<.017	<.002	<.004

DATE	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DISSOLVED (UG/L) (39341)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALATHION, DISSOLVED (UG/L) (39532)	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLACHLOR WATER DISSOLV (UG/L) (39415)	METRIBUZIN SENCOR WATER DISSOLV (UG/L) (82630)
OCT 1999 18...	<.003	<.003	98	<.004	<.002	<.005	<.001	<.006	<.002	<.004

DATE	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARATHION, DISSOLVED (UG/L) (39542)	PEBULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PERMETHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PROMETON, WATER, DISS, REC (UG/L) (04037)	PRONAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT 1999 18...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003

DATE	PROPACHLOR, WATER, DISS, REC (UG/L) (04024)	PROPANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PROPARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SIMAZINE, WATER, DISS, REC (UG/L) (04035)	TEBUTHIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TERBACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TERBUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIOBENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIALLATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRIFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT 1999 18...	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.001	<.002

PEND OREILLE RIVER BASIN

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA

LOCATION.--Lat 49°00'06", long 114°28'27", Hydrologic Unit 17010206, on leftt bank 200 ft north of international boundary at Flathead, British Columbia, 1.6 mi upstream from Sage Creek, 6.5 mi northwest of Trail Creek, MT, and at river mile 216.6.

DRAINAGE AREA.--427 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1929 to June 1995 (no winter records prior to 1952). Prior to 1934, published as Flathead River near Trail Creek, MT. October 1970 to September 1972, published as North Fork Flathead River at Flathead British Columbia. October 1999 to current year gage re-established and operated by USGS at site on left bank in British Columbia.

GAGE.--Water-stage recorder. Datum of gage is 3,969 ft above North American Vertical Datum of 1988 (3,964.95 ft. above NGVD 1929). Prior to Sept. 1, 1949, nonrecording gage and Sept. 1, 1949 to Oct. 4, 1964, water-stage recorder at site 1,200 ft upstream at datum 11.01 ft higher. Oct. 5, 1964, to Aug. 1, 1973, water-stage recorder at site on left bank 155 ft upstream at datum 1.79 ft higher. Aug. 2, 1973 to June 28, 1995 operated by Water Survey Canada at site on right bank at datum 3.21 ft. higher. October 1999 to current year at site 200 ft upstream of International Border in British Columbia on left bank.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e240	563	649	423	e250	183	243	1990	1970	1190	388	233
2	e230	484	619	388	e260	182	265	2880	1830	1120	376	251
3	e220	445	587	371	271	182	273	3600	1880	1060	367	289
4	e215	480	544	425	270	189	294	3890	1970	997	360	262
5	e210	438	511	383	e260	212	371	3070	2220	937	354	247
6	e205	419	521	355	e250	201	373	2460	2550	939	345	240
7	e200	423	521	352	243	193	362	2050	3060	926	368	236
8	e250	423	497	337	237	189	362	1860	2980	861	349	232
9	e370	427	482	310	264	187	404	1890	3290	843	333	260
10	e520	436	477	295	236	184	488	1930	2690	849	325	278
11	e450	478	470	288	214	183	576	1780	2240	798	344	268
12	e480	972	471	314	261	181	700	1640	1960	760	329	249
13	e470	6880	461	324	219	179	899	1580	2250	727	314	236
14	e550	6220	437	329	206	188	871	1600	2210	703	305	225
15	e650	3400	444	317	261	181	792	1650	2800	676	297	219
16	e600	2200	439	307	249	180	758	1920	2740	651	291	214
17	e550	1710	420	316	227	180	778	2520	2540	621	284	209
18	e500	1440	425	314	220	177	854	3420	2300	598	277	204
19	e470	1250	391	e280	230	181	1010	4290	2290	577	271	205
20	e440	1120	374	e330	219	171	1280	4140	2100	564	267	207
21	e420	1010	382	e400	234	174	1560	4740	1900	546	261	213
22	e400	920	395	e380	224	172	1890	6530	1880	529	256	210
23	e380	850	366	363	216	209	2010	7270	1740	513	250	205
24	e370	802	356	352	207	213	1810	5700	1620	504	245	201
25	e360	766	346	e320	194	206	1560	4580	1590	488	239	198
26	e350	729	321	335	192	202	1390	4210	1430	474	232	196
27	371	673	276	297	191	208	1380	3380	1360	453	229	194
28	386	646	306	271	195	227	1620	3470	1300	432	228	191
29	404	607	374	256	188	234	1820	3130	1270	417	225	190
30	392	617	463	255	---	235	1780	2610	1230	405	228	227
31	464	---	469	e230	---	235	---	2250	---	398	228	---
TOTAL	12117	37828	13794	10217	6688	6018	28773	98030	63190	21556	9165	6789
MEAN	391	1261	445	330	231	194	959	3162	2106	695	296	226
MAX	650	6880	649	425	271	235	2010	7270	3290	1190	388	289
MIN	200	419	276	230	188	171	243	1580	1230	398	225	190
AC-FT	24030	75030	27360	20270	13270	11940	57070	194400	125300	42760	18180	13470
CFSM	.92	2.95	1.04	.77	.54	.45	2.25	7.41	4.93	1.63	.69	.53
IN.	1.06	3.30	1.20	.89	.58	.52	2.51	8.54	5.51	1.88	.80	.59

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2000, BY WATER YEAR (WY)*

MEAN	332	354	244	188	174	203	927	3541	3084	989	387	293
MAX	1285	1261	881	458	345	685	2957	5584	6691	2418	937	785
(WY)	1948	2000	1976	1981	1971	1986	1934	1948	1974	1954	1976	1951
MIN	138	124	115	107	97.6	108	189	1540	824	279	188	164
(WY)	1937	1937	1985	1988	1979	1988	1970	1977	1977	1977	1931	1931

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

SUMMARY STATISTICS	FOR 2000 WATER YEAR		WATER YEARS 1929 - 2000*	
ANNUAL TOTAL	314165			
ANNUAL MEAN	858		916	
HIGHEST ANNUAL MEAN			1376	1974
LOWEST ANNUAL MEAN			398	1977
HIGHEST DAILY MEAN	7270	May 23	16800	Jun 7 1995
LOWEST DAILY MEAN	171	Mar 20	62	Jan 2 1977
ANNUAL SEVEN-DAY MINIMUM	176	Mar 16	71	Dec 31 1976
INSTANTANEOUS PEAK FLOW	9360	Nov 13	a16300	Jun 8 1964
INSTANTANEOUS PEAK STAGE	9.04	Nov 13	b12.86	Jun 7 1995
INSTANTANEOUS LOW FLOW	144	Feb 20		
ANNUAL RUNOFF (AC-FT)	623100		663800	
ANNUAL RUNOFF (CFSM	2.01		2.15	
ANNUAL RUNOFF (INCHES)	27.37		29.16	
10 PERCENT EXCEEDS	2210		3000	
50 PERCENT EXCEEDS	394		330	
90 PERCENT EXCEEDS	205		148	

*--During periods of operation (no winter records prior to 1952).
a--Gage height, 8.00 ft, site and datum then in use.
b--From floodmark to present datum.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-50, 1965, 1970, 1975-93 and August 1999 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1974 to September 1981.
WATER TEMPERATURE: November 1974 to September 1991.
SUSPENDED-SEDIMENT DISCHARGE: April 1975 to October 1978, August 1985 to June 1991.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1975-81): Maximum, 309 microsiemens per centimeter (µS/cm) at 25.0°C, Jan. 12, 28, 1975, Jan. 20, 1980; minimum, 130 µS/cm at 25.0°C, May 20, 1976.
WATER TEMPERATURE (water years 1975-91): Maximum 19.5°C, Aug 2, 1977; minimum 0.0°C on many days during winters.
SEDIMENT CONCENTRATION (water years 1975-78, 1985-91): Maximum daily mean, 1,310 mg/L, June 20,1975; minimum daily mean, 1 mg/L on many days most years.
SEDIMENT LOAD (water years 1975-78, 1985-91): Maximum daily, 36,100 tons, June 20, 1975; minimum daily, 0.24 ton, Feb. 1, 23, 1988.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
26...	0930	352	8.3	247	11.5	--	<.001
APR 2000							
20...	1400	1240	7.9	222	19.5	6.0	<.001
MAY							
18...	1030	3640	8.2	203	16.0	7.5	<.001
JUL							
14...	1045	704	8.4	211	19.0	10.5	<.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
26...	<.005	E.10	--	<.008	3	2.9	78
APR 2000							
20...	.017	.16	<.001	.070	83	278	74
MAY							
18...	.012	.41	.001	.152	185	1820	63
JUL							
14...	<.005	<.10	.002	E.005	6	11	87

DATE	TIME	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT 1999									
26...	0930	1.3	<3	<.1	<1	<1	<1	<2	<31
MAY 20									
18...	1030	7.2	<3	E.06	<1	3	2	2	12

E--Estimated.

PEND OREILLE RIVER BASIN

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT

LOCATION.--Lat 48°29'44", long 114°07'36", in $NE^1/_4SW^1/_4NW^1/_4$ sec.35, T.32 N., R.20 W., Flathead County, Hydrologic Unit 17010206, on right bank 1.5 mi downstream from Canyon Creek, 3.8 mi upstream from Middle Fork, 8.8 mi northeast of Columbia Falls, and at river mile 162.1.

DRAINAGE AREA.--1,548 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1910 to September 1917 (no winter records in water years 1913, 1916, 1917), April 1929 to February 1935 (incomplete), June 1935 to current year. Monthly discharge only for some periods, published in WSP 1316. Published as Flathead River near Columbia Falls 1915-17, 1929-70.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1246: 1911, 1912(M), 1915-17(M), 1929 (M), 1938-39(M), 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 3,145.59 ft above sea level. September 1910 to September 1917 and April to August 1929, nonrecording gages, and May 1, 1930, to Sept. 30, 1962, water-stage recorder, all at site 2.7 mi downstream at different datums.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. A few small diversions from tributaries for irrigation of hay meadows upstream from station. Bureau of Reclamation satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	907	1830	2020	e1100	e700	765	1540	6760	7100	4780	1820	947
2	893	1830	1970	e1050	e800	758	1680	8130	6460	4630	1760	1060
3	876	1700	1900	e900	e850	764	1740	9550	6320	4400	1730	1190
4	859	1760	1770	e950	e800	797	1870	10400	6610	4170	1690	1170
5	846	1750	1610	e1000	e750	882	2630	9920	7270	3900	1640	1110
6	838	1680	1670	1030	e750	944	2620	8830	8210	3700	1600	1080
7	831	1690	1680	1020	e730	917	2410	7750	9420	3800	1580	1060
8	868	1670	1560	1030	e730	891	2320	6890	9740	3580	1580	1030
9	1290	1670	1550	1040	e750	876	2540	6580	10300	3450	1520	1070
10	1830	1680	1520	e900	e750	860	2980	6830	10000	3420	1470	1130
11	1660	1700	1500	e850	e650	850	3300	6450	8780	3300	1480	1240
12	1730	1880	1530	e900	e600	843	3800	5910	7640	3170	1470	1170
13	1740	6090	1600	e950	e650	830	4630	5510	7700	3090	1410	1130
14	2030	13000	1490	1030	e650	856	4470	5300	7790	3050	1350	1110
15	2280	10100	1490	1050	e650	856	4100	5320	8950	3010	1300	1090
16	2100	7530	1520	e950	e670	836	3910	5710	9660	2930	1250	1080
17	1910	6030	1460	e900	e700	837	4080	6780	9000	2820	1220	1050
18	1780	5130	1470	e800	e700	817	4410	8480	8230	2680	1180	1030
19	1670	4400	1370	e700	e630	838	4990	10000	7870	2580	1140	1020
20	1570	3890	1240	e600	e570	811	5900	10400	7600	2510	1100	1020
21	1480	3520	1260	e700	e600	799	6970	10900	6970	2440	1080	1030
22	1410	3180	1230	e800	e650	800	8030	13400	7020	2370	1050	1020
23	1350	2910	1260	e750	e650	879	8490	16100	6900	2310	1020	971
24	1290	2730	1220	e700	e700	1010	7790	14900	6490	2250	995	941
25	1240	2630	1180	e650	e670	1010	6760	13000	6190	2190	1000	918
26	1270	2510	1120	e750	e650	1010	5920	12000	5650	2120	969	897
27	1370	2350	979	e800	e650	1100	5480	10900	5270	2050	940	885
28	1570	2180	917	e800	e700	1300	5830	10100	5010	1980	931	870
29	1700	2060	e900	e750	e750	1370	6580	9730	4950	1920	921	851
30	1670	1970	e950	e700	---	1380	6550	8800	4870	1880	928	893
31	1640	---	e1070	e650	---	1440	---	7960	---	1850	930	---
TOTAL	44498	103050	44006	26800	20100	28926	134320	279290	223970	92330	40054	31063
MEAN	1435	3435	1420	865	693	933	4477	9009	7466	2978	1292	1035
MAX	2280	13000	2020	1100	850	1440	8490	16100	10300	4780	1820	1240
MIN	831	1670	900	600	570	758	1540	5300	4870	1850	921	851
AC-FT	88260	204400	87290	53160	39870	57370	266400	554000	444200	183100	79450	61610
CFSM	.93	2.22	.92	.56	.45	.60	2.89	5.82	4.82	1.92	.83	.67
IN.	1.07	2.48	1.06	.64	.48	.70	3.23	6.71	5.38	2.22	.96	.75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2000, BY WATER YEAR (WY)

MEAN	1196	1218	956	766	746	887	3295	10010	10090	4115	1663	1177
MAX	3650	3733	3388	2131	2017	2597	6877	15160	20780	9262	3232	2653
(WY)	1952	1990	1996	1974	1996	1986	1943	1954	1974	1954	1976	1959
MIN	584	486	505	398	370	406	833	4986	3353	1436	747	639
(WY)	1988	1988	1953	1988	1944	1944	1975	1944	1941	1977	1941	1994

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1940 - 2000	
ANNUAL TOTAL	1241795		1068407			
ANNUAL MEAN	3402		2919		3016	
HIGHEST ANNUAL MEAN					4721	1974
LOWEST ANNUAL MEAN					1383	1944
HIGHEST DAILY MEAN	19100	May 27	16100	May 23	58000	Jun 9 1964
LOWEST DAILY MEAN	530	Feb 12	570	Feb 20	200	Nov 24 1993
ANNUAL SEVEN-DAY MINIMUM	550	Feb 17	639	Feb 19	289	Nov 22 1993
INSTANTANEOUS PEAK FLOW			16500	May 23	a69100	Jun 9 1964
INSTANTANEOUS PEAK STAGE			8.78	May 23	b18.60	Jun 9 1964
INSTANTANEOUS LOW FLOW					198	Jan 8 1953
INSTANTANEOUS LOW STAGE					c0.86	Jan 8 1953
ANNUAL RUNOFF (AC-FT)	2463000		2119000		2185000	
ANNUAL RUNOFF (CFSM)	2.20		1.89		1.95	
ANNUAL RUNOFF (INCHES)	29.84		25.67		26.47	
10 PERCENT EXCEEDS	9230		7760		8630	
50 PERCENT EXCEEDS	1690		1560		1220	
90 PERCENT EXCEEDS	648		756		560	

a--From rating curve extended above 37,000 ft^3/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.--Water years 1950, 1970, 1976 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to October 1978.
WATER TEMPERATURE: October 1975 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1975 to November 1978.
INSTRUMENTATION.--Temperature recorder since Oct. 1, 1975.
REMARKS.--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 (water years 1976-79): Maximum daily, 246 microsiemens per centimeter (µS/cm) at 25.0°C, Dec. 31, 1976; minimum daily, 128 microsiemens per centimeter (µS/cm) at 25.0°C, June 30, July 1, 1976.
WATER TEMPERATURE: Maximum, 23.0°C, Aug. 12, 1997; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATION (water years 1976-79): Maximum daily mean, 931 mg/L, May 11, 1976; minimum daily mean, 1 mg/L on many days each year.
SEDIMENT LOAD (water years 1976-79): Maximum daily, 56,800 tons, May 11, 1976; minimum daily, 1.1 tons, Mar. 3, 1978.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 19.0°C, Aug. 1; minimum, 0.0°C on many days from December to February and Apr. 14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
22...	1200	1420	8.1	193	8.5	5.5	<.001
APR 2000							
12...	1400	3800	8.4	159	11.0	5.5	<.001
MAY							
09...	1300	6510	8.1	159	7.5	6.5	<.001
JUL							
13...	1215	3080	8.1	162	20.5	14.0	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
22...	.012	<.10	<.001	<.008	1	3.8	73
APR 2000							
12...	.031	.34	<.001	.025	28	287	89
MAY							
09...	.044	E.10	.002	.015	20	352	81
JUL							
13...	.016	E.10	.002	E.005	5	42	86

E--Estimated.

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT 1999										
22...	1200	100	28	7.0	.3	.0	.9	98	E.2	<.1
MAY 2000										
09...	1300	82	23	5.8	.2	.0	.8	81	<.3	<.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
OCT 1999									
22...	4.6	7.7	<3	<.1	<1	2	<1	<2	<31
MAY 2000									
09...	5.0	3.5	<3	E.1	<1	3	<1	<1	5

E--Estimated.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.0	6.5	7.0	5.0	4.0	4.5	2.5	2.5	2.5	.0	.0	.0
2	7.0	5.5	6.5	6.0	3.5	4.5	3.0	2.5	2.5	.5	.0	.0
3	6.5	5.0	6.0	4.5	3.0	3.5	2.5	2.0	2.5	.5	.0	.0
4	7.0	5.0	6.5	5.5	4.5	5.0	2.5	1.0	1.5	.5	.0	.0
5	7.0	5.5	6.5	5.0	4.0	4.0	1.0	.0	.5	.5	.0	.5
6	7.5	6.0	7.0	5.0	3.5	4.5	2.0	.5	1.5	1.0	.5	1.0
7	7.5	7.0	7.0	6.0	5.0	5.5	2.0	1.5	2.0	1.0	.5	1.0
8	8.5	7.0	7.5	5.5	4.5	5.0	1.5	.5	1.0	1.0	.5	1.0
9	8.0	7.0	7.5	5.5	4.5	5.0	.5	.0	.5	1.0	.0	.5
10	7.0	6.0	6.5	6.0	5.5	5.5	1.5	.5	1.0	.0	.0	.0
11	7.5	6.5	7.0	6.0	5.5	6.0	1.5	.0	1.0	.5	.0	.0
12	7.5	6.5	7.0	7.5	6.0	6.5	2.0	1.0	1.5	.5	.0	.5
13	8.0	7.5	7.5	8.0	6.0	7.0	2.0	1.0	2.0	.5	.0	.0
14	8.0	7.0	7.5	6.0	5.0	5.5	1.5	.5	1.0	.5	.0	.5
15	7.0	5.5	6.0	5.0	3.5	4.0	.5	.0	.0	.5	.0	.5
16	5.5	4.0	5.0	4.0	3.5	3.5	2.5	.5	1.5	.5	.0	.0
17	5.5	4.5	5.0	4.0	3.5	3.5	2.0	1.0	1.5	1.0	.5	.5
18	5.5	4.5	5.0	4.0	3.5	3.5	2.0	1.0	1.5	1.0	.5	.5
19	5.5	4.5	5.0	3.5	2.5	3.0	1.5	.0	.5	.5	.0	.5
20	5.5	4.5	5.0	4.0	3.0	3.5	.0	.0	.0	.5	.0	.0
21	6.0	4.0	5.0	4.0	3.0	3.5	.5	.0	.0	.0	.0	.0
22	6.5	5.0	6.0	3.0	2.5	2.5	1.0	.0	.0	.0	.0	.0
23	6.5	5.5	6.0	2.5	2.0	2.5	1.5	.5	1.0	.0	.0	.0
24	6.5	5.0	6.0	2.5	1.0	2.0	1.5	1.0	1.0	.0	.0	.0
25	6.0	5.0	5.5	2.0	1.0	2.0	1.5	1.0	1.0	.0	.0	.0
26	7.0	6.0	6.5	2.5	1.5	2.0	1.0	.5	.5	.0	.0	.0
27	7.0	6.0	6.5	2.0	1.0	1.5	.5	.0	.0	.0	.0	.0
28	6.0	5.5	6.0	3.0	1.0	1.5	.5	.0	.0	.0	.0	.0
29	6.0	5.5	6.0	3.0	2.0	2.5	.0	.0	.0	.0	.0	.0
30	6.0	5.5	5.5	2.5	2.0	2.5	.0	.0	.0	.5	.0	.0
31	6.0	5.0	5.5	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	8.5	4.0	6.0	8.0	1.0	4.0	3.0	0.0	1.0	1.0	0.0	0.0

PEND OREILLE RIVER BASIN

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	5.0	3.5	4.0	6.0	4.0	5.0	8.5	6.0	7.5
2	.5	.0	.0	4.5	3.0	3.5	6.0	4.0	5.0	8.0	6.0	7.0
3	.5	.0	.5	5.0	3.5	4.0	6.0	3.5	5.0	7.0	5.5	6.0
4	.5	.0	.0	4.5	3.5	4.0	6.0	4.0	5.0	6.5	5.0	6.0
5	.0	.0	.0	5.0	3.5	4.0	5.0	3.5	4.0	6.5	4.5	5.5
6	.0	.0	.0	4.0	2.5	3.0	5.0	2.5	4.0	7.0	5.0	6.0
7	.0	.0	.0	4.0	2.5	3.0	5.5	3.0	4.0	7.0	4.5	6.0
8	.5	.0	.0	3.5	2.5	3.0	6.5	4.0	5.0	8.0	4.5	6.0
9	1.5	.5	1.0	3.5	2.5	3.0	7.5	4.5	6.0	8.0	6.5	7.0
10	1.5	.5	1.0	4.0	2.5	3.5	7.0	5.0	6.0	7.5	6.0	6.5
11	.5	.0	.0	4.0	2.5	3.5	7.0	4.5	5.5	7.0	5.0	6.0
12	.0	.0	.0	4.5	2.5	3.5	7.5	4.5	6.0	7.5	5.5	6.5
13	.5	.0	.0	4.5	3.0	3.5	7.0	2.0	4.5	9.0	5.5	7.0
14	.0	.0	.0	4.0	2.5	3.0	2.0	.0	.5	8.5	7.0	8.0
15	.5	.0	.0	4.0	2.5	3.5	4.5	.5	2.0	8.5	6.5	7.5
16	.5	.0	.0	3.5	2.0	3.0	6.0	3.5	4.5	10.0	7.0	8.5
17	.5	.0	.0	3.0	1.5	2.5	7.5	5.0	6.0	9.0	7.0	8.0
18	.5	.0	.0	3.0	2.0	2.5	8.0	4.5	6.5	9.5	7.5	8.5
19	.5	.0	.0	3.5	2.5	3.0	8.5	5.5	7.0	9.0	6.5	7.5
20	.5	.0	.0	4.0	2.0	3.5	8.0	5.0	6.5	8.5	6.5	7.0
21	.0	.0	.0	4.5	3.0	3.5	7.0	5.0	6.0	8.5	7.0	7.5
22	.5	.0	.0	5.0	2.5	3.5	6.5	4.0	5.0	9.5	7.0	8.0
23	2.5	.5	1.5	5.0	4.0	4.5	5.0	3.5	4.0	9.0	7.0	8.5
24	2.5	1.5	2.0	5.0	3.5	4.5	5.0	3.5	4.5	9.0	6.5	8.0
25	2.5	1.0	1.5	4.5	3.0	4.0	5.0	3.5	4.0	10.0	7.5	8.5
26	2.0	1.0	1.5	5.5	3.0	4.5	7.0	3.5	5.0	9.0	7.5	8.0
27	2.0	1.0	1.5	6.0	4.0	5.5	8.5	5.0	6.5	9.0	7.5	8.0
28	3.5	2.0	2.5	6.0	4.0	4.5	8.0	6.0	6.5	8.5	7.0	8.0
29	4.0	2.5	3.5	4.0	3.0	3.5	7.0	4.5	5.5	9.0	6.5	7.5
30	---	---	---	5.5	3.0	4.0	8.5	5.0	6.5	8.0	6.5	7.5
31	---	---	---	6.0	4.0	5.0	---	---	---	7.5	6.5	7.0
MONTH	4.0	0.0	0.5	6.0	1.5	3.5	8.5	0.0	5.0	10.0	4.5	7.0

		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.0	5.0	7.0	15.0	12.0	13.5	19.0	16.0	17.5	13.0	11.5	12.0
2	10.0	7.5	8.5	15.0	11.5	13.0	18.5	16.0	17.5	13.0	11.5	12.0
3	11.0	7.5	9.0	14.0	10.5	11.5	18.5	16.0	17.5	12.0	11.0	11.5
4	11.5	8.0	9.5	11.0	9.5	10.5	18.5	16.5	17.5	12.5	10.0	11.5
5	11.0	8.5	9.5	13.0	9.5	11.0	18.0	15.5	17.0	11.5	10.0	10.5
6	11.5	8.5	10.0	13.0	11.0	12.0	18.5	16.0	17.5	11.0	10.5	11.0
7	12.0	9.0	10.5	14.0	10.5	12.0	18.5	16.0	17.0	13.0	10.5	12.0
8	11.5	9.5	10.5	14.0	12.0	13.0	18.5	15.5	17.0	12.5	11.0	11.5
9	11.0	9.0	9.5	14.0	12.0	13.0	18.5	16.0	17.5	11.0	9.5	10.0
10	9.0	7.5	8.5	14.5	12.0	13.5	18.5	16.5	17.0	10.0	9.0	9.5
11	8.5	7.0	8.0	15.0	11.5	13.5	17.5	16.0	16.5	11.5	9.0	10.0
12	9.0	7.5	8.0	16.5	13.0	14.5	16.0	13.5	15.0	13.0	10.0	11.5
13	10.5	8.0	9.0	17.0	14.0	15.5	16.5	14.0	15.5	13.5	11.0	12.5
14	10.0	8.5	9.0	17.0	14.5	16.0	16.0	13.5	15.0	13.0	11.5	12.5
15	9.5	7.5	8.5	17.0	14.5	16.0	15.5	13.5	14.5	13.0	11.0	12.5
16	10.5	8.0	9.0	16.5	13.5	15.0	15.0	13.0	14.5	13.5	11.5	12.5
17	11.0	9.0	10.0	17.0	14.0	15.5	15.5	12.5	14.5	14.0	12.0	13.0
18	11.0	9.0	10.0	17.0	14.0	15.5	15.5	13.0	14.5	13.5	12.0	13.0
19	10.5	8.5	9.5	17.5	14.5	16.0	15.0	13.0	14.0	12.0	10.5	11.0
20	11.5	8.5	10.0	18.0	15.0	16.5	14.0	11.5	13.0	11.0	8.0	8.5
21	11.5	9.5	11.0	18.0	15.5	16.5	14.0	11.5	13.0	8.0	5.5	7.0
22	12.5	10.0	11.0	18.0	16.0	17.0	14.5	12.0	13.5	6.0	4.5	5.5
23	12.0	10.0	11.5	18.0	16.0	17.0	15.0	12.5	14.0	6.5	4.0	5.5
24	12.0	9.5	10.0	17.0	14.5	15.5	15.0	13.0	13.5	7.5	5.0	6.5
25	12.5	8.0	10.0	17.5	14.0	16.0	15.0	11.5	13.5	8.0	6.0	7.0
26	13.5	10.0	12.0	17.5	15.0	16.5	14.5	13.0	14.0	8.5	6.5	8.0
27	14.0	10.5	12.5	17.5	15.5	16.5	14.5	12.5	13.0	9.0	7.0	8.0
28	14.5	11.5	13.0	18.0	15.5	17.0	13.0	10.5	12.0	9.0	7.0	8.0
29	15.0	11.5	13.0	18.5	15.5	17.0	13.5	11.0	12.5	9.0	7.5	8.5
30	15.5	12.0	14.0	18.5	16.0	17.5	13.5	12.0	12.5	9.5	8.5	9.0
31	---	---	---	18.5	16.5	17.5	13.5	10.5	12.0	---	---	---
MONTH	15.5	5.0	10.0	18.5	9.5	15.0	19.0	10.5	15.0	14.0	4.0	10.0

PEND OREILLE RIVER BASIN

12358500 MIDDLE FORK FLATHEAD RIVER NEAR WEST GLACIER, MT

LOCATION.--Lat 48°29'43", long 114°00'33", in S1/2SW$^1/_4$NE$^1/_4$ sec.34, T.32 N., R.19 W., Flathead County, Hydrologic Unit 17010207, on left bank 0.8 mi downstream from McDonald Creek, 1.3 mi west of West Glacier, and at river mile 3.8.
DRAINAGE AREA.--1,128 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1947, published as "near Belton."
REVISED RECORDS.--WSP 1216: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 3,128.72 ft above sea level. Prior to Nov. 22, 1950, nonrecording gage at present site and datum.
REMARKS.--Water-discharge records good. Bureau of Reclamation satellite at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	626	1790	1590	853	538	632	1060	6480	6960	5030	1600	685
2	614	1710	1550	847	783	632	1140	8910	6260	4760	1560	791
3	603	1630	1510	805	750	637	1190	9780	6210	4500	1520	856
4	587	1770	1420	801	684	675	1280	10600	6840	4140	1450	814
5	575	1830	1310	800	680	721	1680	9860	7720	3750	1400	763
6	571	1790	1250	774	682	748	1950	8730	8700	3520	1340	746
7	567	1940	1290	757	669	739	1890	7580	9650	3490	1300	789
8	646	2010	1230	762	672	722	1810	6850	9700	3370	1270	759
9	1750	1980	1170	774	697	708	1850	6610	11000	3270	1240	757
10	1810	1910	1150	748	696	696	2170	6720	9550	3140	1210	804
11	1520	1850	1140	720	635	695	2620	6290	8160	3030	1220	971
12	1680	1810	1140	730	614	692	3140	5650	7080	2960	1190	930
13	2010	3740	1200	727	645	682	4330	5160	8400	2940	1120	1000
14	2210	6960	1150	738	629	694	4400	4970	8480	2970	1060	998
15	2080	5800	1140	728	653	694	3880	4960	11400	2890	1020	940
16	1860	4810	1170	726	643	675	3510	5510	11700	2720	974	911
17	1690	4150	1170	732	619	670	3510	7010	10500	2530	938	885
18	1580	3720	1180	695	604	666	3950	8750	9640	2390	908	868
19	1470	3310	1140	654	610	665	5100	10100	9160	2310	875	862
20	1390	3020	1070	599	577	653	6660	9920	8730	2270	852	845
21	1320	2770	1060	665	592	635	8010	10500	7930	2220	825	832
22	1250	2540	1040	699	606	626	9220	13200	8090	2160	798	785
23	1190	2330	1010	665	606	682	9060	14700	7920	2100	778	740
24	1140	2180	972	640	623	748	7850	13300	7060	2050	759	706
25	1090	2140	908	620	618	749	6630	11900	6500	1960	758	683
26	1150	2080	861	636	606	761	5650	11200	5950	1880	750	666
27	1280	1940	812	620	605	810	5180	10100	5560	1810	741	651
28	1460	1800	792	610	626	909	5790	10700	5300	1730	722	640
29	1840	1690	784	601	632	1020	6780	9840	5190	1690	702	626
30	1840	1600	788	586	---	1030	6490	8600	5180	1670	694	683
31	1790	---	832	503	---	1040	---	7750	---	1640	692	---
TOTAL	41189	78600	34829	21815	18594	22706	127780	272230	240520	86890	32266	23986
MEAN	1329	2620	1124	704	641	732	4259	8782	8017	2803	1041	800
MAX	2210	6960	1590	853	783	1040	9220	14700	11700	5030	1600	1000
MIN	567	1600	784	503	538	626	1060	4960	5180	1640	692	626
MED	1390	2000	1140	726	629	694	3920	8750	8010	2720	974	790
AC-FT	81700	155900	69080	43270	36880	45040	253500	540000	477100	172300	64000	47580
CFSM	1.18	2.32	1.00	.62	.57	.65	3.78	7.79	7.11	2.48	.92	.71
IN.	1.36	2.59	1.15	.72	.61	.75	4.21	8.98	7.93	2.87	1.06	.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2000, BY WATER YEAR (WY)

MEAN	1067	1192	930	709	716	862	3212	9646	10080	3978	1372	957
MAX	3004	5598	3750	2420	2686	2779	7093	14670	19870	8162	2364	2510
(WY)	1960	1990	1996	1974	1971	1986	1943	1957	1964	1954	1976	1968
MIN	367	279	262	316	300	307	664	5259	3576	1249	576	420
(WY)	1940	1953	1953	1988	1944	1944	1975	1941	1941	1944	1941	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1940 - 2000	
ANNUAL TOTAL	1121307		1001405			
ANNUAL MEAN	3072		2736		2899	
HIGHEST ANNUAL MEAN					4071	1974
LOWEST ANNUAL MEAN					1437	1941
HIGHEST DAILY MEAN	19300	May 26	14700	May 23	92700	Jun 9 1964
LOWEST DAILY MEAN	445	Feb 22	503	Jan 31	189	Nov 27 1952
ANNUAL SEVEN-DAY MINIMUM	456	Feb 17	585	Jan 26	205	Nov 26 1952
INSTANTANEOUS PEAK FLOW			15300	May 23	a140000	Jun 9 1964
INSTANTANEOUS PEAK STAGE			7.14	May 23	36.46	Jun 9 1964
INSTANTANEOUS LOW FLOW			480	Jan 31	b173	Nov 27 1952
INSTANTANEOUS LOW STAGE			1.53	Jan 31	b0.72	Nov 27 1952
ANNUAL RUNOFF (AC-FT)	2224000		1986000		2100000	
ANNUAL RUNOFF (CFSM)	2.72		2.43		2.57	
ANNUAL RUNOFF (INCHES)	36.98		33.03		34.92	
10 PERCENT EXCEEDS	8580		7950		8530	
50 PERCENT EXCEEDS	1520		1240		1110	
90 PERCENT EXCEEDS	560		636		442	

a--About 140,000 ft^3/s, from rating curve extended above 31,000 ft^3/s, on the basis of a contracted-opening measurement at gage height, 19.42 ft, and flood volume-hydrographic comparison.
b--Stage below intakes.

12358500 MIDDLE FORK FLATHEAD RIVER NEAR WEST GLACIER, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--1949-50, 1970, 1998 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
22...	1445	1250	8.2	157	14.5	13.5	<.001
APR 2000							
12...	0930	3050	8.0	160	7.0	5.5	<.001
MAY							
09...	1015	6610	8.1	143	9.0	6.0	<.001
JUL							
13...	0945	2960	7.8	135	19.5	11.0	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
22...	.101	<.10	<.001	<.008	1	3.4	74
APR 2000							
12...	.161	.14	<.001	.017	27	222	90
MAY							
09...	.214	E.10	<.001	E.006	19	339	74
JUL							
13...	.104	E.10	.002	<.008	3	24	86

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT 1999										
22...	1445	80	22	6.1	.3	0.0	.8	79	E.2	<.1
MAY 2000										
09...	1015	75	21	5.5	E.2	0.0	.7	74	<.3	<.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT 1999									
22...	3.9	4.6	<3	<.1	<1	<1	<1	<2	<31
MAY 2000									
09...	4.1	3.2	<3	<.1	<1	2	<1	<1	2

E--Estimated.

PEND OREILLE RIVER BASIN

12359800 SOUTH FORK FLATHEAD RIVER ABOVE TWIN CREEK, NEAR HUNGRY HORSE, MT

LOCATION.--Lat 47°58'45", long 113°33'36", in NE$^1/_4$NW$^1/_4$NE$^1/_4$ sec.36, T.26 N., R.16 W., Flathead County, Hydrologic Unit 17010209, Flathead National Forest, on left bank 0.1 mi downstream from Tin Creek, 0.4 mi upstream from Twin Creek, 36.3 mi southeast of Hungry Horse, and at river mile 42.2.

DRAINAGE AREA.--1,160 mi^2.

PERIOD OF RECORD.--October 1964 to September 1982, October 1984 to current year (no winter records).

GAGE.--Water-stage recorder. Elevation of gage is 3,575 ft, from river-profile map.

REMARKS.--Seasonal records good except those for estimated daily discharges, which are poor. No known regulation or diversions upstream of 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 June 8, 1964, reached a stage of 20.87 ft, from high-water profile; discharge, 50,900 ft^3/s, by slope-area measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				804	6000	6360	3890	807	379	721	375	
2				867	8140	5650	3670	779	390	765	372	
3				882	8360	5820	3440	757	397	665	360	
4				1020	8960	6770	3160	748	383	582	357	
5				1550	8100	7690	2850	722	376	545	367	
6				1680	7160	8700	2990	692	370	501	351	
7				1540	6350	9240	2920	668	368	469	313	
8				1440	5930	9740	2680	642	359	447	e305	
9				1560	5720	10300	2540	620	367	428	e315	
10				1960	5600	8500	2410	602	383	414	e280	
11				2160	5160	7210	2260	604	413	399	e235	
12				2760	4630	6040	2130	584	390	392	e250	
13				3860	4200	6340	2030	563	369	412	e290	
14				4330	4060	6570	1990	543	354	458	e265	
15				3860	4140	10400	1910	524	345	471	e240	
16				3520	4930	10800	1790	508	336	460	e245	
17				3570	6290	9130	1650	493	330	442	e243	
18				4100	7490	8150	1530	479	323	438	e237	
19				5090	8510	7600	1430	468	333	439	e235	
20				6220	8550	7680	1360	456	336	426	e240	
21				6910	9120	7020	1310	445	348	434	e217	
22				7970	10300	6870	1250	436	343	450	e210	
23				7860	11900	6710	1180	426	336	441	e205	
24				6810	11200	5860	1120	417	330	428	e207	
25				5700	10300	5420	1070	415	322	419	e220	
26				4870	9790	5030	1020	404	318	412	e217	
27				4450	8860	4630	978	395	313	405	e215	
28				5330	9550	4350	941	391	307	398	e210	
29				6190	8890	4170	905	383	307	392	e190	
30				5720	7940	4070	866	380	331	391	e185	
31				---	7260	---	834	380	---	381	---	
TOTAL				114583	233390	212820	60104	16731	10556	14425	7951	
MEAN				3819	7529	7094	1939	540	352	465	265	
MAX				7970	11900	10800	3890	807	413	765	375	
MIN				804	4060	4070	834	380	307	381	185	
AC-FT				227300	462900	422100	119200	33190	20940	28610	15770	
CFSM				3.29	6.49	6.12	1.67	.47	.30	.40	.23	
IN.				3.67	7.48	6.82	1.93	.54	.34	.46	.25	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1982, AND SEASONS 1985 - 2000*

MEAN	479	520	588	2460	7810	8507	2789	801	590	583	722	514
MAX	1197	2285	1342	4490	12580	15910	5904	1331	1853	1878	3098	1323
(WY)	1974	1971	1972	1990	1997	1974	1975	1972	1985	1986	1990	1976
MIN	207	201	252	464	4738	2522	844	339	245	225	204	249
(WY)	1980	1980	1980	1975	1977	1987	1977	1988	1988	1988	1988	1972

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1985 - 2000		WATER YEARS 1965 - 1982*	
ANNUAL MEAN					2310	
HIGHEST ANNUAL MEAN					2988	1971
LOWEST ANNUAL MEAN					1175	1977
HIGHEST DAILY MEAN	11900	May 23	28500	May 17 1997	29500	Jun 16 1974
LOWEST DAILY MEAN	185	Nov 30	176	Nov 30 1987	135	Jan 29 1980
ANNUAL SEVEN-DAY MINIMUM					155	Jan 26 1980
INSTANTANEOUS PEAK FLOW	12200	Jun 15	29100	May 17 1997	30200	Jun 16 1974
INSTANTANEOUS PEAK STAGE	11.14	Jun 15	15.01	May 17 1997	15.20	Jun 16 1974
INSTANTANEOUS LOW FLOW					a127	Nov 30 1979
ANNUAL RUNOFF (AC-FT)					1673000	
ANNUAL RUNOFF (CFSM)					1.99	
ANNUAL RUNOFF (INCHES)					27.06	
10 PERCENT EXCEEDS					7410	
50 PERCENT EXCEEDS					645	
90 PERCENT EXCEEDS					290	

*--Seasonal records only October 1984 to current year.
a--Gage height, 4.13 ft.
e--Estimated.

12362000 HUNGRY HORSE RESERVOIR NEAR HUNGRY HORSE, MT

LOCATION.--Lat 48°20'28", long 114°00'48", in $NE^1/_4NE^1/_4NW^1/_4$ sec.27, T.30 N., R.19 W., Flathead County, Hydrologic Unit 17010209, in block 14 of Hungry Horse Dam on South Fork Flathead River, 3.8 mi southeast of Hungry Horse, and at river mile 5.3.

DRAINAGE AREA.--1,654 mi^2.

PERIOD OF RECORD.--September 1951 to current year.

GAGE.--Water-stage recorder equipped with remote indicator in power house. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). During construction and prior to May 1, 1953, various types of nonrecording gages were used.

REMARKS.--Reservoir and flow completely controlled by concrete arch-gravity dam; construction began in 1948; completed in 1952. Storage began Sept. 21, 1951. Usable capacity, 3,451,000 acre-ft, top of 1.0 ft flash- boards; 3,427,000 acre-ft between elevations 3,196 ft, lowest outlet, and 3,560 ft, controlled spillway elevation. Dead storage, 39,730 acre-ft below elevation 3,196 ft. Minimum operating level, 445,400 acre-ft, elevation, 3,336 ft for on-site power generation. Water is used for power production, flood control, irrigation and recreation. Controlled spillway is an adjustable ring gate with 1.0 ft flashboards. Figures given herein represent usable contents. Capacity table in use is dated August 1969.

COOPERATION.--Capacity table and daily elevations provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 3,461,000 acre-ft, July 3, 4, 1955, Aug. 6, 1956; maximum elevation observed, 3,561.40 ft, July 3, 4, 1955; minimum contents observed since normal low operating level reached in May 1952, 607,700 acre-ft, Jan. 13, 1953, elevation, 3,362.50 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,388,000 acre-ft, Julne 30, elevation, 3,558.35 ft; minimum, 2,223,000 acre-ft, Apr. 3, elevation, 3,502.12 ft.

Capacity table (elevation, in feet, and contents, in acre-ft)

Elevation	Contents
3,470	1,707,000
3,510	2,367,000
3,565	3,547,000

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 23:59 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3544.45	3542.47	3544.08	3536.69	3526.10	3512.90	3502.19	3507.88	3539.19	3558.32	3549.82	3539.65
2	3544.28	3542.40	3543.55	3536.54	3525.69	3512.58	3502.17	3508.47	3539.79	3558.25	3549.47	3539.48
3	3544.09	3542.38	3543.23	3536.20	3525.22	3512.01	3502.12	3509.57	3540.54	3558.16	3549.09	3539.32
4	3543.94	3542.42	3543.16	3535.81	3524.76	3511.45	3502.23	3510.81	3541.39	3558.04	3548.74	3539.15
5	3543.74	3542.40	3543.03	3535.48	3524.61	3510.88	3502.21	3511.97	3542.32	3557.92	3548.37	3539.03
6	3543.58	3542.50	3542.69	3535.06	3524.42	3510.49	3502.37	3513.07	3543.33	3557.71	3547.98	3538.93
7	3543.42	3542.59	3542.33	3534.66	3523.95	3510.11	3502.40	3514.06	3544.44	3557.52	3547.63	3538.82
8	3543.35	3542.61	3542.05	3534.51	3523.52	3509.71	3502.44	3514.83	3545.61	3557.29	3547.33	3538.65
9	3543.32	3542.65	3541.72	3534.40	3523.04	3509.35	3502.48	3515.55	3546.89	3557.04	3547.00	3538.60
10	3543.19	3542.70	3541.37	3533.99	3522.51	3508.96	3502.64	3516.30	3547.93	3556.81	3546.66	3538.56
11	3543.10	3542.72	3541.31	3533.59	3521.97	3508.59	3502.70	3516.98	3548.74	3556.61	3546.38	3538.44
12	3543.02	3542.84	3541.18	3533.15	3521.42	3508.19	3502.81	3517.53	3549.47	3556.37	3546.05	3538.32
13	3542.98	3543.10	3540.68	3532.69	3520.89	3507.81	3503.17	3518.15	3550.21	3556.09	3545.70	3538.24
14	3542.91	3543.35	3540.39	3532.32	3520.38	3507.55	3503.48	3518.74	3550.92	3555.84	3545.38	3538.14
15	3542.93	3543.45	3540.12	3532.16	3520.12	3507.22	3503.69	3519.22	3552.08	3555.58	3545.03	3538.04
16	3542.94	3543.56	3539.81	3532.09	3519.87	3506.97	3503.85	3519.81	3553.29	3555.29	3544.71	3537.93
17	3542.87	3543.72	3539.55	3531.65	3519.58	3506.59	3503.97	3520.60	3554.17	3555.00	3544.35	3537.81
18	3542.75	3543.86	3539.42	3531.11	3519.06	3506.25	3504.18	3521.59	3555.02	3554.69	3544.02	3537.68
19	3542.73	3543.95	3539.27	3530.68	3518.51	3505.84	3504.62	3522.74	3555.55	3554.37	3543.67	3537.59
20	3542.72	3544.01	3538.93	3530.22	3517.94	3505.43	3505.16	3524.05	3556.07	3554.05	3543.32	3537.45
21	3542.69	3544.13	3538.57	3529.86	3517.39	3505.04	3505.70	3525.52	3556.49	3553.72	3542.94	3537.32
22	3542.67	3544.16	3538.35	3529.72	3516.84	3504.62	3506.35	3527.09	3556.89	3553.28	3542.55	3537.18
23	3542.63	3544.17	3538.11	3529.52	3516.27	3504.29	3506.92	3528.82	3557.27	3553.00	3542.15	3537.03
24	3542.55	3544.17	3537.94	3529.06	3515.78	3503.89	3507.18	3530.34	3557.55	3552.69	3541.72	3536.89
25	3542.42	3544.33	3537.82	3528.60	3515.20	3503.50	3507.31	3531.69	3557.78	3552.32	3541.34	3536.74
26	3542.38	3544.47	3537.66	3528.13	3514.64	3503.11	3507.28	3532.99	3557.93	3551.97	3540.97	3536.58
27	3542.29	3544.56	e3537.44	3527.67	3514.10	3502.72	3507.19	3534.34	3558.08	3551.64	3540.61	3536.43
28	3542.38	3544.66	e3537.28	3527.21	3513.53	3502.48	3507.29	3535.62	3558.24	3551.31	3540.38	3536.24
29	3542.45	3544.56	3537.09	3527.00	3513.24	3502.44	3507.53	3536.80	3558.33	3550.96	3540.12	3536.15
30	3542.48	3544.41	3536.90	3526.79	---	3502.37	3507.66	3537.71	3558.35	3550.61	3539.97	3535.97
31	3542.47	---	3536.77	3526.28	---	3502.28	---	3538.51	---	3550.26	3539.78	---
MAX	3544.45	3544.66	3544.08	3536.69	3526.10	3512.90	3507.66	3538.51	3558.35	3558.32	3549.82	3539.65
MIN	3542.29	3542.38	3536.77	3526.79	3513.24	3502.28	3502.12	3507.88	3539.19	3550.26	3539.78	3535.97

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT END OF MONTH

3027	3069	2903	2685	2428	2226	2323	2940	3388	3201	2968	2886

CHANGE IN CONTENTS, IN ACRE-FEET

-51,000	+42,000	-166,000	-218,000	-257,000	-202,000	+97,000	+617,000	+448,000	-187,000	-233,000	-82,000

CAL YR 1999 . . . . . +299,000
WTR YR 2000 . . . . . -192,000

e--Estimated by USBR.

PEND OREILLE RIVER BASIN

12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT

LOCATION.--Lat 48°21'24", long 114°02'12", in $SW^1/_4SE^1/_4SW^1/_4$ sec.16, T.30 N., R.19 W., Flathead County, Hydrologic Unit 17010209, on right bank 1.7 mi downstream from Hungry Horse Dam, 6.8 mi east of Columbia Falls, and at river mile 3.5.
DRAINAGE AREA.--1,663 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1910 to January 1911 (discharge measurements only), February 1911 to September 1913 (no winter records), October 1913 to August 1916 (scattered daily discharge only), water years 1917-22 (annual maximum), April 1923 to November 1924 (no winter records), July to October 1925, May to November 1927, May 1928 to current year. Monthly discharge only for some periods, published in WSP 1316.
REVISED RECORDS.--WSP 1216: Drainage area. WSP 1316: 1923-24(M), 1926-27(M), 1932(M), 1935-36(M). WSP 1636: 1958 (adjusted runoff).
GAGE.--Water-stage recorder. Elevation of gage is 3,040 ft above sea level (levels by the U.S. Bureau of Reclamation). September 1910 to September 1916, nonrecording gage, Apr. 23, 1923, to Sept. 30, 1928, water-stage recorder at site 3 mi downstream at different datum. Oct. 1, 1928, to Sept. 30, 1952, water-stage recorder at site 1.5 mi downstream at different datum. U.S. Bureau of Reclamation satellite telemeter at station.
REMARKS.--Water-discharge records excellent . Flow regulated by Hungry Horse Reservoir since Sept. 21, 1951 (see preceding page).
AVERAGE DISCHARGE.--72 years (water years, 1929-2000), 3,534 ft^3/s, 28.86 in/yr, 2,560,000 acre-ft/yr, adjusted for change in contents in Hungry Horse Reservoir since Oct. 1, 1951.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 46,200 ft^3/s, June 19, 1916, gage height, 16.6 ft, site and datum then in use, from rating curve extended above 20,000 ft^3/s; minimum observed, 7.3 ft^3/s, Sept. 24, 1951, gage height, 0.52 ft, dam closure, site and datum then in use; minimum daily, 7.3 ft^3/s, Sept. 24, 1951.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,590 ft^3/s, Apr. 24, gage height, 9.63 ft; minimum daily, 411 ft^3/s, Nov 18, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4670	1840	5430	2350	3300	4100	2310	8050	1610	5490	6010	2500
2	2590	1890	7270	2500	5640	3690	2340	8030	1340	5470	5300	2510
3	2350	1230	4900	4980	5660	6490	2450	4000	580	5490	5290	2350
4	2340	1050	2130	5110	5610	6450	2460	3370	548	5500	5300	2340
5	2350	1590	2130	4880	2600	6450	2480	2430	1130	5630	5300	2020
6	2340	474	4910	5110	2580	5180	2520	565	1140	6030	5270	1720
7	2340	468	5000	5590	5620	4730	2660	588	1030	6110	4880	1720
8	2360	837	4640	2430	5630	4770	2430	1650	1480	6100	4450	1820
9	2350	1060	4950	2340	5660	4830	2470	2700	602	6080	4440	1850
10	2350	1310	5030	5030	6310	4790	2450	1780	594	5800	4440	1850
11	2340	533	2420	5630	6250	4790	4060	1660	603	5520	4460	1820
12	2350	444	2730	5590	6340	4780	4760	1670	1140	5660	4460	1730
13	2320	446	6510	5620	6350	4660	4740	611	944	5650	4470	1690
14	1170	447	5060	5610	6300	3950	4720	583	2550	5660	4460	1600
15	1160	1340	5040	2440	3780	4250	4670	2110	1940	5660	4440	1660
16	1160	945	4250	2530	3240	3510	4660	2170	2000	5660	4460	1680
17	1630	470	5000	5030	3770	4620	5090	2470	2420	5680	4450	1730
18	2210	411	2470	5620	5480	4580	5430	2770	2630	5730	4470	1780
19	1070	733	2340	5620	6380	4590	5440	2770	3930	5710	4460	1810
20	1060	968	4990	5580	6390	4580	6220	582	4510	5720	4460	1800
21	1070	513	5110	4620	6380	4560	7610	552	4580	5710	4850	1820
22	1070	1480	3450	2410	6370	4640	8050	1570	4670	5700	5070	1830
23	1070	1310	3380	2760	6370	4740	8060	1640	4720	5690	5060	1980
24	1650	1800	2460	5570	6390	4880	8310	1640	4710	5710	5050	2000
25	1900	411	2360	5630	6420	4820	8100	1640	4730	5720	5040	2050
26	1900	421	2340	5620	6430	4820	8060	1660	4690	5300	4540	2100
27	1970	434	2980	5660	6420	4720	8050	567	4510	5280	4080	2110
28	1400	422	2480	5620	6440	3990	8050	572	3720	5280	3500	2160
29	1150	2470	2700	2810	3870	2450	8040	605	4540	5280	2980	2180
30	1150	2950	2750	2590	---	2450	8050	1850	5110	5300	2600	2190
31	1140	---	2350	5630	---	2460	---	1640	---	5270	2200	---
TOTAL	57980	30697	119560	138510	157980	140320	154740	64495	78701	174590	140240	58400
MEAN	1870	1023	3857	4468	5448	4526	5158	2080	2623	5632	4524	1947
MAX	4670	2950	7270	5660	6440	6490	8310	8050	5110	6110	6010	2510
MIN	1060	411	2130	2340	2580	2450	2310	552	548	5270	2200	1600
MED	1900	891	3450	5110	6250	4660	4750	1660	2210	5660	4460	1840
AC-FT	115000	60890	237100	274700	313400	278300	306900	127900	156100	346300	278200	115800
CFSM	1.12	.62	2.32	2.69	3.28	2.72	3.10	1.25	1.58	3.39	2.72	1.17
IN.	1.30	.69	2.67	3.10	3.53	3.14	3.46	1.44	1.76	3.91	3.14	1.31
MEAN †	1041	1729	1156	922	981	1241	6788	12110	10150	2591	735	568
CFSM †	0.63	1.04	0.70	0.55	0.59	0.75	4.08	7.28	6.10	1.56	0.44	0.34
IN †	0.72	1.16	0.80	0.64	0.64	0.86	4.55	8.40	6.81	1.80	0.51	0.38
AC-FT†	64000	102900	71100	56700	56400	76300	403900	744900	604100	159300	45200	33800

OBSERVED

CAL YR 1999	TOTAL	1157197	MEAN	3170	MAX	8250	MIN	180	AC-FT	2295000
WTR YR 2000	TOTAL	1316213	MEAN	3596	MAX	8310	MIN	411	AC-FT	2611000

ADJUSTED

CAL YR 1999	TOTAL	1307926	MEAN	3583	CFSM	2.15	IN	29.25	AC-FT	2594000
WTR YR 2000	TOTAL	1219355	MEAN	3332	CFSM	2.00	IN	27.27	AC-FT	2419000

†--Adjusted for change in contents in Hungry Horse Reservoir.

12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-50, 1965-68, 1979 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1964 to September 1968, March 1979 to current year.

INSTRUMENTATION.--Temperature recorder since Mar. 30, 1979.

REMARKS.-Prior to March 1979, thermograph records furnished by Montana Department of Fish, Wildlife, and Parks. Unpublished records of instantaneous water temperature and specific conductance are available in files of District office

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 19.0°C Aug. 9-11, 1966, Aug. 2-6, 1968; minimum (water years 1965-68, 1979-81, 1983-88), 2.0°C on many days during winter most years.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 18.5°C, on Aug. 4; minimum, 3.0°C, Jan. 19.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.0	9.5	11.0	8.5	8.0	8.0	5.0	5.0	5.0	4.5	4.0	4.0
2	12.0	10.5	11.5	8.0	8.0	8.0	5.0	4.5	5.0	4.0	4.0	4.0
3	11.5	11.5	11.5	8.0	8.0	8.0	4.5	4.5	4.5	4.0	4.0	4.0
4	11.5	11.0	11.5	8.0	5.0	6.5	4.5	4.5	4.5	4.0	4.0	4.0
5	11.5	11.0	11.0	5.0	4.5	5.0	4.5	4.5	4.5	4.0	4.0	4.0
6	11.0	11.0	11.0	5.0	4.5	4.5	5.0	4.5	5.0	4.0	4.0	4.0
7	11.0	10.5	11.0	5.0	4.5	5.0	5.0	4.5	5.0	4.0	4.0	4.0
8	11.0	10.5	11.0	5.0	4.5	4.5	5.0	4.5	4.5	4.0	4.0	4.0
9	11.0	10.5	11.0	4.5	4.5	4.5	4.5	4.5	4.5	4.0	3.5	4.0
10	11.0	10.5	11.0	5.0	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0
11	10.5	10.5	10.5	5.0	4.5	4.5	5.0	4.5	4.5	4.0	4.0	4.0
12	10.5	10.0	10.0	5.0	4.5	5.0	5.0	4.5	4.5	4.0	4.0	4.0
13	10.5	10.0	10.5	5.0	5.0	5.0	5.0	4.5	4.5	4.0	3.5	3.5
14	10.5	9.5	10.0	5.0	4.5	4.5	4.5	4.5	4.5	3.5	3.5	3.5
15	10.0	9.0	10.0	5.0	4.5	4.5	5.0	4.5	4.5	4.0	3.5	3.5
16	10.0	9.5	9.5	5.0	4.5	5.0	4.5	4.5	4.5	3.5	3.5	3.5
17	10.0	9.5	9.5	5.0	4.5	5.0	4.5	4.5	4.5	3.5	3.5	3.5
18	9.5	9.5	9.5	5.0	4.5	4.5	4.5	4.5	4.5	3.5	3.5	3.5
19	9.5	9.5	9.5	5.0	4.5	4.5	4.5	4.5	4.5	3.5	3.0	3.5
20	9.5	9.5	9.5	5.0	4.5	4.5	4.5	4.5	4.5	3.5	3.5	3.5
21	9.5	9.0	9.5	5.0	4.5	5.0	4.5	4.5	4.5	3.5	3.5	3.5
22	9.5	9.0	9.5	4.5	4.5	4.5	4.5	4.5	4.5	3.5	3.5	3.5
23	9.5	9.0	9.0	5.0	4.5	5.0	4.5	4.5	4.5	3.5	3.5	3.5
24	9.0	9.0	9.0	5.5	5.0	5.0	4.5	4.5	4.5	3.5	3.5	3.5
25	9.0	9.0	9.0	5.5	5.0	5.5	4.5	4.5	4.5	3.5	3.5	3.5
26	9.0	9.0	9.0	5.0	4.5	5.0	4.5	4.5	4.5	3.5	3.5	3.5
27	9.0	9.0	9.0	5.0	4.5	4.5	4.5	4.5	4.5	3.5	3.5	3.5
28	9.0	8.5	9.0	4.5	4.5	4.5	4.5	4.5	4.5	3.5	3.5	3.5
29	9.0	8.5	8.5	5.0	4.5	4.5	4.5	4.5	4.5	3.5	3.5	3.5
30	8.5	8.5	8.5	5.0	5.0	5.0	4.5	4.0	4.5	3.5	3.5	3.5
31	8.5	8.5	8.5	---	---	---	4.5	4.0	4.5	3.5	3.5	3.5
MONTH	12.0	8.5	10.0	8.5	4.5	5.0	5.0	4.0	4.5	4.5	3.0	3.5

12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0
2	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0
3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.0	4.0
4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.0	4.0
5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.0	4.0
6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.5	4.0	4.5
7	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	4.5	4.5
8	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.0	4.5
9	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.0	4.5
10	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.0	4.5
11	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0
12	3.5	3.5	3.5	3.5	3.5	3.5	4.5	3.5	3.5	4.0	3.5	4.0
13	3.5	3.5	3.5	3.5	3.5	3.5	4.0	3.5	4.0	4.5	3.5	4.0
14	3.5	3.5	3.5	3.5	3.5	3.5	4.0	3.5	3.5	4.0	3.5	4.0
15	3.5	3.5	3.5	3.5	3.5	3.5	4.0	3.5	3.5	4.0	3.5	3.5
16	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	3.5	4.0
17	3.5	3.5	3.5	4.0	3.5	4.0	3.5	3.5	3.5	4.0	3.5	3.5
18	3.5	3.5	3.5	4.0	3.5	4.0	4.5	3.5	4.0	4.0	3.5	4.0
19	3.5	3.5	3.5	4.0	3.5	3.5	4.0	4.0	4.0	4.0	3.5	3.5
20	3.5	3.5	3.5	4.0	3.5	3.5	4.5	3.5	4.0	4.5	3.5	4.0
21	3.5	3.5	3.5	4.0	3.5	3.5	4.5	3.5	4.0	4.5	4.0	4.0
22	3.5	3.5	3.5	4.0	3.5	3.5	4.5	3.5	4.0	4.0	3.5	4.0
23	3.5	3.5	3.5	3.5	3.5	3.5	4.5	3.5	4.0	4.0	3.5	4.0
24	3.5	3.5	3.5	3.5	3.5	3.5	4.5	3.5	4.0	4.0	3.5	4.0
25	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	3.5	4.0
26	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	3.5	4.0
27	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.5	4.0	4.0
28	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.5	4.0	4.0
29	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.5	4.0	4.0
30	---	---	---	3.5	3.5	3.5	4.0	4.0	4.0	4.0	3.5	4.0
31	---	---	---	3.5	3.5	3.5	---	---	---	4.0	4.0	4.0
MONTH	3.5	3.5	3.5	4.0	3.5	3.5	4.5	3.5	3.5	5.5	3.5	4.0

		JUNE			JULY			AUGUST			SEPTEMBER	
1	4.5	3.5	4.0	14.0	12.5	13.0	15.5	14.0	15.0	14.5	13.0	14.0
2	4.5	3.5	4.0	14.0	13.0	13.5	17.0	13.5	15.0	14.5	12.5	13.5
3	5.0	3.5	4.0	14.0	11.5	12.5	16.5	14.5	15.5	14.5	13.5	14.0
4	5.0	4.0	4.0	13.0	10.5	12.0	18.5	16.0	17.0	14.5	13.0	14.0
5	4.5	3.5	4.0	13.0	11.5	12.5	18.0	15.5	16.5	14.0	13.0	13.5
6	4.5	4.0	4.0	14.0	13.0	13.5	17.0	15.5	16.5	14.5	14.0	14.5
7	5.0	3.5	4.0	13.5	12.5	13.0	17.0	13.5	15.0	14.5	14.0	14.5
8	5.0	3.5	4.0	13.5	12.5	12.5	17.5	15.0	16.5	14.5	14.0	14.5
9	4.5	4.0	4.0	13.5	12.0	12.5	18.0	16.0	17.0	14.5	13.5	14.0
10	4.5	4.0	4.0	12.0	11.5	12.0	18.0	14.5	16.0	14.0	13.0	13.5
11	5.0	4.0	4.0	12.5	12.0	12.5	18.0	14.0	16.0	14.0	13.0	13.5
12	4.5	4.0	4.5	13.0	12.0	12.5	16.5	14.5	15.5	14.0	13.5	13.5
13	4.5	4.0	4.5	13.5	12.5	13.0	15.0	13.0	14.0	14.0	13.5	14.0
14	4.5	4.0	4.0	13.5	12.0	13.0	15.5	13.0	14.5	14.0	13.5	14.0
15	4.5	4.0	4.0	12.5	11.5	12.0	15.5	14.0	14.5	14.0	13.5	14.0
16	4.5	4.0	4.0	12.5	11.5	12.0	15.5	12.5	14.0	14.0	13.5	14.0
17	4.5	4.0	4.0	15.0	11.5	13.0	15.5	14.0	14.5	14.5	14.0	14.5
18	4.5	4.0	4.0	16.0	13.5	14.5	15.0	14.0	14.5	14.5	13.5	14.0
19	4.0	3.5	4.0	16.5	14.5	15.0	15.0	13.0	14.0	14.0	13.5	14.0
20	4.0	3.5	4.0	16.5	14.5	15.0	15.0	12.5	13.5	14.0	14.0	14.0
21	12.0	4.0	7.5	16.5	14.5	15.5	15.0	13.0	14.0	14.0	13.0	13.5
22	11.0	10.0	10.5	17.0	15.0	16.0	15.5	13.0	14.5	13.5	13.0	13.0
23	12.0	10.0	11.5	16.0	14.5	15.5	15.5	14.0	14.5	13.0	13.0	13.0
24	12.5	10.5	12.0	15.5	14.0	14.5	15.5	13.5	14.5	13.0	12.5	12.5
25	11.5	10.0	11.0	16.0	14.0	15.0	15.0	13.5	14.0	12.5	12.5	12.5
26	13.5	10.5	12.0	16.0	14.5	15.5	15.5	13.5	14.5	12.5	12.5	12.5
27	14.0	13.0	13.5	15.5	14.0	14.5	15.5	13.0	14.5	12.5	12.5	12.5
28	14.0	11.5	13.0	15.5	14.0	14.5	15.5	13.5	14.5	12.5	12.0	12.5
29	13.5	12.0	13.0	15.5	14.5	15.0	15.5	14.0	14.5	12.5	12.5	12.5
30	14.0	13.0	13.5	16.0	14.5	15.5	15.0	10.5	13.0	13.0	12.5	12.5
31	---	---	---	16.0	14.5	15.0	14.5	11.5	13.5	---	---	---
MONTH	14.0	3.5	6.5	17.0	10.5	13.5	18.5	10.5	15.0	14.5	12.0	13.5

PEND OREILLE RIVER BASIN

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT

LOCATION.--Lat 48°21'43", long 114°11'02", in $NW^1/_4NW^1/_4SE^1/_4$ sec.17, T.30 N., R.20 W., Flathead County, Hydrologic Unit 17010208, on right bank 200 ft downstream from county road bridge at Columbia Falls, 5.7 mi downstream from South Fork, and at river mile 143.0.
DRAINAGE AREA.--4,464 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1922 to September 1923 (fragmentary), June 1928 to current year. Monthly discharge only for some periods, published in WSP 1316.
REVISED RECORDS.--WSP 1092: 1923. WSP 1216: Drainage area. WSP 1636: 1958 (adjusted runoff).
GAGE.--Water-stage recorder. Datum of gage is 2,977.67 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Nov. 12, 1928, nonrecording gage on bridge 200 ft upstream at datum 0.19 ft higher.
REMARKS.--Water-discharge records excellent. South Fork Flathead River, which contributes about one-third of flow, is completely regulated by Hungry Horse Reservoir 10.9 mi upstream since Sept. 21, 1951 (see station number 12362000). Bureau of Reclamation satellite telemeter at station.
AVERAGE DISCHARGE.--72 years, 9,685 ft^3/s, 29.46 in/yr, 7,017,000 acre-ft/yr, adjusted for change in contents in Hungry Horse Reservoir since Oct. 1, 1951.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 176,000 ft^3/s, June 9, 1964, gage height, 25.58 ft, from floodmarks, from rating curve extended above 95,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 798 ft^3/s, Dec. 8, 1929, gage height, -0.08 ft.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a stage of 22.7 ft, from floodmarks, discharge, 142,000 ft^3/s, from rating curve extended above 95,000 ft^3/s on basis of slope-area measurement of peak flow in 1964.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34,000 ft^3/s, May 23, gage height, 11.40 ft; minimum daily, 3,580 ft^3/s, Oct. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6140	5200	8540	4380	4690	5300	5060	21300	16100	15400	9300	4010
2	4400	5490	10600	4510	7080	5080	5220	24500	14500	15000	8660	4530
3	3860	4510	8600	6360	7270	7620	5520	23600	13500	14600	8490	4400
4	3820	4420	5570	6830	7040	7800	5690	24400	14000	14100	8410	4400
5	3790	5050	5140	6640	4470	7920	6710	22900	16000	13500	8330	4050
6	3780	3980	7310	6850	3970	6980	7240	18700	17700	13300	8200	3600
7	3780	3930	7850	7250	6840	6400	7160	16400	20000	13500	7820	3610
8	3850	4380	7360	4650	7050	6370	6720	15700	20700	13200	7300	3670
9	4920	4450	7600	4200	7090	6400	6910	15900	22100	12900	7190	3740
10	5910	4780	7610	6280	7750	6350	7580	15800	20600	12500	7140	3830
11	5530	4130	5470	7160	7540	6330	9680	14800	18000	11900	7170	4100
12	5590	3920	5210	7150	7540	6310	11500	13700	16300	11800	7160	3960
13	5960	7750	8950	7210	7680	6200	13400	11900	16800	11600	7060	3870
14	5330	20000	7700	7240	7590	5750	13700	11100	18800	11600	6920	3800
15	5450	17700	7610	4600	5520	5610	12800	12300	21700	11500	6790	3770
16	5110	13800	6930	4240	4550	5170	12200	13400	23700	11300	6720	3740
17	5130	10900	7560	6250	5350	6020	12600	16000	22200	11000	6650	3740
18	5480	9430	5550	7110	6360	6080	13700	19500	20600	10700	6590	3740
19	4340	8560	4960	7000	7610	6090	15200	22700	20900	10500	6530	3760
20	3980	7920	6880	6790	7540	6050	18100	21400	21000	10400	6450	3730
21	3840	6910	7340	6160	7590	5990	22100	21800	19700	10300	6680	3740
22	3700	7180	5930	4290	7640	6060	24900	27400	19700	10100	6900	3700
23	3580	6570	5670	4230	7630	6240	25700	32900	19700	10000	6850	3750
24	3960	6850	4830	6750	7690	6600	24400	30800	18500	9940	6790	3720
25	4240	5230	4520	6890	7700	6580	22000	27200	17600	9850	6790	3730
26	4280	5050	4380	7000	7670	6580	20000	25300	16500	9320	6360	3730
27	4600	4790	4790	7100	7660	6610	19000	22100	15500	9120	5870	3720
28	4280	4430	4200	6990	7720	6430	19600	21400	14300	8960	5280	3740
29	4590	5930	4370	4680	5690	4980	21400	20600	14800	8850	4720	3700
30	4610	6350	4460	3870	---	5010	21300	19400	15300	8790	4330	3790
31	4480	---	4250	6510	---	5040	---	17800	---	8710	3930	---
TOTAL	142310	209590	197740	187170	197520	191950	417090	622700	546800	354240	213380	115370
MEAN	4591	6986	6379	6038	6811	6192	13900	20090	18230	11430	6883	3846
MAX	6140	20000	10600	7250	7750	7920	25700	32900	23700	15400	9300	4530
MIN	3580	3920	4200	3870	3970	4980	5060	11100	13500	8710	3930	3600
AC-FT	282300	415700	392200	371300	391800	380700	827300	1235000	1085000	702600	423200	228800
CFSM	1.03	1.57	1.43	1.35	1.53	1.39	3.11	4.50	4.08	2.56	1.54	.86
IN.	1.19	1.75	1.65	1.56	1.65	1.60	3.48	5.19	4.56	2.95	1.78	.96
MEAN †	3762	7692	3679	2493	2343	2906	15530	30120	25760	8385	3093	2467
CFSM †	0.84	1.72	0.82	0.56	0.52	0.65	3.48	6.75	5.77	1.88	0.69	0.55
IN †	0.97	1.92	0.95	0.64	0.57	0.75	3.88	7.78	6.44	2.17	0.80	0.62
AC-FT†	231300	457700	226200	153300	134800	178700	924300	1852000	1533000	515600	190200	146800

OBSERVED

CAL YR 1999	TOTAL	3557550	MEAN	9747	MAX	40900	MIN	3490	AC-FT	7056000
WTR YR 2000	TOTAL	3395860	MEAN	9278	MAX	32900	MIN	3580	AC-FT	6736000

ADJUSTED

CAL YR 1999	TOTAL	3707890	MEAN	10160	CFSM	2.28	IN	30.89	AC-FT	7355000
WTR YR 2000	TOTAL	3299168	MEAN	9014	CFSM	2.02	IN	27.49	AC-FT	6544000

†--Adjusted for change in contents in Hungry Horse Reservoir.

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-50, 1963-67, 1970, 1979 to September 1994. Water years 1968-69 published as Flathead River near Kalispell (station 12363500) 15 mi downstream. No appreciable inflow or outflow occurs between the two points.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1964 to September 1967, March 1979 to September 1981.
WATER TEMPERATURE: January 1949 to September 1950, August 1963 to September 1969, March 1979 to current year.
SUSPENDED-SEDIMENT DISCHARGE: July 1965 to September 1969.

INSTRUMENTATION.--Temperature recorder since Mar. 27, 1979.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1965-67, 1979-81): Maximum daily, 290 microsiemens per centimeter (µS/cm) at 25.0°C, April 6, 1980; minimum daily, 121 microsiemens per centimeter (µS/cm) at 25.0°C, May 28, 1979.
WATER TEMPERATURE: Maximum, 21.0°C, Aug. 23, 1963, Aug. 8, 1968; minimum, 0.0°C on several days during winter periods most years.
SEDIMENT CONCENTRATION (water years 1965-69): Maximum daily, 980 mg/L, May 21, 1967; Minimum daily, 1 mg/L on several days most years.
SEDIMENT LOAD (water years 1965-69): Maximum daily, 140,000 tons, May 23, 1967; minimum daily, 4 tons, Mar. 4-6, 1967.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 19.5°C, Aug. 4; minimum, 1.0°C, Apr. 14.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.0	8.0	9.5	6.5	5.0	6.0	4.5	3.5	4.0	3.0	2.5	2.5
2	10.5	8.0	9.0	6.0	4.5	5.5	4.0	4.0	4.0	3.0	2.5	2.5
3	11.0	8.0	9.5	5.5	4.0	4.5	4.0	3.5	4.0	3.5	2.0	2.5
4	11.0	8.0	9.5	5.5	4.5	5.0	3.5	2.5	3.0	3.5	2.5	3.0
5	10.5	8.0	9.0	4.5	3.5	3.5	3.0	2.5	2.5	3.5	2.5	3.0
6	11.0	8.5	9.5	4.5	3.5	4.0	4.0	2.5	3.5	3.5	2.5	3.0
7	9.5	9.0	9.5	5.0	4.5	5.0	4.0	3.0	3.5	3.5	3.0	3.5
8	10.0	9.0	9.5	5.0	4.5	5.0	3.5	3.0	3.5	3.5	3.0	3.0
9	9.5	8.5	9.0	5.5	4.5	5.0	3.5	2.5	3.0	3.0	2.0	2.5
10	9.0	7.5	8.5	5.5	5.0	5.5	3.5	2.5	3.5	3.0	1.5	2.5
11	8.5	8.0	8.5	6.0	5.0	5.5	3.5	3.0	3.0	3.5	2.5	3.0
12	9.0	8.0	8.5	7.0	6.0	6.5	4.0	3.0	3.5	3.5	2.5	3.0
13	9.0	8.5	8.5	8.0	7.0	7.5	4.0	3.5	4.0	3.0	2.5	3.0
14	8.5	7.5	8.0	7.0	6.0	6.5	3.5	3.0	3.5	3.0	2.0	2.5
15	7.5	6.5	7.0	6.5	5.0	5.5	3.5	2.5	3.0	3.0	2.0	2.5
16	7.0	5.0	6.0	5.5	5.0	5.0	4.0	3.0	3.5	2.5	1.5	2.0
17	7.0	6.0	6.5	5.5	5.0	5.5	4.0	3.0	3.5	3.5	2.0	2.5
18	8.0	6.0	7.0	5.5	5.0	5.5	4.0	3.0	3.5	3.0	2.0	2.5
19	8.0	6.0	7.0	5.0	4.5	5.0	3.0	2.5	2.5	3.0	2.0	2.5
20	7.0	6.0	6.5	5.0	4.5	4.5	3.5	2.5	3.0	3.0	2.0	2.5
21	7.5	5.5	6.5	5.0	4.0	4.5	3.5	2.5	3.5	3.0	2.0	2.5
22	8.0	6.0	7.0	4.0	3.5	4.0	3.5	3.0	3.0	3.0	2.0	2.5
23	8.0	6.0	7.0	4.0	3.5	3.5	3.5	3.0	3.5	3.0	2.0	2.5
24	8.0	6.5	7.0	4.0	3.5	3.5	3.5	3.0	3.0	3.5	2.0	2.5
25	7.5	6.5	7.0	3.5	3.0	3.5	3.0	3.0	3.0	3.0	2.5	3.0
26	8.0	7.0	7.5	4.0	3.5	3.5	3.0	2.5	3.0	3.0	2.5	3.0
27	8.5	7.0	7.5	3.5	3.0	3.5	3.0	2.5	3.0	3.5	2.5	3.0
28	8.0	7.0	7.0	4.0	3.0	3.5	3.0	2.5	3.0	3.5	3.0	3.0
29	7.0	6.5	6.5	4.0	3.0	3.5	3.0	2.5	3.0	3.0	2.5	3.0
30	7.0	6.0	6.5	4.0	3.5	4.0	3.0	2.5	3.0	3.0	2.0	2.5
31	7.5	6.0	6.5	---	---	---	3.0	2.5	2.5	3.0	2.0	2.5
MONTH	11.0	5.0	8.0	8.0	3.0	5.0	4.5	2.5	3.5	3.5	1.5	2.5

PEND OREILLE RIVER BASIN

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3.0	2.5	3.0	4.5	3.5	4.0	6.5	4.5	5.5	7.0	5.5	6.5
2	3.5	3.0	3.0	5.0	3.5	4.0	7.0	4.5	5.5	7.0	5.5	6.0
3	3.5	2.5	3.0	5.0	4.0	4.0	6.5	4.0	5.0	6.0	5.5	5.5
4	3.0	2.0	2.5	4.0	4.0	4.0	6.0	4.5	5.0	6.0	5.5	5.5
5	3.5	2.5	3.0	5.0	3.5	4.0	5.5	4.0	4.5	6.0	5.0	5.5
6	3.0	2.5	2.5	4.5	3.5	4.0	4.5	3.5	4.0	6.5	5.5	6.0
7	3.5	2.5	3.0	4.5	3.5	4.0	6.0	3.5	4.5	6.5	5.0	6.0
8	3.5	3.0	3.5	4.5	3.0	3.5	6.5	4.5	5.5	7.0	5.5	6.0
9	4.0	3.0	3.5	4.5	3.5	3.5	7.0	5.0	6.0	7.0	6.0	6.5
10	4.0	2.5	3.5	5.0	3.5	4.0	6.5	5.5	6.0	7.0	6.0	6.5
11	3.0	2.0	2.5	4.0	3.5	3.5	6.0	5.0	5.5	6.5	5.5	6.0
12	3.5	2.5	3.0	4.5	3.5	4.0	6.0	5.5	5.5	6.5	5.5	6.0
13	3.5	2.5	3.0	4.5	3.5	4.0	5.5	2.0	4.5	8.0	5.5	6.5
14	3.0	2.5	2.5	4.0	3.5	3.5	2.0	1.0	1.5	8.0	7.5	8.0
15	3.5	2.0	2.5	4.0	3.0	3.5	3.5	1.5	2.5	8.5	7.0	7.5
16	4.0	2.0	2.5	4.0	3.0	3.5	5.0	3.5	4.5	9.0	7.5	8.0
17	3.5	2.0	2.5	3.5	3.0	3.5	6.0	4.5	5.5	8.5	8.0	8.0
18	4.0	2.0	3.0	4.0	3.0	3.5	6.5	4.5	5.5	8.5	8.0	8.5
19	4.0	3.0	3.0	4.5	3.5	3.5	6.5	5.5	6.0	8.0	6.5	7.0
20	4.0	2.5	3.0	5.5	3.0	4.0	6.5	5.5	6.0	8.0	6.5	7.0
21	3.5	3.0	3.0	5.5	3.5	4.0	6.0	5.5	6.0	8.0	7.0	7.5
22	4.5	3.0	3.5	5.5	3.5	4.0	6.0	4.5	5.0	8.5	7.5	8.0
23	4.5	3.5	3.5	5.0	4.0	4.5	5.0	4.5	5.0	8.5	7.5	8.0
24	4.0	3.5	3.5	5.0	3.5	4.5	5.0	4.5	4.5	8.5	7.0	7.5
25	4.0	3.0	3.5	4.5	3.5	4.0	4.5	4.0	4.5	9.0	8.0	8.5
26	4.0	3.0	3.5	5.5	3.5	4.5	6.0	4.0	5.0	9.0	7.5	8.0
27	4.0	3.5	3.5	6.5	4.0	5.0	6.5	5.0	6.0	8.0	7.5	8.0
28	4.0	3.5	4.0	5.5	4.5	4.5	6.5	5.5	6.0	8.0	7.5	7.5
29	5.5	3.5	4.0	4.5	4.0	4.5	5.5	4.5	5.0	9.0	6.5	7.5
30	---	---	---	6.0	3.5	4.5	6.5	4.5	5.5	8.5	7.5	7.5
31	---	---	---	7.0	4.0	5.0	---	---	---	7.5	7.0	7.5
MONTH	5.5	2.0	3.0	7.0	3.0	4.0	7.0	1.0	5.0	9.0	5.0	7.0

		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.0	6.0	7.0	14.0	13.0	13.5	18.0	15.5	16.5	14.0	13.0	13.5
2	9.5	8.0	8.5	14.0	13.0	13.5	17.5	15.5	16.5	14.0	13.0	13.0
3	10.5	8.5	9.5	13.5	11.5	12.0	17.5	16.0	16.5	15.0	12.5	13.5
4	10.5	9.0	10.0	11.5	10.5	11.0	19.5	16.5	17.5	15.0	12.0	13.5
5	10.5	9.5	10.0	12.5	11.0	11.5	18.0	17.0	17.5	13.5	12.5	12.5
6	10.5	9.0	10.0	13.0	12.0	12.5	18.5	16.5	17.0	13.0	12.0	12.5
7	10.5	9.0	10.0	14.0	12.0	13.0	18.0	16.0	17.0	15.0	12.5	13.5
8	11.0	10.0	10.5	13.5	12.5	13.0	18.5	16.0	17.0	13.5	12.5	13.0
9	11.0	9.0	10.0	14.0	12.5	13.0	19.0	16.5	18.0	12.5	11.5	12.0
10	9.0	8.0	8.5	14.0	12.5	13.0	18.0	16.5	17.5	12.0	11.0	11.5
11	9.0	7.5	8.0	14.5	12.5	13.5	18.5	15.5	17.0	13.0	11.0	11.5
12	8.5	7.5	8.0	15.0	13.0	14.0	17.5	14.5	16.0	14.5	11.0	12.5
13	9.5	8.5	9.0	16.0	14.0	15.0	16.5	15.0	15.5	15.5	12.5	14.0
14	9.5	8.0	8.5	16.5	14.5	15.5	16.0	14.5	15.5	15.5	12.5	14.0
15	9.0	8.0	8.5	15.5	14.0	14.5	16.5	14.5	15.5	15.5	13.0	14.0
16	9.5	8.0	8.5	15.5	13.5	14.5	16.0	14.0	15.0	16.0	13.0	14.5
17	10.5	8.5	9.5	16.0	14.0	15.0	16.5	14.0	15.0	16.5	13.5	15.0
18	10.0	9.0	9.5	16.0	14.5	15.5	16.5	14.5	15.5	15.0	13.5	14.5
19	9.5	8.5	9.0	17.0	15.0	16.0	15.5	14.0	15.0	14.0	12.5	13.0
20	9.5	8.0	9.0	17.0	15.5	16.0	15.0	13.0	14.0	12.5	11.5	12.0
21	11.0	9.0	10.0	17.0	15.5	16.0	15.5	13.0	14.0	11.5	9.5	10.5
22	12.0	10.5	11.5	17.0	15.5	16.5	15.5	13.5	14.5	11.0	8.0	9.5
23	12.0	11.0	11.5	17.5	15.5	16.5	16.0	14.0	15.0	11.5	8.5	9.5
24	11.5	10.0	10.5	16.5	14.5	15.5	15.0	14.0	14.5	11.5	8.5	10.0
25	11.5	9.0	10.5	17.0	15.0	16.0	15.5	13.5	14.5	12.0	9.0	10.5
26	13.0	11.0	12.0	17.5	15.5	16.5	16.5	14.5	15.0	12.5	9.5	11.0
27	13.5	11.5	12.5	17.5	15.5	16.5	14.5	13.5	14.0	12.5	10.0	11.0
28	14.0	12.5	13.0	17.0	15.0	16.0	15.5	13.5	14.5	12.5	10.0	11.0
29	13.5	12.5	13.0	18.0	15.5	16.5	15.5	13.5	14.5	11.0	10.0	11.0
30	14.0	12.5	13.5	18.0	16.0	17.0	15.5	12.5	14.5	11.5	11.0	11.0
31	---	---	---	17.5	16.5	16.5	15.0	11.0	13.0	---	---	---
MONTH	14.0	6.0	10.0	18.0	10.5	14.5	19.5	11.0	15.5	16.5	8.0	12.0

12365000 STILLWATER RIVER NEAR WHITEFISH, MT

LOCATION.--Lat 48°19'08", long 114°23'11", in NE$^1/_4$SW$^1/_4$ sec.34, T.30 N., R.22 W., Flathead County, Hydrologic Unit 17010210, on right bank 600 ft downstream from road bridge, 6.2 mi southwest of Whitefish, 14.8 mi upstream from Whitefish River, and at river mile 16.2.

DRAINAGE AREA.--524 mi^2.

PERIOD OF RECORD.--October and November 1930 (monthly discharge only, published in WSP 1316), December 1930 to September 1950, October 1972 to September 1985, April 1986 to September 1999 (seasonal records only), October 1999 to September 2000.

REVISED RECORDS.--WSP 1736: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,953.26 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter at station. Diversions for irrigation of about 200 acres upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR, OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	119	141	e96	108	147	245	1120	719	346	139	71
2	96	121	138	e95	e115	143	264	1120	689	325	134	79
3	96	118	136	94	e120	140	299	1130	656	310	125	92
4	97	118	133	e95	e129	141	330	1180	620	304	118	103
5	97	124	123	e95	136	e135	388	1230	589	296	120	94
6	96	127	117	e95	e132	e130	489	1250	569	294	118	93
7	96	125	120	e95	e130	e125	562	1230	555	318	114	94
8	94	122	123	e95	e129	119	586	1180	551	332	115	92
9	97	119	115	e95	e125	117	580	1100	550	322	114	91
10	104	116	114	e95	e122	118	583	1040	553	313	112	92
11	110	114	116	95	e120	119	619	999	563	308	113	93
12	111	113	116	e96	119	120	679	955	569	291	115	94
13	114	115	118	e99	e120	120	756	909	566	275	111	96
14	117	132	120	e102	e122	121	867	862	561	252	105	96
15	116	151	120	e104	124	123	957	818	550	237	103	95
16	113	163	125	e105	e125	122	984	784	555	225	103	94
17	109	189	134	e110	e129	122	986	761	563	213	99	94
18	106	207	132	e112	e130	122	985	759	561	205	97	92
19	105	213	133	e114	e130	119	1000	778	554	198	93	89
20	102	208	126	118	e131	124	1050	806	547	192	90	84
21	101	199	e122	e120	133	119	1130	839	522	187	83	83
22	99	189	e120	e120	148	118	1220	861	495	181	82	84
23	98	178	e119	e122	145	121	1320	877	476	176	83	86
24	97	168	e117	e123	150	131	1420	900	459	171	80	85
25	95	164	e118	123	152	138	1470	920	445	164	78	84
26	94	169	e116	e123	148	144	1460	922	428	157	81	84
27	96	173	e110	e119	147	157	1390	894	413	151	79	84
28	101	163	e108	e117	147	177	1270	855	395	145	73	84
29	112	154	100	e115	149	197	1180	815	376	142	70	84
30	120	142	e98	e112	---	219	1140	774	360	141	67	83
31	119	---	e97	e110	---	231	---	743	---	139	69	---
TOTAL	3205	4513	3725	3309	3815	4279	26209	29411	16009	7310	3083	2669
MEAN	103	150	120	107	132	138	874	949	534	236	99.5	89.0
MAX	120	213	141	123	152	231	1470	1250	719	346	139	103
MIN	94	113	97	94	108	117	245	743	360	139	67	71
AC-FT	6360	8950	7390	6560	7570	8490	51990	58340	31750	14500	6120	5290
CFSM	.20	.29	.23	.20	.25	.26	1.67	1.81	1.02	.45	.19	.17
IN.	.23	.32	.26	.23	.27	.30	1.86	2.09	1.14	.52	.22	.19
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2000, BY WATER YEAR (WY)*												
MEAN	115	130	123	116	117	165	675	1206	877	384	180	127
MAX	271	300	582	495	588	548	1857	3125	1916	952	505	315
(WY)	1948	1990	1996	1934	1996	1996	1996	1997	1974	1993	1993	1993
MIN	52.9	53.9	50.7	59.2	60.1	76.7	138	265	235	94.5	55.5	54.8
(WY)	1945	1945	1945	1940	1993	1977	1945	1944	1977	1977	1941	1944

12365000 STILLWATER RIVER NEAR WHITEFISH, MT--Continued

SUMMARY STATISTICS	FOR 2000 WATER YEAR		WATER YEARS 1931 - 2000*	
ANNUAL TOTAL	107537			
ANNUAL MEAN	294		347	
HIGHEST ANNUAL MEAN			747	1996
LOWEST ANNUAL MEAN			124	1944
HIGHEST DAILY MEAN	1470	Apr 25	4560	May 18 1997
LOWEST DAILY MEAN	67	Aug 30	17	Aug 17 1992
ANNUAL SEVEN-DAY MINIMUM	73	Aug 27	37	Sep 6 1988
INSTANTANEOUS PEAK FLOW	1480	Apr 25	4570	May 18 1997
INSTANTANEOUS PEAK STAGE	10.94	Apr 25	a20.90	May 26 1948
INSTANTANEOUS LOW FLOW	66	Aug 30	b2.9	Aug 18 1992
INSTANTANEOUS LOW STAGE	1.52	Aug 30	b.10	Aug 18 1992
ANNUAL RUNOFF (AC-FT)	213300		251500	
ANNUAL RUNOFF (CFSM)	.56		.66	
ANNUAL RUNOFF (INCHES)	7.63		9.00	
10 PERCENT EXCEEDS	861		1000	
50 PERCENT EXCEEDS	125		150	
90 PERCENT EXCEEDS	94		73	

*--During periods of operation; October and November 1930 (monthly discharge only, published in WSP 1316), December 1930 to September 1950, October 1972 to September 1985, April 1986 to September 1999 (seasonal record only), October 1999 to September 2000.
a--From floodmark.
b--Result of upstream mudslide.
e--Estimated.

PEND OREILLE RIVER BASIN

12366000 WHITEFISH RIVER NEAR KALISPELL, MT

LOCATION.--Lat 48°19'13", long 114°16'39", in $SW^1/_4SE^1/_4NW^1/_4$ sec.34, T.30 N., R.21 W., Flathead County, Hydrologic Unit 17010210, on right bank 160 ft upstream from road bridge, 8.0 mi north of Kalispell, and at river mile 12.8.

DRAINAGE AREA.--170 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to November 1928, April 1929 to September 1950, annual maximum 1964, October 1972 to September 1985, April 1986 to September 1995, October 1995 to September 1999 (seasonal record only), October 1999 to current year. Prior to 1964, published as Whitefish Creek near Kalispell.

GAGE.--Water-stage recorder. Datum of gage is 2,969.83 ft above sea level. Prior to Oct. 16, 1930, nonrecording gage at site 200 ft downstream at datum 10.00 ft lower. Oct. 16, 1930, to Sept. 30, 1950, water-stage recorder on left bank at same datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Some regulation by Whitefish Lake. Diversion for irrigation of about 650 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	67	99	88	e80	77	130	430	624	341	113	58
2	67	67	100	88	88	78	131	442	609	325	110	66
3	67	67	99	86	e80	80	131	456	593	314	107	73
4	65	67	99	86	e80	83	135	468	577	302	104	74
5	63	67	96	86	e85	86	147	478	567	288	102	69
6	63	69	96	86	83	95	160	487	560	279	99	68
7	61	70	99	83	e80	96	164	486	565	289	95	66
8	63	69	96	83	82	95	163	477	572	279	90	66
9	67	69	96	83	78	94	167	475	572	269	88	66
10	67	68	96	83	77	91	184	481	576	263	87	66
11	65	67	97	81	e80	95	220	479	574	252	90	70
12	67	67	96	81	e85	95	235	468	558	242	88	69
13	67	67	99	81	73	94	257	456	561	231	94	68
14	67	71	96	83	e70	96	267	447	552	219	87	68
15	65	73	101	83	e75	96	274	438	554	208	85	67
16	65	75	105	86	e85	96	277	432	554	199	83	67
17	65	80	105	86	e90	96	292	433	543	191	81	65
18	63	86	107	e82	e75	94	308	447	532	181	80	66
19	63	90	105	e80	e75	94	326	465	530	173	80	69
20	63	90	105	e75	e77	94	346	487	521	166	79	69
21	61	90	101	e110	e80	94	367	503	502	161	74	68
22	61	92	101	e95	72	94	396	532	492	157	71	66
23	63	92	99	e85	69	104	413	565	475	152	70	65
24	63	92	96	e90	69	118	413	601	460	144	70	64
25	61	96	96	e70	69	111	406	624	449	139	67	62
26	62	103	94	e80	69	104	401	639	430	135	62	61
27	63	103	92	e85	69	103	397	647	412	130	62	61
28	67	101	90	e80	71	109	407	652	392	125	61	60
29	69	101	90	e80	76	124	431	652	374	121	59	60
30	67	99	88	e75	---	138	429	642	357	118	59	61
31	69	---	88	e70	---	134	---	631	---	115	57	---
TOTAL	2008	2415	3027	2590	2242	3058	8374	15920	15637	6508	2554	1978
MEAN	64.8	80.5	97.6	83.5	77.3	98.6	279	514	521	210	82.4	65.9
MAX	69	103	107	110	90	138	431	652	624	341	113	74
MIN	61	67	88	70	69	77	130	430	357	115	57	58
AC-FT	3980	4790	6000	5140	4450	6070	16610	31580	31020	12910	5070	3920
CFSM	.38	.47	.57	.49	.45	.58	1.64	3.02	3.07	1.23	.48	.39
IN.	.44	.53	.66	.57	.49	.67	1.83	3.48	3.42	1.42	.56	.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2000, BY WATER YEAR (WY)*

MEAN	69.7	72.7	72.9	68.5	66.5	97.3	230	544	614	278	112	82.2
MAX	150	177	231	209	157	212	549	895	1194	695	238	149
(WY)	1948	1934	1934	1934	1934	1936	1934	1997	1974	1974	1993	1947
MIN	9.98	20.1	23.0	13.9	15.5	48.9	85.4	214	211	88.5	29.5	23.9
(WY)	1931	1937	1936	1938	1938	1944	1975	1944	1977	1941	1931	1931

12366000 WHITEFISH RIVER NEAR KALISPELL, MT--Continued

SUMMARY STATISTICS	FOR 2000 WATER YEAR		WATER YEARS 1930 - 2000*	
ANNUAL TOTAL	66311			
ANNUAL MEAN	181		190	
HIGHEST ANNUAL MEAN			320	1974
LOWEST ANNUAL MEAN			102	1944
HIGHEST DAILY MEAN	652	May 28,29	1580	Jun 23 1974
LOWEST DAILY MEAN	57	Aug 31	5.0	Oct 17 1934
ANNUAL SEVEN-DAY MINIMUM	60	Aug 26	5.3	Oct 15 1934
INSTANTANEOUS PEAK FLOW	652	May 28	1580	Jun 24 1974
INSTANTANEOUS PEAK STAGE	3.17	May 28	4.91	Jun 24 1974
INSTANTANEOUS LOW FLOW	56	Aug 31	4.5	Oct 18 1934
ANNUAL RUNOFF (AC-FT)	131500		137400	
ANNUAL RUNOFF (CFSM)	1.07		1.12	
ANNUAL RUNOFF (INCHES)	14.51		15.16	
10 PERCENT EXCEEDS	482		536	
50 PERCENT EXCEEDS	94		98	
90 PERCENT EXCEEDS	66		45	

*--During periods of operation, includes seasonal record,(July to November 1928, April 1929 to September 1950, annual maximum 1964, October 1972 to September 1985, April 1986 to September 1995, October 1995 to September 1999 (seasonal record only), October 1999 to current year).
e--Estimated.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1999 to current year.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
21...	1215	61	8.5	191	12.0	8.0	.007
APR 2000							
10...	0815	181	8.2	201	9.0	8.0	.004
MAY							
10...	1245	483	8.2	171	10.0	8.0	<.001
JUL							
12...	1145	242	7.9	168	21.0	19.5	.001

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
21...	.110	.15	<.001	E.006	2	.33	93
APR 2000							
10...	.072	.24	.002	.020	7	3.4	94
MAY							
10...	.009	.16	.001	.014	17	22	83
JUL							
12...	.014	.13	.003	E.007	3	2.0	91

E--Estimated.

12366000 WHITEFISH RIVER NEAR KALISPELL, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	TIME	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ALKALINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT 1999											
21...	1215	94	26	6.9	.6	.1	2.9	98	2.1	<.1	4.3
MAY 2000											
10...	1245	87	25	6.2	.3	.1	1.4	90	.4	<.1	7.0

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
OCT 1999											
21...	3.0	105	.14	17	<3	<.1	<1	E1	<1	<2	<31
MAY 2000											
10...	1.5	96	.13	125	<3	<.1	<1	1	<1	<1	2

E--Estimated.

PEND OREILLE RIVER BASIN

12370000 SWAN RIVER NEAR BIGFORK, MT

LOCATION.--Lat 48°01'28", long 113°58'44", near center of $S^1/_2SW^1/_4$ sec.11, T.26 N., R.19 W., Lake County, Hydrologic Unit 17010211, on left bank 0.2 mi downstream from Johnson Creek, 0.4 mi downstream from Swan Lake, 5.1 mi southeast of Bigfork, and at river mile 14.0.
DRAINAGE AREA.--671 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to May 1911 (gage heights only), April 1922 to current year. Monthly discharge only for some periods, published in WSP 1316.
REVISED RECORDS.--WSP 1216: Drainage area. WSP 1246: 1923-24(M), 1930. WSP 1316: 1923.
GAGE.--Water-stage recorder. Datum of gage is 3,062.6 ft above sea level (from river-profile survey). Oct. 10, 1910, to May 22, 1911, nonrecording gage at site 10 mi upstream at different datum. Apr. 28, 1922, to Oct. 14, 1930, nonrecording gage at site 800 ft upstream at datum 1.9 ft higher.
REMARKS.-Water-discharge records good. Diversions for irrigation of about 360 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	405	589	683	429	380	506	1150	2100	2890	1880	713	411
2	412	581	667	442	411	519	1140	2110	2710	1820	694	435
3	411	573	649	454	447	524	1150	2280	2480	1760	682	441
4	403	572	638	461	461	539	1150	2460	2360	1720	670	439
5	400	570	605	449	463	563	1190	2640	2340	1660	646	435
6	394	565	578	447	470	600	1270	2680	2430	1610	640	448
7	396	561	562	444	469	638	1330	2570	2600	1620	618	450
8	410	559	556	447	465	676	1330	2400	2790	1610	615	445
9	461	554	548	451	470	692	1280	2270	3000	1550	603	442
10	503	551	539	453	471	700	1260	2180	3210	1500	589	457
11	512	544	542	446	465	712	1270	2100	3210	1440	570	472
12	523	535	548	448	450	725	1330	1990	3040	1390	568	480
13	532	555	530	453	455	721	1480	1870	2840	1330	554	471
14	526	577	532	444	461	722	1890	1760	2820	1270	542	463
15	526	574	544	452	470	713	2270	1650	2910	1230	527	453
16	531	567	551	452	468	710	2400	1590	3190	1190	512	442
17	522	560	563	451	456	701	2410	1600	3520	1150	512	442
18	510	571	565	447	442	689	2360	1720	3420	1110	493	434
19	506	571	564	426	440	678	2370	1930	3220	1060	482	430
20	501	557	562	422	423	670	2470	2220	3080	1020	475	432
21	492	549	555	417	422	663	2630	2450	2950	987	472	436
22	485	547	546	420	426	658	2800	2650	2790	964	464	418
23	480	546	541	422	430	671	2950	2920	2690	909	460	401
24	471	535	538	418	446	716	3000	3260	2600	886	450	396
25	464	558	513	413	464	754	2870	3420	2500	867	449	394
26	465	616	501	414	473	776	2630	3410	2380	837	442	394
27	489	711	479	418	474	806	2410	3400	2250	806	430	395
28	528	765	459	417	482	876	2210	3320	2140	799	429	391
29	558	734	433	413	497	1010	2130	3300	2040	770	427	391
30	585	707	416	407	---	1110	2130	3230	1960	745	415	406
31	591	---	417	397	---	1140	---	3030	---	719	425	---
TOTAL	14992	17554	16924	13474	13151	22178	58260	76510	82360	38209	16568	12944
MEAN	484	585	546	435	453	715	1942	2468	2745	1233	534	431
MAX	591	765	683	461	497	1140	3000	3420	3520	1880	713	480
MIN	394	535	416	397	380	506	1140	1590	1960	719	415	391
AC-FT	29740	34820	33570	26730	26090	43990	115600	151800	163400	75790	32860	25670
CFSM	.72	.87	.81	.65	.68	1.07	2.89	3.68	4.09	1.84	.80	.64
IN.	.83	.97	.94	.75	.73	1.23	3.23	4.24	4.57	2.12	.92	.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2000, BY WATER YEAR (WY)

MEAN	554	599	575	502	503	632	1529	2855	3312	1645	702	540
MAX	1682	1514	1796	1298	1627	1813	3228	5469	5803	3310	1225	1096
(WY)	1960	1928	1934	1934	1971	1986	1925	1928	1974	1950	1950	1965
MIN	308	290	307	271	236	244	675	1670	1433	609	322	285
(WY)	1938	1937	1937	1930	1930	1930	1937	1941	1941	1941	1941	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1922 - 2000	
ANNUAL TOTAL	379242		383124			
ANNUAL MEAN	1039		1047		1164	
HIGHEST ANNUAL MEAN					1860	1928
LOWEST ANNUAL MEAN					607	1941
HIGHEST DAILY MEAN	3760	May 29	3520	Jun 17	8800	Jun 21 1974
LOWEST DAILY MEAN	387	Sep 24	380	Feb 1	193	Jan 26 1930
ANNUAL SEVEN-DAY MINIMUM	397	Feb 13	395	Sep 23	195	Jan 26 1930
INSTANTANEOUS PEAK FLOW			3580	Jun 17	8890	Jun 20 1974
INSTANTANEOUS PEAK STAGE			4.82	Jun 17	7.34	Jun 20 1974
INSTANTANEOUS LOW FLOW			351	Feb 1	b193	Jan 26 1930
INSTANTANEOUS LOW STAGE			a2.19	Feb 1		
ANNUAL RUNOFF (AC-FT)	752200		759900		843000	
ANNUAL RUNOFF (CFSM)	1.55		1.56		1.73	
ANNUAL RUNOFF (INCHES)	21.03		21.24		23.56	
10 PERCENT EXCEEDS	2610		2610		2880	
50 PERCENT EXCEEDS	571		566		638	
90 PERCENT EXCEEDS	421		423		369	

a--Also Oct.5,1999
b--Jan. 26-29, 1930, site and datum then in use.
e--Estimated.

12370000 SWAN RIVER NEAR BIGFORK, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May to August 1999.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1999 to September 2000.
INSTRUMENTATION.--Temperature recorder since Aug. 20, 1999.
REMARKS--Unpublished records of instantaneous specific conductance and temperature data are available in files of the District office.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 22.5°C, Aug. 1, 7-9, 2000; minimum, 0.0°C, Jan. 18, 19, 21, 31, 2000.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 22.5°C, Aug. 1, 7-9; minimum, 0.0°C, Jan. 18, 19, 21, 31.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1999							
21...	0930	484	8.2	164	5.0	8.0	.002
APR 2000							
10...	1045	1270	8.3	185	9.0	5.0	<.001
MAY							
10...	1000	2190	8.3	182	5.5	9.0	<.001
JUL							
12...	0930	1410	7.9	146	17.5	15.5	.002

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999							
21...	<.005	E.10	<.001	.010	1	1.3	71
APR 2000							
10...	.027	E.10	<.001	<.008	3	10	76
MAY							
10...	.049	E.10	<.001	<.008	7	41	96
JUL							
12...	.015	E.10	.002	<.008	1	3.8	87

DATE	TIME	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT 1999										
21...	0930	81	23	5.7	.4	.0	1	88	E.2	<.1
MAY 2000										
10...	1000	--	--	--	--	--	--	91	E.2	<.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT 1999									
21...	5.5	1.2	<3	<.1	<1	E.8	<1	<2	<31
MAY 2000									
10...	--	1.4	<3	<.1	<1	<1	<1	<1	2

E--Estimated.

PEND OREILLE RIVER BASIN

12370000 SWAN RIVER NEAR BIGFORK, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	13.0	10.5	11.5	9.0	7.0	8.0	5.5	5.0	5.5	2.0	1.5	1.5
2	12.0	9.5	10.5	8.5	7.0	7.5	5.5	5.0	5.0	1.5	1.0	1.5
3	12.5	9.5	10.5	8.5	6.5	7.5	5.0	4.5	5.0	1.5	1.0	1.5
4	13.0	9.5	11.0	8.5	7.0	8.0	4.5	3.5	4.0	1.5	1.0	1.5
5	12.5	10.0	11.0	7.0	6.0	6.5	4.0	3.5	3.5	2.5	1.0	1.5
6	12.5	10.5	11.0	8.0	6.5	7.5	4.5	4.0	4.5	2.0	1.5	1.5
7	12.0	10.5	11.0	8.0	7.5	7.5	4.5	4.0	4.0	2.0	1.5	1.5
8	11.0	10.5	11.0	8.0	7.0	7.5	4.5	3.5	4.0	2.0	1.5	1.5
9	11.5	10.0	10.5	10.0	7.5	7.5	3.5	3.0	3.0	1.5	.5	1.0
10	12.0	9.5	10.5	7.5	7.0	7.5	4.0	3.5	3.5	1.5	.5	1.0
11	11.0	10.5	10.5	8.5	7.0	7.5	3.5	3.0	3.5	1.5	.5	1.0
12	12.0	10.5	11.0	9.0	7.5	8.0	4.0	3.5	4.0	1.0	.5	1.0
13	11.0	10.5	10.5	9.0	8.0	8.5	4.0	3.0	3.5	1.0	.5	.5
14	11.5	10.0	10.5	9.0	7.5	8.0	3.0	2.5	3.0	1.0	.5	.5
15	11.5	9.0	10.0	8.0	6.5	7.5	3.5	3.0	3.0	1.5	.5	1.0
16	10.5	8.0	9.0	8.0	6.5	7.0	4.0	3.5	3.5	1.0	.5	.5
17	9.5	8.5	9.0	7.5	6.5	7.0	4.0	3.0	3.5	1.5	.5	1.0
18	11.0	8.5	9.5	7.0	6.5	7.0	3.5	3.0	3.5	1.0	.0	.5
19	10.5	8.5	9.0	6.5	5.5	6.0	3.5	2.5	3.0	1.5	.0	.5
20	9.5	8.0	8.5	7.0	6.0	6.5	3.5	3.0	3.0	1.0	.5	.5
21	10.5	8.0	9.0	6.5	6.0	6.0	3.5	3.0	3.0	1.0	.0	.5
22	10.5	8.0	9.0	6.0	5.5	6.0	3.0	3.0	3.0	1.5	1.0	1.0
23	11.0	8.0	9.0	5.5	5.0	5.0	3.5	3.0	3.0	1.5	.5	1.0
24	10.0	8.5	9.0	5.5	5.0	5.5	3.0	2.0	2.5	1.5	.5	1.0
25	9.5	8.0	8.5	5.5	5.5	5.5	2.5	2.0	2.0	1.0	.5	1.0
26	9.0	8.5	9.0	6.0	5.5	5.5	2.0	1.5	2.0	1.5	.5	1.0
27	9.5	8.5	8.5	6.0	5.5	5.5	2.0	1.0	1.5	1.0	.5	1.0
28	9.5	8.5	9.0	5.5	5.0	5.5	1.5	1.0	1.5	1.5	1.0	1.0
29	9.0	8.0	8.5	5.5	4.5	5.0	1.5	1.0	1.0	1.0	1.0	1.0
30	9.0	8.5	8.5	5.5	5.0	5.5	1.5	1.0	1.0	1.5	.5	1.0
31	9.0	8.0	8.5	---	---	---	1.5	1.0	1.5	.5	.0	.5
MONTH	13.0	8.0	10.0	10.0	4.5	7.0	5.5	1.0	3.0	2.5	0.0	1.0
		FEBRUARY			MARCH			APRIL			MAY	
1	1.5	.5	1.0	3.5	2.0	2.5	5.0	3.5	4.5	9.5	7.5	8.5
2	1.5	1.0	1.0	3.5	1.5	2.5	5.0	3.5	4.0	9.0	8.0	8.5
3	2.0	.5	1.0	4.5	2.0	3.0	5.5	3.0	4.5	9.0	8.0	8.5
4	1.5	.5	1.0	3.5	2.5	3.0	5.5	4.0	4.5	8.5	8.0	8.0
5	2.0	1.0	1.0	4.5	2.0	3.0	5.5	3.5	4.5	9.5	8.0	8.5
6	1.5	1.0	1.5	3.5	2.0	2.5	4.5	4.0	4.5	9.5	8.5	9.0
7	2.5	1.0	1.5	4.5	2.5	3.0	6.0	4.0	4.5	10.0	8.5	9.0
8	2.0	1.0	1.5	3.0	2.5	2.5	6.0	3.5	5.0	9.5	8.0	9.0
9	2.0	1.0	1.5	3.5	2.0	2.5	6.5	4.0	5.0	10.0	8.5	9.0
10	2.5	.5	1.0	4.5	2.5	3.0	6.5	4.5	5.5	10.0	8.5	9.0
11	1.0	.5	1.0	3.0	1.5	2.5	7.0	4.5	5.5	9.5	9.0	9.0
12	2.0	1.0	1.5	4.5	2.0	3.0	6.0	5.0	5.5	9.5	8.5	9.0
13	1.5	1.0	1.5	3.5	2.5	3.0	5.5	4.0	5.5	10.5	8.5	9.5
14	1.5	1.0	1.0	3.0	2.0	2.5	5.0	4.0	4.5	10.0	8.5	9.0
15	2.0	1.0	1.5	3.5	2.0	3.0	5.5	5.0	5.0	11.0	9.0	9.5
16	3.0	1.0	1.5	2.5	1.5	2.5	6.0	5.0	5.5	12.0	9.0	10.5
17	2.0	.5	1.0	3.0	2.0	2.5	6.5	5.0	5.5	12.0	10.0	11.0
18	2.5	1.0	1.5	3.5	2.5	3.0	7.0	5.0	6.0	12.0	10.0	10.5
19	2.5	.5	1.5	3.5	2.0	3.0	7.5	5.5	6.5	11.0	9.5	10.0
20	2.5	.5	1.5	5.0	2.5	3.5	8.0	6.0	7.0	12.0	10.5	11.0
21	2.0	1.5	1.5	4.5	2.0	3.0	8.5	6.5	7.5	12.0	11.0	11.0
22	3.5	1.5	2.0	5.5	2.5	3.5	7.5	7.0	7.5	12.5	11.0	12.0
23	2.5	1.5	2.0	4.5	3.0	4.0	8.0	7.0	7.5	11.5	9.5	11.0
24	2.0	1.5	1.5	5.5	3.0	4.0	8.0	7.0	7.0	12.5	9.5	11.5
25	2.5	1.0	2.0	3.5	2.5	3.0	7.5	6.5	7.0	13.5	11.5	12.5
26	2.0	1.0	1.5	5.0	2.5	4.0	8.0	7.0	7.5	13.0	12.0	12.5
27	2.5	1.5	2.0	6.0	3.0	4.0	8.5	7.0	7.5	12.5	12.0	12.5
28	3.0	1.5	2.0	4.5	3.0	4.0	8.0	7.5	7.5	12.0	11.5	12.0
29	4.0	1.5	2.5	4.0	3.0	3.5	9.5	7.0	8.0	12.5	10.5	11.5
30	---	---	---	5.0	3.5	4.0	9.0	7.0	8.0	11.5	10.0	11.0
31	---	---	---	5.5	3.0	4.0	---	---	---	11.5	11.0	11.0
MONTH	4.0	0.5	1.5	6.0	1.5	3.0	9.5	3.0	6.0	13.5	7.5	10.0

PEND OREILLE RIVER BASIN

12370000 SWAN RIVER NEAR BIGFORK, MT--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.0	10.5	11.5	17.0	14.5	16.0	22.5	19.5	20.5	18.0	16.5	17.0
2	12.0	10.5	11.5	17.5	15.0	16.0	22.0	19.0	20.5	18.0	15.5	16.5
3	12.5	11.5	12.0	16.5	14.0	15.0	22.0	19.0	20.5	18.5	15.0	16.0
4	13.0	11.0	12.0	15.0	13.5	14.0	22.0	19.0	20.5	18.5	15.0	16.5
5	13.0	11.5	12.0	15.5	13.5	14.5	22.0	19.0	20.5	16.5	15.5	16.0
6	13.5	12.0	12.5	15.0	14.0	14.5	22.0	19.0	20.5	16.0	15.0	15.5
7	14.5	12.5	13.0	16.0	14.0	15.0	22.5	19.5	20.5	18.0	14.5	16.0
8	13.5	11.5	12.5	16.0	14.5	15.0	22.5	19.0	20.5	16.5	15.0	15.5
9	13.5	11.0	12.5	16.5	15.0	15.5	22.5	19.0	20.5	15.5	14.5	15.0
10	14.5	13.0	13.5	17.0	14.5	16.0	22.0	19.5	20.5	14.5	14.0	14.5
11	13.5	12.5	13.0	17.0	15.0	16.0	22.0	19.0	20.0	17.5	14.0	15.5
12	12.5	12.0	12.5	18.0	15.5	16.5	21.5	18.5	20.0	17.5	14.0	15.5
13	13.5	12.5	12.5	18.5	16.0	17.5	21.5	18.5	20.0	18.5	15.0	16.0
14	13.0	12.5	12.5	19.0	16.5	17.5	21.5	18.0	19.5	18.5	15.0	16.5
15	13.0	12.5	12.5	19.0	16.5	18.0	21.5	18.0	19.5	18.0	15.0	16.5
16	13.5	12.0	12.5	19.0	16.5	18.0	21.5	18.0	19.5	18.5	15.5	16.5
17	13.5	12.0	13.0	19.0	17.0	18.0	20.0	17.5	18.5	18.5	15.5	16.5
18	13.5	12.5	13.0	19.0	17.0	18.0	20.0	17.0	18.5	16.5	15.5	16.0
19	13.0	12.5	12.5	20.0	17.5	18.5	20.0	17.5	18.5	17.0	15.0	16.0
20	13.5	12.0	12.5	20.5	17.5	19.0	20.5	17.0	18.0	15.0	13.5	14.0
21	14.0	12.5	13.0	20.5	18.0	19.5	20.0	16.5	18.0	14.0	11.5	13.0
22	14.5	13.0	13.5	20.5	18.0	19.5	20.0	16.5	18.0	13.5	10.5	11.5
23	15.0	13.5	14.0	21.0	17.0	19.5	20.0	16.5	18.0	13.5	10.0	11.5
24	14.5	13.5	14.0	21.0	18.0	19.0	18.5	17.5	18.0	14.0	10.5	12.0
25	15.0	13.5	14.0	21.0	18.0	19.5	20.0	17.0	18.5	14.5	11.0	12.0
26	15.0	13.0	14.0	21.5	18.5	20.0	20.0	16.5	18.0	14.5	11.0	12.5
27	15.5	13.5	14.5	21.5	18.5	20.0	17.5	16.5	17.0	14.5	11.0	12.0
28	15.5	13.5	14.5	21.5	18.5	20.0	19.0	15.5	17.0	14.0	11.0	12.0
29	16.0	13.5	14.5	22.0	19.0	20.5	19.0	15.5	17.0	13.0	11.5	12.0
30	16.5	14.5	15.5	22.0	19.0	20.5	18.5	16.5	17.5	12.5	12.0	12.0
31	---	---	---	21.5	19.5	20.5	19.0	16.0	17.0	---	---	---
MONTH	16.5	10.5	13.0	22.0	13.5	17.5	22.5	15.5	19.0	18.5	10.0	14.5

PEND OREILLE RIVER BASIN

12371550 FLATHEAD LAKE AT POLSON, MT

LOCATION.--Lat 47°41'50", long 114°09'37", in $SW^1/_4SE^1/_4NE^1/_4$ sec.4, T.22 N., R.20 W., Lake County, Hydrologic Unit 17010208, at Polson.
DRAINAGE AREA.--7,086 mi^2.
PERIOD OF RECORD.--October 1, 1998 to current year. April to August 1900, daily lake elevations only, at site near Holt, 6 mi east of Somers (datum unknown). August 1908 to November 1909 (fragmentary), January 1910 to Sept.30, 1998 published as "at Somers". Monthend contents only for some periods, published in WSP 1316. Prior to April 1923, published as "at Polson." Oct. 1, 1941 to Sept. 30, 1998, unpublished daily lake elevations at Polson are available in files of Helena district office.
GAGE.--Water-stage recorder. Datum of gage is at Somers datum. Subtract 1.00 ft to convert Somers datum to sea level, supplementary adjustment of 1947. July 1 to Dec. 12, 1923, nonrecording gage at Somers site.
REMARKS--Natural storage in Flathead Lake increased by construction of Kerr Dam 4 mi downstream from natural lake outlet; storage began Apr. 11, 1938. Usable capacity, 1,791,000 acre-ft at controlled spillway elevation 2,893.00 ft. Dead storage unknown below 2,878 ft, elevation of natural outlet. Minimum operating level, 572,300 acre-ft, elevation 2,883.00 ft for on-site power generation. Water is used for power production, flood control, recreation, and irrigation. Figures given herein represent usable contents.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,208,000 acre-ft, June 19, 1933, elevation, 2,896.26 ft; minimum, 347,000 acre-ft, Dec. 5, 1936, elevation, 2,881.07 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,792,000 acre-ft, June 17, elevation, 2,893.01 ft; minimum, 671,800 acre-ft, Apr. 4, elevation, 2,883.84 ft.

Capacity table (elevation, in feet and contents, in acre-ft)

Elevation	Contents
2,883	572,300
2,886	930,300
2,888	1,172,000
2,890	1,417,000
2,892	1,665,000
2,894	1,917,000

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2892.63	2892.34	2889.99	2886.38	2884.15	2884.14	2883.96	2887.16	2891.19	2892.86	2892.74	2892.60
2	2892.63	2892.28	2889.88	2886.23	2884.12	2884.12	2884.02	2887.26	2891.27	2892.89	2892.70	2892.61
3	2892.57	2892.20	2889.85	2886.08	2884.16	2884.09	2883.96	2887.41	2891.34	2892.93	2892.69	2892.60
4	2892.58	2892.08	2889.78	2885.94	2884.19	2884.12	2883.84	2887.53	2891.40	2892.92	2892.66	2892.66
5	2892.58	2892.05	2889.63	2885.82	2884.16	2884.15	2883.90	2887.68	2891.46	2892.90	2892.66	2892.64
6	2892.57	2891.98	2889.47	2885.75	2884.11	2884.16	2883.93	2887.75	2891.55	2892.89	2892.65	2892.55
7	2892.50	2891.90	2889.38	2885.62	2884.07	2884.13	2884.00	2887.81	2891.70	2892.89	2892.67	2892.53
8	2892.49	2891.81	2889.29	2885.51	2884.07	2884.12	2884.05	2887.79	2891.83	2892.91	2892.65	2892.46
9	2892.58	2891.71	2889.20	2885.33	2884.06	2884.10	2884.07	2887.80	2892.02	2892.93	2892.64	2892.41
10	2892.62	2891.60	2889.07	2885.29	2884.12	2884.06	2884.11	2887.86	2892.21	2892.91	2892.65	2892.43
11	2892.66	2891.50	2888.97	2885.24	2884.15	2884.05	2884.13	2887.94	2892.35	2892.90	2892.64	2892.45
12	2892.66	2891.34	2888.82	2885.12	2884.13	2884.05	2884.19	2888.00	2892.47	2892.89	2892.66	2892.43
13	2892.66	2891.26	2888.69	2885.13	2884.14	2884.05	2884.40	2888.02	2892.57	2892.88	2892.64	2892.42
14	2892.65	2891.28	2888.60	2885.07	2884.19	2883.98	2884.56	2888.01	2892.66	2892.85	2892.61	2892.41
15	2892.73	2891.40	2888.51	2885.00	2884.12	2884.03	2884.65	2887.99	2892.85	2892.80	2892.65	2892.38
16	2892.73	2891.47	2888.47	2884.91	2884.11	2884.03	2884.76	2888.02	2892.98	2892.81	2892.64	2892.37
17	2892.73	2891.48	2888.38	2884.79	2884.07	2883.94	2884.88	2888.05	2893.01	2892.79	2892.63	2892.37
18	2892.77	2891.44	2888.25	2884.78	2884.03	2883.98	2885.00	2888.13	2892.96	2892.75	2892.62	2892.33
19	2892.77	2891.38	2888.18	2884.75	2884.03	2883.93	2885.10	2888.28	2892.91	2892.74	2892.57	2892.40
20	2892.76	2891.23	2888.03	2884.71	2884.03	2883.98	2885.23	2888.46	2892.89	2892.77	2892.59	2892.40
21	2892.73	2891.16	2887.95	2884.63	2884.05	2883.97	2885.43	2888.62	2892.85	2892.79	2892.59	2892.49
22	2892.71	2891.04	2887.86	2884.58	2884.06	2883.98	2885.63	2888.82	2892.86	2892.80	2892.63	2892.39
23	2892.69	2890.93	2887.72	2884.51	2884.07	2883.89	2885.87	2889.11	2892.82	2892.77	2892.65	2892.29
24	2892.64	2890.79	2887.57	2884.46	2884.10	2883.95	2886.11	2889.50	2892.80	2892.77	2892.66	2892.27
25	2892.64	2890.72	2887.44	2884.41	2884.13	2883.96	2886.39	2889.81	2892.81	2892.80	2892.69	2892.24
26	2892.62	2890.64	2887.30	2884.36	2884.15	2883.97	2886.54	2890.07	2892.82	2892.81	2892.67	2892.22
27	2892.63	2890.53	2887.14	2884.35	2884.17	2883.98	2886.69	2890.33	2892.78	2892.80	2892.68	2892.20
28	2892.57	2890.39	2886.98	2884.34	2884.15	2883.98	2886.77	2890.53	2892.77	2892.80	2892.70	2892.18
29	2892.48	2890.25	2886.82	2884.33	2884.18	2884.01	2886.91	2890.75	2892.76	2892.82	2892.68	2892.13
30	2892.44	2890.11	2886.67	2884.28	---	2884.01	2887.05	2890.94	2892.81	2892.83	2892.67	2892.10
31	2892.31	---	2886.54	2884.22	---	2884.00	---	2891.09	---	2892.82	2892.63	---
MAX	2892.77	2892.34	2889.99	2886.38	2884.19	2884.16	2887.05	2891.09	2893.01	2892.93	2892.74	2892.66
MIN	2892.31	2890.11	2886.54	2884.22	2884.03	2883.89	2883.84	2887.16	2891.19	2892.74	2892.57	2892.10

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT END OF MONTH

1704	1431	995.5	717.0	712.2	690.7	1057	1552	1767	1768	1744	1678

CHANGE IN CONTENTS, IN ACRE-FEET

-40000	-273000	-435500	-278500	-4800	-21500	+366300	+495000	+215000	+1000	-24000	-66000

CAL YR 1999.....+197300
WTR YR 2000..... -66000

PEND OREILLE RIVER BASIN

12372000 FLATHEAD RIVER NEAR POLSON, MT

LOCATION.--Lat 47°40'49", long 114°14'45", in $SW^1/_4NE^1/_4SE^1/_4$ sec. 11, T.22 N., R.21 W., Lake County, Hydrologic Unit 17010212, on left bank 0.5 mi downstream from Kerr Dam, 4.0 mi west of Polson, 5.0 mi downstream from Flathead Lake, and at river mile 71.5.

DRAINAGE AREA.--7,096 mi^2.

PERIOD OF RECORD.--July 1907 to current year.

REVISED RECORDS.--WSP 652: 1926. WSP 752: 1932. WSP 1182: 1948. WSP 1216: Drainage area. WSP 1246: 1928(M). WSP 1636: 1958 (adjusted runoff).

GAGE.--Water-stage recorder. Datum of gage is 2,692.70 ft above sea level (levels by The Montana Power Co.). Prior to Oct. 1, 1941, nonrecording gages or water-stage recorder at several sites near highway bridge at old site of Michell's ferry 6 mi downstream from present site, all at datum 2,629.20 ft above sea level (from river-profile survey).

REMARKS.--Records excellent. Flow regulated by Flathead Lake (Kerr Dam) since April 1938 (station number 12371500) and Hungry Horse Reservoir (station number 12362000) since September 1951. Diversions upstream from station for irrigation of about 10,000 acres. Flathead project pumps can divert up to 12,000 acre-ft per month when required for irrigation of lands downstream from station. U.S.Geological Survey satellite telemeter at station. Four observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--93 years, 11,596 ft^3/s, 22.19 in/yr, 8,401,000 acre-ft/yr, adjusted for change in contents in Hungry Horse Reservoir and Flathead Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,800 ft^3/s, May 29, 1928, gage height, 17.2 ft, site and datum then in use; minimum probably less than 5.0 ft^3/s, Apr. 13, 1938; minimum daily, 32 ft^3/s, Apr. 12, 1938.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a stage of about 21 ft, present datum; discharge, about 110,000 ft^3/s, from lake elevation-discharge study.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29,000 ft^3/s, June 17, gage height, 12.16 ft; minimum daily, 3,490 ft^3/s, Sept. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6070	9270	14400	14100	8540	8390	7900	18700	14100	14600	12000	5760
2	5300	9560	14400	14000	8520	8420	7890	19600	14000	14700	12000	4910
3	4340	10200	14400	14000	7980	8360	7860	20100	14000	16200	9050	4070
4	4080	10300	14400	14000	7490	8290	7750	20700	13900	17600	8950	4000
5	4080	10300	14400	14000	7500	8320	7430	21200	13300	17300	8640	5100
6	4080	10300	14400	13800	7480	8530	7500	21300	12700	15600	8120	5480
7	4090	10300	14400	13500	7500	8690	7730	21400	12800	15300	8000	5590
8	4090	11000	14300	13400	7550	8360	7950	19700	12800	14700	7910	5590
9	4080	11900	14300	13200	7540	8250	7970	16600	13400	14600	8100	5590
10	4090	11900	14300	12000	7520	8180	8000	15700	14400	14500	6900	5570
11	4090	12100	14300	11500	7900	8090	8210	16000	14200	14400	6930	5550
12	4440	12500	14300	11400	8130	8120	8820	16000	14100	14200	7000	5530
13	4460	12600	14300	11400	8120	8140	8870	15900	14400	14000	7030	5500
14	4490	12700	14300	11400	8370	7960	8990	15600	14600	13900	6850	5470
15	4480	13000	14300	11400	8540	7870	9420	14900	16200	13600	6470	4940
16	4470	13000	14300	11400	8670	8000	9640	14200	23500	13500	6470	3920
17	4460	13500	14300	10700	7720	8000	10300	14100	27900	13500	6490	3510
18	4760	14400	14200	10400	7590	7890	11000	14200	28900	12900	6460	3500
19	5200	14400	14200	10400	7860	7810	11200	14200	27200	10900	5850	3490
20	5710	14400	14200	10400	7980	7790	11900	14300	26700	10200	5890	3960
21	5820	14400	14100	10300	8030	7730	12900	14200	26400	10200	5610	4950
22	5860	14400	14100	10300	8090	7700	13600	14300	25300	10200	5380	5470
23	5850	14400	14100	9790	8150	7630	14300	14400	24300	10200	5370	5480
24	5850	14400	14100	9590	8210	7540	15100	14400	22900	10200	5380	5430
25	5970	14400	14100	9580	8230	7670	15800	14500	21400	10200	5370	5420
26	6980	14400	14100	8930	8330	7760	16200	14500	21300	10000	5380	5410
27	7940	14400	14100	8580	8560	7980	16500	14500	19700	9020	5420	5390
28	8880	14400	14100	8620	8580	8310	16900	14500	17100	9030	5660	5410
29	9300	14400	14100	8650	8440	7800	17500	14500	15000	8990	6420	5390
30	9240	14400	14100	8630	---	7600	17900	14500	14500	9040	6240	5350
31	9240	---	14100	8620	---	7820	---	14000	---	11100	5880	---
TOTAL	171790	381630	441500	347990	233120	249000	333030	502700	551000	394380	217220	150730
MEAN	5542	12720	14240	11230	8039	8032	11100	16220	18370	12720	7007	5024
MAX	9300	14400	14400	14100	8670	8690	17900	21400	28900	17600	12000	5760
MIN	4080	9270	14100	8580	7480	7540	7430	14000	12700	8990	5370	3490
AC-FT	340700	757000	875700	690200	462400	493900	660600	997100	1093000	782300	430900	299000
CFSM	.78	1.79	2.01	1.58	1.13	1.13	1.56	2.29	2.59	1.79	.99	.71
IN.	.90	2.00	2.31	1.82	1.22	1.31	1.75	2.64	2.89	2.07	1.14	.79
†	-91000	-231000	-601500	-496500	-261800	-223500	+463300	+1112000	+663000	-186000	-257000	-14800
MEAN ††	4061	8840	4459	3150	3487	4398	18890	34300	29510	9698	2828	2538
CFSM ††	0.57	1.25	0.63	0.44	0.49	0.62	2.66	4.83	4.16	1.37	0.40	0.36
IN. ††	0.66	1.39	0.72	0.51	0.53	0.71	2.97	5.57	4.64	1.58	0.46	0.40
AC-FT††	249700	526000	274200	193700	200600	270400	1124000	2109000	1756000	596300	173900	151000

OBSERVED

CAL YR 1999	TOTAL	4014780	MEAN	11000	MAX	34500	MIN	4050	AC-FT	7963000	†	496300
WTR YR 2000	TOTAL	3974090	MEAN	10860	MAX	28900	MIN	3490	AC-FT	7883000	†	-258000

ADJUSTED

CAL YR 1999	TOTAL	4264936	MEAN	11680	CFSM	1.65	IN	22.35	AC-FT	8459300		
WTR YR 2000	TOTAL	3844114	MEAN	10500	CFSM	1.48	IN	20.15	AC-FT	7625000		

† Change in contents in acre-feet, in Hungry Horse Reservoir and Flathead Lake.
†† Adjusted for change in contents.

12374250 MILL CREEK ABOVE BASSOO CREEK, NEAR NIARADA, MT

LOCATION.--Lat 47°49'47", long 114°41'48", in SE$^1/_4$NW$^1/_4$NE$^1/_4$ sec.20, T.24 N., R.24 W., Sanders County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank 0.3 mi upstream from Bassoo Creek, and 4.1 mi northwest of Niarada.

DRAINAGE AREA.--19.6 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,000 ft above sea level, from topographic map. Prior to Sept. 23, 1987, at site 305 ft downstream at different datum. Prior to July 23, 1991, at site 275 ft downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known regulation or diversion upstream of station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	2.8	3.6	e2.8	2.8	3.3	8.3	28	23	7.1	3.1	2.4
2	2.5	2.8	3.6	e3.2	e3.1	3.3	9.7	29	20	7.1	2.9	2.8
3	2.5	2.8	3.6	e3.1	e3.3	3.4	11	33	19	7.6	2.9	2.7
4	2.5	4.6	e3.4	3.1	e3.1	3.5	11	35	18	7.7	2.8	2.5
5	2.5	3.5	e3.3	3.1	e3.1	3.8	15	36	19	7.1	2.7	2.4
6	2.5	3.3	e3.5	3.1	e3.1	4.1	16	36	19	7.3	2.7	2.4
7	2.4	3.5	3.4	2.9	e3.1	4.2	15	32	19	7.6	2.7	2.4
8	2.4	3.3	e3.3	2.9	e3.1	4.2	13	29	19	6.6	2.7	2.4
9	4.1	3.1	3.3	3.0	3.1	4.2	13	28	19	6.5	2.7	2.4
10	2.8	3.1	3.2	e2.9	e3.0	4.0	14	26	18	6.4	2.5	2.4
11	2.7	3.0	3.1	e2.9	e2.8	4.0	17	24	18	6.1	2.6	2.6
12	2.7	3.0	3.2	e2.8	e2.9	4.0	20	22	17	5.6	2.6	2.5
13	2.7	8.0	3.7	e2.5	e3.0	4.0	26	21	16	5.4	2.5	2.5
14	2.7	4.9	3.8	e2.9	3.1	4.0	33	19	15	5.4	2.5	2.4
15	2.6	3.6	3.3	e3.2	3.1	4.0	31	18	15	4.9	2.4	2.4
16	2.6	3.4	3.3	3.2	3.0	4.0	29	17	14	4.9	2.4	2.3
17	2.6	3.3	3.6	3.1	e2.8	4.0	28	17	13	4.9	2.4	2.3
18	2.6	3.3	3.7	e2.9	e2.6	4.0	32	17	12	4.7	2.4	2.3
19	2.6	3.3	e3.6	e2.8	e2.5	4.0	39	18	12	4.6	2.4	2.3
20	2.6	3.3	e3.6	e2.7	e2.6	4.2	45	21	11	4.6	2.3	2.3
21	2.6	3.3	e3.6	e2.7	2.9	3.7	48	21	11	4.6	2.3	2.3
22	2.6	3.2	e3.4	e2.8	2.9	3.7	51	22	10	4.0	2.3	2.3
23	2.6	3.1	3.3	2.9	3.2	4.5	52	22	9.9	3.8	2.3	2.3
24	2.6	3.1	3.3	2.8	3.7	4.9	48	23	9.6	3.8	2.3	2.3
25	2.6	3.4	3.2	2.8	3.2	4.9	42	23	9.4	3.6	2.3	2.4
26	2.6	8.5	3.2	2.8	3.1	5.4	37	23	8.8	3.4	2.3	2.3
27	2.7	6.2	e3.0	2.8	3.1	6.1	32	22	8.4	3.4	2.3	2.3
28	3.4	4.3	e2.9	2.8	3.2	8.1	30	22	8.1	3.3	2.2	2.3
29	3.3	3.8	e2.8	2.8	3.3	8.8	29	20	7.7	3.2	2.2	2.4
30	2.8	3.7	e2.8	2.8	---	8.6	29	20	7.4	3.1	2.2	2.5
31	2.8	---	e2.7	e2.7	---	8.2	---	27	---	3.1	2.2	---
TOTAL	83.7	114.5	103.3	89.8	87.8	145.1	824.0	751	426.3	161.4	77.1	72.1
MEAN	2.70	3.82	3.33	2.90	3.03	4.68	27.5	24.2	14.2	5.21	2.49	2.40
MAX	4.1	8.5	3.8	3.2	3.7	8.8	52	36	23	7.7	3.1	2.8
MIN	2.4	2.8	2.7	2.5	2.5	3.3	8.3	17	7.4	3.1	2.2	2.3
AC-FT	166	227	205	178	174	288	1630	1490	846	320	153	143
CFSM	.14	.19	.17	.15	.15	.24	1.40	1.24	.72	.27	.13	.12
IN.	.16	.22	.20	.17	.17	.28	1.56	1.43	.81	.31	.15	.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2000, BY WATER YEAR (WY)

MEAN	2.71	3.59	3.75	3.40	4.12	8.07	21.7	25.7	15.6	5.93	3.17	2.56
MAX	5.05	8.60	16.9	9.83	13.6	35.1	49.7	86.8	37.7	13.0	5.61	3.39
(WY)	1986	1986	1996	1990	1996	1986	1996	1997	1997	1991	1997	1996
MIN	1.86	2.00	2.12	1.94	1.71	2.55	5.03	11.4	4.89	2.50	1.91	1.76
(WY)	1989	1988	1988	1985	1994	1985	1984	1992	1987	1994	1988	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1983 - 2000	
ANNUAL TOTAL	2906.6		2936.1			
ANNUAL MEAN	7.96		8.02		8.36	
HIGHEST ANNUAL MEAN					18.8	1997
LOWEST ANNUAL MEAN					4.04	1994
HIGHEST DAILY MEAN	52	May 26	52	Apr 23	155	Apr 28 1997
LOWEST DAILY MEAN	2.3	Feb 15	a2.2	Aug 28	1.2	Feb 4 1989
ANNUAL SEVEN-DAY MINIMUM	2.3	Feb 15	2.2	Aug 25	1.4	Feb 2 1989
INSTANTANEOUS PEAK FLOW			b52	Apr 22	d173	Apr 28 1997
INSTANTANEOUS PEAK STAGE			c2.33	Jan 20	f6.83	May 20 1991
INSTANTANEOUS LOW FLOW					g.85	Jan 6 1988
INSTANTANEOUS LOW STAGE					.81	Sep 30 1996
ANNUAL RUNOFF (AC-FT)	5770		5820		6060	
ANNUAL RUNOFF (CFSM)	.41		.41		.43	
ANNUAL RUNOFF (INCHES)	5.52		5.57		5.80	
10 PERCENT EXCEEDS	20		22		21	
50 PERCENT EXCEEDS	3.4		3.3		3.5	
90 PERCENT EXCEEDS	2.5		2.4		2.0	

a--Also occurred on Aug. 29-31.
b--Gage height, 2.19 ft.
c--Backwater from ice.
d--Gage height, 2.60 ft.
e--Estimated.
f--Site and datum then in use.
g--Gage height, 5.00 ft, site and datum then in use.

PEND OREILLE RIVER BASIN

12375900 SOUTH CROW CREEK NEAR RONAN, MT

LOCATION.--Lat 47°29'30", long 114°01'33", in NW$^1/_4$NE$^1/_4$SW$^1/_4$ sec.16, T.20 N., R.19 W., Lake County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank 200 ft upstream of Pablo Feeder Canal, 2.2 mi northeast of Kicking Horse Reservoir, 4.5 mi southeast of Ronan, and at river mile 2.6.

DRAINAGE AREA.--7.57 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,320 ft above sea level, from topographic map.

REMARKS.--Records fair. No known regulation or diversion upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	6.4	6.9	5.6	5.6	6.3	8.8	23	52	36	12	7.7
2	6.6	6.6	6.9	5.6	5.8	6.1	8.8	32	46	36	12	9.4
3	6.6	6.6	6.6	5.6	5.8	6.1	8.8	31	45	36	12	8.8
4	6.6	7.0	6.3	5.6	5.8	6.1	9.6	37	47	34	11	8.1
5	6.5	6.9	6.3	5.6	5.8	6.5	14	33	51	32	11	8.0
6	6.3	6.9	6.3	5.6	5.8	6.6	13	29	57	32	11	8.1
7	6.3	6.9	6.1	5.6	5.6	6.9	11	26	64	31	11	8.1
8	6.1	6.8	6.1	5.6	5.6	6.6	9.8	25	67	30	10	8.0
9	6.1	6.6	6.1	5.6	5.6	6.4	9.8	25	70	28	10	7.5
10	6.3	6.5	6.1	5.6	5.6	6.3	12	25	68	26	9.9	7.9
11	6.3	6.3	6.1	5.6	5.4	6.1	14	23	63	25	9.6	8.5
12	6.5	6.3	6.1	5.4	5.3	6.1	18	21	56	25	9.9	8.5
13	6.6	6.3	6.3	5.3	5.3	6.1	21	19	64	23	9.6	8.0
14	6.6	6.3	6.1	5.3	5.5	6.1	28	19	67	22	9.2	7.5
15	6.6	6.3	6.1	5.3	5.5	5.9	20	19	74	21	9.2	7.4
16	6.6	6.2	6.6	5.3	5.3	5.8	17	22	68	21	9.1	7.2
17	6.6	6.1	6.6	5.3	5.3	5.8	16	27	61	20	8.8	7.1
18	6.6	6.3	6.6	5.3	5.1	5.8	18	31	56	19	8.8	6.9
19	6.6	6.1	6.3	5.3	e5.0	5.8	24	36	54	19	8.4	6.9
20	6.6	6.1	6.3	5.3	e5.0	5.6	25	38	54	18	8.1	6.7
21	6.9	5.8	6.3	5.3	4.9	5.6	26	41	51	18	8.1	8.1
22	6.9	5.8	6.1	5.3	4.9	5.6	31	49	50	17	8.1	7.3
23	6.6	6.0	6.1	5.2	5.1	6.0	29	57	49	16	8.1	7.2
24	6.6	6.1	6.1	5.1	5.6	6.5	24	53	47	15	8.1	7.2
25	6.6	6.8	5.8	5.1	5.8	6.6	22	53	44	15	7.8	7.2
26	7.0	7.7	5.8	5.4	5.8	6.6	21	57	42	14	7.7	7.2
27	7.7	7.8	5.8	5.6	5.8	6.6	20	53	41	14	7.7	7.2
28	7.7	7.2	5.8	5.6	6.1	9.8	24	62	39	14	7.8	7.2
29	8.0	6.9	5.8	5.6	6.1	11	25	58	37	13	7.8	7.2
30	7.7	7.2	5.6	5.6	---	9.4	22	52	36	13	7.7	7.8
31	7.1	---	5.6	5.6	---	8.8	---	54	---	13	7.5	---
TOTAL	208.4	196.8	191.6	168.8	159.8	205.5	550.6	1130	1620	696	287.0	229.9
MEAN	6.72	6.56	6.18	5.45	5.51	6.63	18.4	36.5	54.0	22.5	9.26	7.66
MAX	8.0	7.8	6.9	5.6	6.1	11	31	62	74	36	12	9.4
MIN	6.1	5.8	5.6	5.1	4.9	5.6	8.8	19	36	13	7.5	6.7
AC-FT	413	390	380	335	317	408	1090	2240	3210	1380	569	456
CFSM	.89	.87	.82	.72	.73	.88	2.42	4.82	7.13	2.97	1.22	1.01
IN.	1.02	.97	.94	.83	.79	1.01	2.71	5.55	7.96	3.42	1.41	1.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2000, BY WATER YEAR (WY)

MEAN	9.25	9.82	8.10	7.30	6.82	7.94	16.4	46.0	68.1	37.5	13.8	9.85
MAX	13.9	19.2	15.2	11.0	9.97	12.9	25.2	68.6	104	73.6	21.6	19.6
(WY)	1983	1990	1990	1984	1986	1986	1990	1993	1984	1983	1983	1985
MIN	6.60	6.56	5.76	5.45	5.03	6.28	8.80	25.3	35.9	15.5	7.87	6.88
(WY)	1989	2000	1995	2000	1993	1988	1995	1999	1987	1988	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1982 - 2000	
ANNUAL TOTAL	5764.7		5644.4			
ANNUAL MEAN	15.8		15.4		20.1	
HIGHEST ANNUAL MEAN					27.2	1983
LOWEST ANNUAL MEAN					13.7	1992
HIGHEST DAILY MEAN	86	Jun 17	74	Jun 15	276	Jun 30 1983
LOWEST DAILY MEAN	5.5	Feb 20	4.9	Feb 21,22	4.4	Feb 17 1993
ANNUAL SEVEN-DAY MINIMUM	5.6	Feb 16	5.0	Feb 17	4.7	Feb 13 1993
INSTANTANEOUS PEAK FLOW			84	Jun 15	b312	Jun 30 1991
INSTANTANEOUS PEAK STAGE			2.80	Jun 15	3.67	Jun 30 1991
INSTANTANEOUS LOW FLOW			a4.4	Feb 20		
ANNUAL RUNOFF (AC-FT)	11430		11200		14570	
ANNUAL RUNOFF (CFSM)	2.09		2.04		2.66	
ANNUAL RUNOFF (INCHES)	28.33		27.74		36.09	
10 PERCENT EXCEEDS	47		41		53	
50 PERCENT EXCEEDS	7.4		7.2		9.7	
90 PERCENT EXCEEDS	5.8		5.6		6.3	

a--Gage height, 1.93 ft, may have been lower during ice-effected period.
b--From rating curve extended above 185 ft^3/s, on basis of step-backwater study.
e--Estimated.

PEND OREILLE RIVER BASIN

12377150 MISSION CREEK ABOVE RESERVOIR, NEAR ST. IGNATIUS, MT

LOCATION.--Lat 47°19'23", long 113°58'43", in NW$^1/_4$SW$^1/_4$NE$^1/_4$ sec.14, T.18 N., R.19 W., Lake County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank, 0.2 mi southwest of upper BIA campground, 0.5 mi upstream from Mission Reservoir, and 5.3 mi east of St. Ignatius.

DRAINAGE AREA.--12.4 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,460 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated discharges, which are poor. No known regulation or diversions upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	17	15	9.3	7.1	8.3	9.9	51	100	130	55	21
2	17	17	14	9.6	8.7	8.2	9.7	72	88	126	56	27
3	17	16	14	9.7	8.3	7.9	9.4	80	93	122	53	25
4	16	16	13	9.8	7.7	7.9	9.5	82	117	105	50	22
5	16	16	12	9.4	7.4	8.2	12	69	144	92	48	21
6	16	16	12	9.2	7.2	8.5	12	58	184	124	48	26
7	16	15	12	9.0	7.2	8.5	11	51	202	138	46	25
8	16	15	12	8.8	7.2	8.5	10	48	232	118	44	23
9	19	15	12	8.6	7.7	8.3	9.9	49	253	109	42	22
10	19	15	12	6.5	7.5	8.0	11	50	174	102	41	24
11	18	14	13	7.3	7.3	7.8	13	45	134	99	40	29
12	17	14	13	7.8	7.2	7.8	16	41	112	97	39	26
13	17	14	13	7.8	7.2	7.7	22	37	143	97	36	29
14	18	14	12	7.8	7.8	7.5	29	35	145	106	34	35
15	18	15	13	7.8	7.4	7.5	29	35	288	106	32	34
16	18	16	13	7.9	8.2	7.3	26	41	228	93	31	32
17	18	16	14	8.2	e7.2	7.2	24	58	157	83	29	32
18	18	19	13	8.2	7.2	7.0	24	77	142	78	29	30
19	17	17	13	8.0	e6.8	6.9	29	100	143	76	28	31
20	17	16	12	7.5	e6.6	6.6	37	103	131	77	28	31
21	17	16	12	7.6	6.6	6.6	44	108	122	75	26	30
22	16	16	12	7.8	6.9	6.6	58	136	137	72	25	25
23	16	16	11	7.8	6.9	7.9	61	172	153	72	24	23
24	16	15	10	7.6	7.9	8.2	51	141	135	71	24	22
25	16	18	10	7.5	8.7	7.9	42	127	126	67	24	21
26	16	22	9.3	7.7	8.6	7.8	36	132	129	63	24	20
27	18	20	9.2	8.1	8.5	7.8	32	118	125	61	24	19
28	19	17	9.2	8.5	8.5	9.9	41	125	125	60	23	19
29	20	15	9.0	8.2	8.5	11	53	125	126	57	22	18
30	18	15	8.7	7.7	---	11	51	113	132	56	21	22
31	18	---	8.8	e7.5	---	10	---	113	---	56	21	---
TOTAL	536	483	366.2	254.2	220.0	250.3	822.4	2592	4520	2788	1067	764
MEAN	17.3	16.1	11.8	8.20	7.59	8.07	27.4	83.6	151	89.9	34.4	25.5
MAX	20	22	15	9.8	8.7	11	61	172	288	138	56	35
MIN	16	14	8.7	6.5	6.6	6.6	9.4	35	88	56	21	18
AC-FT	1060	958	726	504	436	496	1630	5140	8970	5530	2120	1520
CFSM	1.39	1.30	.95	.66	.61	.65	2.21	6.74	12.2	7.25	2.78	2.05
IN.	1.61	1.45	1.10	.76	.66	.75	2.47	7.78	13.56	8.36	3.20	2.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2000, BY WATER YEAR (WY)

MEAN	25.4	19.5	13.5	10.7	9.13	10.8	26.7	102	172	117	50.0	31.2
MAX	36.8	28.5	21.3	14.9	12.6	15.4	43.9	168	222	181	74.9	67.4
(WY)	1983	1990	1990	1984	1986	1986	1990	1993	1997	1983	1997	1985
MIN	14.5	12.0	10.5	8.20	6.71	8.07	12.0	54.0	104	53.4	25.2	15.8
(WY)	1995	1988	1995	2000	1985	1985	1995	1984	1987	1988	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1982 - 2000	
ANNUAL TOTAL	17773.6		14663.1			
ANNUAL MEAN	48.7		40.1		49.1	
HIGHEST ANNUAL MEAN					61.0	1997
LOWEST ANNUAL MEAN					35.6	1988
HIGHEST DAILY MEAN	405	Jun 17	288	Jun 15	472	Jul 4 1995
LOWEST DAILY MEAN	8.2	Mar 9	6.5	Jan 10	a6.0	Feb 4 1985
ANNUAL SEVEN-DAY MINIMUM	8.2	Mar 9	6.9	Feb 17	6.3	Feb 15 1985
INSTANTANEOUS PEAK FLOW			364	Jun 15	b892	Jun 30 1991
INSTANTANEOUS PEAK STAGE			3.85	Jun 15	c5.16	Jun 30 1991
INSTANTANEOUS LOW FLOW			6.0	Jan 10	d5.9	Feb 18 1985
INSTANTANEOUS LOW STAGE			1.59	Jan 10	d0.72	Feb 18 1985
ANNUAL RUNOFF (AC-FT)	35250		29080		35580	
ANNUAL RUNOFF (CFSM)	3.93		3.23		3.96	
ANNUAL RUNOFF (INCHES)	53.32		43.99		53.82	
10 PERCENT EXCEEDS	151		122		137	
50 PERCENT EXCEEDS	17		18		23	
90 PERCENT EXCEEDS	9.2		7.7		9.2	

a--Also Feb. 9, 1994.
b--Gage height, 4.72 ft.
c--Backwater from debris dam.
d--May have been less during a period of ice.
e--Estimated.

PEND OREILLE RIVER BASIN

12381400 SOUTH FORK JOCKO RIVER NEAR ARLEE, MT

LOCATION.--Lat 47°11'44", long 113°50'59", in NE$^1/_4$NW$^1/_4$NE$^1/_4$ sec.35, T.17 N., R.18 W., Lake County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank 600 ft upstream from confluence with Jocko River and Twin Campground and 12 mi northeast of Arlee, MT.
DRAINAGE AREA.--56.0 mi^2.
PERIOD OF RECORD.--October 1982 to current year. Records published as "near Jocko" 1912-16 and in WSP 1246, 1316 are not equivalent.
GAGE.--Water-stage recorder. Elevation of gage is 3,970 ft above sea level, from topographic map.
REMARKS.--Records good except those for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. No known regulation or diversion upstream from station. U.S. Geological Survey telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	18	15	e8.5	e9.0	11	15	149	197	88	36	22
2	20	17	14	e8.5	e10	11	17	179	185	85	35	27
3	19	17	14	e8.5	e10	11	17	187	181	82	35	24
4	19	18	14	e8.0	e9.5	11	20	216	179	81	35	22
5	19	17	e13	e8.5	e9.5	11	27	201	180	78	34	22
6	18	18	e13	e8.5	e9.0	12	28	186	180	84	33	24
7	18	17	e13	e8.5	e9.0	12	25	171	178	77	32	23
8	18	16	13	e9.0	e8.5	12	24	164	175	72	32	21
9	33	16	e14	e9.0	e8.0	11	26	164	170	72	31	22
10	25	16	14	e9.0	e7.5	11	30	164	163	67	30	27
11	21	15	13	e9.0	e7.0	12	36	153	162	64	30	29
12	21	15	13	e8.5	e7.5	11	46	143	150	62	30	24
13	20	15	13	e8.5	e8.0	11	96	134	157	59	29	21
14	19	15	13	e8.5	e8.5	11	135	129	146	57	28	20
15	19	15	13	e9.0	e8.5	10	113	127	187	56	27	19
16	18	14	13	e9.0	e8.5	10	97	133	172	55	26	19
17	18	15	13	e8.5	e8.0	10	93	141	158	53	26	18
18	18	16	13	e8.5	e7.5	10	103	153	149	52	26	18
19	17	15	13	e8.5	e6.0	10	129	176	150	51	25	19
20	17	15	e12	e8.5	e7.0	9.9	148	183	145	50	25	20
21	17	14	e12	e8.5	e8.5	9.5	155	196	135	48	25	24
22	16	14	12	e9.0	e10	10	169	214	e130	47	24	21
23	16	14	11	e9.5	e11	12	169	228	e125	45	24	20
24	16	14	11	e9.5	11	11	150	219	e125	44	23	20
25	16	16	e10.5	e9.5	e10.5	11	136	209	e115	44	23	19
26	17	24	e10	e10	e10	12	125	202	e110	42	22	18
27	18	19	e9.5	e10	e10	13	124	198	e105	41	22	18
28	32	17	e9.5	e10	e10	17	144	219	e100	40	22	18
29	26	16	e9.0	10	11	16	143	202	e95	39	22	17
30	21	e15	e9.0	e9.0	---	15	137	187	91	38	22	24
31	19	---	e9.0	e8.0	---	15	---	216	---	37	21	---
TOTAL	611	483	378.5	275.5	258.5	359.4	2677	5543	4495	1810	855	640
MEAN	19.7	16.1	12.2	8.89	8.91	11.6	89.2	179	150	58.4	27.6	21.3
MAX	33	24	15	10	11	17	169	228	197	88	36	29
MIN	16	14	9.0	8.0	6.0	9.5	15	127	91	37	21	17
AC-FT	1210	958	751	546	513	713	5310	10990	8920	3590	1700	1270
CFSM	.35	.29	.22	.16	.16	.21	1.59	3.19	2.68	1.04	.49	.38
IN.	.41	.32	.25	.18	.17	.24	1.78	3.68	2.99	1.20	.57	.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2000, BY WATER YEAR (WY)

MEAN	22.0	18.5	14.9	12.0	10.7	15.7	59.1	201	188	76.0	37.5	26.1
MAX	42.2	26.3	37.4	22.2	22.8	56.0	113	459	446	140	53.5	44.5
(WY)	1986	1986	1996	1986	1986	1986	1990	1997	1997	1997	1997	1985
MIN	13.0	11.1	9.33	3.66	4.45	7.68	24.8	119	70.2	37.0	21.6	15.8
(WY)	1988	1988	1988	1985	1985	1985	1995	1995	1992	1992	1992	1987

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1983 - 2000	
ANNUAL TOTAL	21592.8		18385.9			
ANNUAL MEAN	59.2		50.2		56.9	
HIGHEST ANNUAL MEAN					108	1997
LOWEST ANNUAL MEAN					35.0	1992
HIGHEST DAILY MEAN	437	May 26	228	May 23	1060	May 17 1997
LOWEST DAILY MEAN	4.8	Feb 2	6.0	Feb 19	2.0	Feb 4 1989
ANNUAL SEVEN-DAY MINIMUM	5.2	Jan 31	7.7	Feb 14	2.6	Feb 1 1989
INSTANTANEOUS PEAK FLOW			a237	May 23	c1220	May 17 1997
INSTANTANEOUS PEAK STAGE			b2.65	May 23	d4.98	Feb 15 1989
ANNUAL RUNOFF (AC-FT)	42830		36470		41210	
ANNUAL RUNOFF (CFSM)	1.06		.90		1.02	
ANNUAL RUNOFF (INCHES)	14.34		12.21		13.80	
10 PERCENT EXCEEDS	194		162		153	
50 PERCENT EXCEEDS	19		19		23	
90 PERCENT EXCEEDS	6.5		9.0		9.5	

a--Also occurred on May 24, 28.
b--May have been higher during periods of backwater from ice.
c--Gage height, 4.31 ft.
d--Backwater from ice.
e--Estimated.

PEND OREILLE RIVER BASIN

12383500 BIG KNIFE CREEK NEAR ARLEE, MT

LOCATION.--Lat 47°08'51", long 113°58'24", in NW$^1/_4$SW$^1/_4$NW/4 sec.14, T.16 N., R.19 W., Lake County, Hydrologic Unit 17010212, Flathead Indian Reservation, on left bank, 150 ft upstream of S Canal, 1 mi upstream of mouth, and 5.5 mi east of Arlee.

DRAINAGE AREA.--6.88 mi^2.

PERIOD OF RECORD.--August 1910 to September 1916 (no winter records), October 1982 to current year. Monthly discharge only for some periods, published in WSP 1316. Published as "near Jocko" 1910-16 and in WSP 916, and as "above Big Knife Canal, near Jocko" in WSP 1246, 1316.

REVISED RECORDS.--WSP 1246: 1916. WSP 1316: 1910-12, 1915-16.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,720 ft above sea level, from topographic map. Prior to July 28, 1998, at site 38 ft upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known regulation or diversion upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	8.2	7.5	e4.7	4.3	4.1	3.7	7.9	16	14	12	9.1
2	8.9	8.2	7.5	e4.8	4.8	4.1	3.9	9.3	15	13	12	10
3	8.9	8.2	7.5	e4.9	4.2	3.9	3.9	10	14	14	11	9.0
4	8.9	8.2	6.8	e4.9	4.1	3.9	3.8	13	16	14	11	8.5
5	8.8	8.2	6.0	e5.0	4.1	3.8	4.1	12	17	14	11	8.5
6	8.4	7.9	6.0	5.0	4.1	3.8	4.1	11	18	16	12	8.6
7	8.5	7.8	5.8	5.0	4.1	3.9	4.1	10	20	15	11	8.5
8	8.5	7.7	5.7	5.0	4.1	3.9	4.0	9.6	20	14	11	8.3
9	9.6	7.8	5.7	4.9	4.2	3.9	3.9	9.5	21	14	11	8.2
10	9.2	7.3	5.7	5.0	4.1	3.9	4.1	9.1	20	14	11	8.5
11	8.9	7.2	5.7	5.0	4.0	3.7	4.1	8.9	19	14	11	8.7
12	8.9	7.2	5.7	4.9	3.9	3.7	4.3	8.5	17	14	11	8.2
13	8.5	7.2	5.6	4.8	3.8	3.7	6.4	8.1	17	14	10	8.0
14	8.5	7.2	5.6	4.9	3.8	3.7	9.6	7.5	17	14	10	7.6
15	8.5	7.2	5.6	5.0	3.9	3.7	9.2	7.5	20	13	10	7.5
16	8.5	7.2	5.6	5.0	3.7	3.7	7.7	7.7	20	14	10	7.5
17	8.3	7.3	5.5	4.8	3.7	3.7	7.2	7.9	19	14	10	7.5
18	8.0	7.6	5.5	4.5	3.7	3.7	6.9	9.1	18	14	9.9	7.4
19	7.8	7.8	5.5	4.5	3.7	3.7	7.2	11	19	14	9.7	7.5
20	7.8	7.4	5.2	4.5	3.7	3.7	8.0	11	18	14	9.7	7.8
21	7.8	7.5	5.2	4.5	3.7	3.7	8.2	12	17	14	9.3	7.9
22	7.8	7.5	5.0	4.5	3.7	3.8	9.9	15	16	13	9.3	7.8
23	8.2	7.5	e5.0	4.5	3.7	3.9	11	17	16	14	9.3	7.2
24	8.2	7.5	e5.0	4.5	3.9	3.8	11	17	15	13	9.3	7.2
25	8.2	7.7	e4.9	4.5	3.9	3.5	9.2	15	15	13	9.3	7.2
26	9.0	8.4	e4.8	4.5	3.7	3.5	8.3	19	15	13	9.3	7.2
27	8.9	8.0	e4.8	4.5	3.9	3.6	7.7	17	15	13	9.3	7.0
28	10	7.6	e4.7	4.5	4.1	4.6	8.1	20	14	13	9.3	6.9
29	9.2	7.5	e4.7	4.5	4.1	4.1	8.4	19	14	13	9.1	6.8
30	8.4	7.5	e4.6	4.4	---	3.9	7.8	17	14	12	8.6	7.0
31	8.2	---	e4.6	4.3	---	3.8	---	19	---	12	8.5	---
TOTAL	266.2	229.5	173.0	146.3	114.7	118.4	199.8	375.6	512	424	314.9	237.1
MEAN	8.59	7.65	5.58	4.72	3.96	3.82	6.66	12.1	17.1	13.7	10.2	7.90
MAX	10	8.4	7.5	5.0	4.8	4.6	11	20	21	16	12	10
MIN	7.8	7.2	4.6	4.3	3.7	3.5	3.7	7.5	14	12	8.5	6.8
AC-FT	528	455	343	290	228	235	396	745	1020	841	625	470
CFSM	1.25	1.11	.81	.69	.57	.56	.97	1.76	2.48	1.99	1.48	1.15
IN.	1.44	1.24	.94	.79	.62	.64	1.08	2.03	2.77	2.29	1.70	1.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2000, BY WATER YEAR (WY)

MEAN	8.13	6.98	5.92	5.22	4.60	4.63	6.38	15.8	25.1	18.4	12.9	9.82
MAX	10.3	8.95	7.38	6.33	6.49	7.07	8.93	28.0	48.4	29.2	16.9	12.0
(WY)	1983	1986	1985	1985	1986	1986	1986	1997	1997	1984	1983	1984
MIN	5.27	4.47	4.05	3.65	2.96	2.96	3.92	9.23	8.49	9.60	8.06	6.55
(WY)	1993	1993	1993	1989	1989	1989	1991	1995	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1983 - 2000	
ANNUAL TOTAL	4206.1		3111.5			
ANNUAL MEAN	11.5		8.50		10.3	
HIGHEST ANNUAL MEAN					14.6	1997
LOWEST ANNUAL MEAN					6.60	1992
HIGHEST DAILY MEAN	58	Jun 17	21	Jun 9	65	May 30 1986
LOWEST DAILY MEAN	4.4	Apr 18	3.5	Mar 25,26	1.7	Feb 4 1989
ANNUAL SEVEN-DAY MINIMUM	4.5	Apr 12	3.7	Mar 21	2.0	Feb 1 1989
INSTANTANEOUS PEAK FLOW			a22	May 31	b78	Jun 30 1916
INSTANTANEOUS PEAK STAGE			a5.58	May 31	b5.86	Jun 4 1999
INSTANTANEOUS LOW FLOW			3.2	Feb 20	c1.3	Feb 4 1989
INSTANTANEOUS LOW STAGE			5.13	Feb 20	b0.89	Feb 4 1989
ANNUAL RUNOFF (AC-FT)	8340		6170		7500	
ANNUAL RUNOFF (CFSM)	1.67		1.24		1.50	
ANNUAL RUNOFF (INCHES)	22.74		16.82		20.43	
10 PERCENT EXCEEDS	25		15		20	
50 PERCENT EXCEEDS	7.6		7.8		7.6	
90 PERCENT EXCEEDS	4.7		3.9		4.3	

a--Also occurred June 15.
b--Site and datum then in use.
c--Result of freezeup.
e--Estimated.

PEND OREILLE RIVER BASIN

12387450 VALLEY CREEK NEAR ARLEE, MT

LOCATION.--Lat 47°10'13", long 114°13'47", in NE$^1/_4$SE$^1/_4$SE$^1/_4$ sec.3, T.16 N., R.21 W., Sanders County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank, 1.4 mi upstream of East Fork, 6.7 mi west of Arlee, and 7.4 mi southwest of Ravalli.

DRAINAGE AREA.--15.3 mi^2.

PERIOD OF RECORD.--October 1982 to current season (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 3,450 ft above sea level, from topographic map.

REMARKS.--Seasonal records good. No known 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 2000
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				6.9	24	22	11	9.4	8.2	11		
2				7.5	28	21	11	9.4	11	9.1		
3				7.5	29	21	11	9.1	8.4	8.6		
4				8.1	33	21	11	9.1	8.1	8.2		
5				9.1	31	22	11	8.7	8.7	8.1		
6				8.7	28	22	13	8.7	8.7	7.9		
7				8.4	26	22	11	8.4	8.4	7.8		
8				8.1	23	22	11	8.1	8.4	7.8		
9				8.4	23	22	11	8.1	8.4	7.5		
10				9.1	22	21	11	8.1	9.1	7.2		
11				9.4	21	20	10	8.1	9.4	7.2		
12				11	20	18	10	8.1	8.7	7.2		
13				15	20	18	9.8	7.8	8.4	7.4		
14				20	19	17	10	7.8	8.1	7.8		
15				19	18	18	9.8	7.8	8.1	7.5		
16				19	18	17	9.8	7.8	7.8	7.2		
17				19	20	17	9.8	7.8	8.1	7.2		
18				19	22	16	9.4	7.8	8.1	7.2		
19				22	24	16	11	7.8	7.8	7.5		
20				23	24	15	10	7.8	7.5	7.2		
21				26	27	14	10	7.8	7.8	7.8		
22				32	32	14	10	7.8	7.5	7.5		
23				33	34	14	10	7.8	7.8	7.5		
24				29	32	13	10	7.5	7.8	7.2		
25				26	31	13	10	7.5	7.8	7.2		
26				23	29	13	10	7.5	7.8	7.2		
27				22	28	12	9.8	7.8	7.8	7.2		
28				23	28	12	9.8	7.5	7.5	7.2		
29				23	27	12	9.8	7.5	7.5	7.5		
30				22	24	12	9.4	7.8	8.1	7.2		
31				---	24	---	9.4	7.8	---	7.2		
TOTAL				517.2	789	517	319.8	250.0	246.8	237.3		
MEAN				17.2	25.5	17.2	10.3	8.06	8.23	7.65		
MAX				33	34	22	13	9.4	11	11		
MIN				6.9	18	12	9.4	7.5	7.5	7.2		
AC-FT				1030	1560	1030	634	496	490	471		
CFSM				1.13	1.66	1.13	.67	.53	.54	.50		
IN.				1.26	1.92	1.26	.78	.61	.60	.58		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1983 - 2000

MEAN	15.3	32.3	27.4	14.7	10.7	9.18	8.63
MAX	30.3	75.5	66.7	31.8	19.6	14.0	12.2
(WY)	1996	1997	1997	1997	1997	1997	1998
MIN	7.53	21.5	11.6	8.66	7.16	6.55	5.97
(WY)	1995	1988	1987	1988	1988	1988	1989

SUMMARY STATISTICS	FOR 2000 SEASON		SEASONS 1983 - 2000	
HIGHEST DAILY MEAN	34	May 23	110	May 17 1997
LOWEST DAILY MEAN	6.9	Apr 1	5.0	Nov 22 1994
INSTANTANEOUS PEAK FLOW	36	May 23	116	May 16 1997
INSTANTANEOUS PEAK STAGE	2.04	May 23	3.04	May 16 1997

PEND OREILLE RIVER BASIN

12388200 JOCKO RIVER AT DIXON, MT

LOCATION.--Lat 47°18'43", long 114°17'48", in $NW^1/_4NW^1/_4NE^1/_4$ sec. 20, T.18 N., R.21 W., Sanders County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank 38 ft downstream of State Highway 212 bridge, 0.8 mi east of Dixon, and at river mile 0.8.

DRAINAGE AREA.--380 mi^2.

PERIOD OF RECORD.--April 1990 to current year. Miscellaneous measurements made at this site 1977 and 1987 water years.

GAGE.--Water-stage recorder. Datum of gage is 2,521.87 ft above National Geodetic Vertical Datum of 1933, supplementary adjustment of 1957.

REMARKS.--Records good. Some regulation and diversion upstream from gage for irrigation. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	186	169	140	124	145	148	317	350	178	138	145
2	178	180	166	140	153	149	153	337	305	172	136	189
3	180	180	165	138	151	143	158	362	286	161	138	172
4	178	189	172	138	136	143	158	397	279	161	145	161
5	178	183	172	138	136	142	169	401	275	156	143	164
6	175	180	178	136	131	140	189	380	275	195	138	169
7	172	183	178	138	128	145	189	354	275	210	138	162
8	169	178	172	138	128	145	178	337	271	189	145	158
9	189	175	172	138	128	140	178	329	279	186	138	156
10	198	175	172	136	124	138	183	325	268	175	143	158
11	186	175	172	136	119	136	198	313	264	158	145	175
12	180	172	169	131	124	134	214	303	247	148	145	175
13	183	172	169	131	128	131	275	290	243	145	143	169
14	180	178	166	138	128	131	362	275	236	138	143	161
15	180	178	166	148	124	131	333	264	282	136	151	158
16	180	175	166	138	124	131	313	268	309	136	148	156
17	178	175	166	148	115	131	301	260	275	138	151	156
18	178	179	169	136	117	131	282	260	309	138	148	151
19	178	172	166	131	111	131	275	286	301	143	145	156
20	175	169	164	128	110	126	317	305	286	143	148	151
21	172	169	164	136	115	126	337	317	257	138	151	164
22	169	166	164	136	119	124	367	337	250	143	151	172
23	166	164	161	131	125	124	398	393	243	143	145	169
24	164	164	158	131	143	128	384	375	240	138	143	169
25	164	166	153	131	140	128	354	358	236	143	145	169
26	175	198	151	136	131	128	329	345	220	138	145	164
27	195	201	148	131	138	128	313	321	207	136	143	161
28	198	180	143	131	147	153	317	321	201	136	143	164
29	207	175	138	128	151	164	329	321	202	138	143	161
30	192	172	136	124	---	161	321	305	201	133	143	162
31	183	---	131	112	---	156	---	341	---	133	138	---
TOTAL	5580	5309	5036	4172	3748	4263	8022	10097	7872	4725	4459	4897
MEAN	180	177	162	135	129	138	267	326	262	152	144	163
MAX	207	201	178	148	153	164	398	401	350	210	151	189
MIN	164	164	131	112	110	124	148	260	201	133	136	145
AC-FT	11070	10530	9990	8280	7430	8460	15910	20030	15610	9370	8840	9710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2000, BY WATER YEAR (WY)

MEAN	186	179	163	135	135	154	223	442	525	267	170	180
MAX	227	227	265	188	208	246	390	1303	1537	512	222	225
(WY)	1998	1996	1996	1996	1996	1997	1997	1997	1997	1997	1997	1997
MIN	145	138	123	102	108	118	130	203	149	140	131	137
(WY)	1995	1995	1993	1995	1993	1994	1995	1992	1992	1994	1994	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1991 - 2000	
ANNUAL TOTAL	77928		68180			
ANNUAL MEAN	214		186		230	
HIGHEST ANNUAL MEAN					445	1997
LOWEST ANNUAL MEAN					157	1992
HIGHEST DAILY MEAN	792	May 27	401	May 5	2540	May 18 1997
LOWEST DAILY MEAN	106	Jan 26	110	Feb 20	74	Feb 2 1996
ANNUAL SEVEN-DAY MINIMUM	109	Jan 25	116	Feb 16	82	Jan 3 1995
INSTANTANEOUS PEAK FLOW			407	May 4	2710	May 17 1997
INSTANTANEOUS PEAK STAGE			2.07	May 4	4.68	May 17 1997
ANNUAL RUNOFF (AC-FT)	154600		135200		166700	
10 PERCENT EXCEEDS	437		310		371	
50 PERCENT EXCEEDS	175		164		172	
90 PERCENT EXCEEDS	117		131		122	

PEND OREILLE RIVER BASIN

12388400 REVAIS CREEK BELOW WEST FORK, NEAR DIXON, MT

LOCATION.--Lat 47°15'59", long 114°24'21", in $SE^1/_4NE^1/_4NW^1/_4$ sec.4, T.17 N., R.22 W., Sanders County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank, 0.3 mi downstream of West Fork, 7.3 mi southwest of Dixon, and at river mile 5.2.

DRAINAGE AREA.--23.4 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,420 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known regulation or diversion upstream of station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	5.2	5.6	e4.1	e3.8	4.6	6.4	42	47	15	7.3	e5.2
2	4.4	5.1	5.6	4.6	e4.0	4.6	6.9	55	42	14	7.3	e5.6
3	4.4	5.0	5.6	4.3	e4.4	4.6	7.0	58	40	14	7.2	e5.5
4	4.4	5.5	5.1	4.2	e4.2	4.8	7.8	62	40	14	7.3	e5.3
5	4.2	5.2	5.1	4.2	e4.2	5.1	12	57	43	14	e7.0	e5.3
6	4.2	5.1	5.1	4.2	4.2	5.1	11	51	46	14	e7.0	e5.5
7	4.2	5.1	5.1	4.2	4.2	5.1	10	45	45	14	e6.9	e5.5
8	4.3	5.1	4.9	4.3	4.2	5.1	9.2	40	44	13	e6.7	5.2
9	6.4	5.1	4.9	4.4	4.2	5.0	9.0	39	43	13	e6.6	5.2
10	4.5	5.1	4.9	4.4	4.2	4.9	9.8	38	39	13	e6.6	5.6
11	4.4	4.9	4.9	e4.4	e3.9	4.9	12	35	36	12	e6.5	6.3
12	4.6	4.9	4.9	e4.3	e4.0	4.7	14	32	33	12	e6.4	5.8
13	4.6	5.0	5.1	e4.2	e4.2	4.6	22	30	32	12	e6.2	5.6
14	4.6	5.1	4.9	e4.3	e4.2	4.6	38	28	29	11	e6.1	5.5
15	4.4	5.1	4.9	4.6	e4.2	4.6	33	27	29	11	e5.9	5.6
16	4.4	5.1	4.9	4.4	4.2	4.6	29	28	27	10	e5.9	5.6
17	4.4	5.1	4.9	4.4	e3.8	4.5	28	35	25	10	e5.7	5.6
18	4.4	5.1	5.2	4.4	e3.6	4.4	31	43	24	9.8	e5.7	5.4
19	4.4	5.1	4.9	e4.4	e3.4	4.6	40	53	23	9.8	e5.7	5.6
20	4.4	5.1	4.9	e4.2	e3.8	4.5	44	55	22	9.7	e5.7	5.8
21	4.4	5.1	4.9	e4.1	e4.0	4.4	50	60	21	9.3	e5.5	8.3
22	4.4	4.9	4.9	4.2	4.1	4.4	59	78	20	9.0	e5.5	6.5
23	4.4	4.9	4.9	4.2	4.2	4.9	58	81	19	8.7	e5.4	6.3
24	4.4	4.9	4.5	4.2	4.9	5.1	50	69	18	8.6	e5.4	6.4
25	4.4	5.4	4.4	4.2	4.6	5.1	42	61	17	8.3	e5.4	6.4
26	4.9	10	4.4	4.2	4.4	5.1	37	58	17	8.3	e5.4	6.3
27	5.5	7.3	e4.4	4.2	4.4	5.6	34	53	16	8.0	e5.5	6.2
28	9.3	6.2	e4.3	4.2	4.6	7.1	40	53	16	7.9	e5.4	6.4
29	6.5	5.7	e4.2	4.2	4.6	7.0	42	50	16	7.7	e5.2	6.4
30	5.4	5.6	e4.1	e3.9	---	6.4	39	48	15	7.7	e5.2	6.4
31	5.2	---	e4.0	e3.6	---	6.4	---	49	---	7.6	e5.2	---
TOTAL	148.8	162.0	150.4	131.7	120.7	156.4	831.1	1513	884	336.4	188.8	176.3
MEAN	4.80	5.40	4.85	4.25	4.16	5.05	27.7	48.8	29.5	10.9	6.09	5.88
MAX	9.3	10	5.6	4.6	4.9	7.1	59	81	47	15	7.3	8.3
MIN	4.2	4.9	4.0	3.6	3.4	4.4	6.4	27	15	7.6	5.2	5.2
AC-FT	295	321	298	261	239	310	1650	3000	1750	667	374	350
CFSM	.21	.23	.21	.18	.18	.22	1.18	2.09	1.26	.46	.26	.25
IN.	.24	.26	.24	.21	.19	.25	1.32	2.41	1.41	.53	.30	.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2000, BY WATER YEAR (WY)

MEAN	6.51	7.09	6.99	5.62	5.91	8.47	24.4	68.0	54.2	16.6	8.13	6.54
MAX	12.5	14.8	27.9	12.3	19.9	23.7	56.4	165	134	25.9	11.0	10.9
(WY)	1986	1986	1996	1996	1996	1986	1996	1997	1997	1991	1997	1985
MIN	4.21	4.31	4.13	3.62	3.49	4.12	10.9	44.9	18.6	10.2	5.47	4.19
(WY)	1989	1988	1993	1993	1993	1991	1993	1992	1987	1986	1988	1988

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1983 - 2000	
ANNUAL TOTAL	6566.6		4799.6			
ANNUAL MEAN	18.0		13.1		18.2	
HIGHEST ANNUAL MEAN					35.2	1997
LOWEST ANNUAL MEAN					11.6	1992
HIGHEST DAILY MEAN	170	May 25	81	May 23	316	Jun 1 1997
LOWEST DAILY MEAN	3.3	Feb 2	3.4	Feb 19	2.5	Feb 4 1989
ANNUAL SEVEN-DAY MINIMUM	3.4	Feb 17	3.8	Feb 16	2.7	Feb 2 1989
INSTANTANEOUS PEAK FLOW			86	May 23	a382	Jun 1 1997
INSTANTANEOUS PEAK STAGE			3.67	May 23	b6.93	Dec 5 1984
ANNUAL RUNOFF (AC-FT)	13020		9520		13220	
ANNUAL RUNOFF (CFSM)	.77		.56		.78	
ANNUAL RUNOFF (INCHES)	10.44		7.63		10.59	
10 PERCENT EXCEEDS	56		40		48	
50 PERCENT EXCEEDS	5.6		5.5		7.6	
90 PERCENT EXCEEDS	3.9		4.2		4.2	

a--Gage height, 4.36 ft.
b--Backwater from ice.
e--Estimated.

PEND OREILLE RIVER BASIN

12388700 FLATHEAD RIVER AT PERMA, MT

(National water-quality assessment program)

LOCATION.--Lat 47°22'03", long 114°35'03", in $SE^1/_4NE^1/_4NE^1/_4$ sec.36, T.19 N., R.24 W., Sanders County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank 0.3 mi north of Perma, 0.4 mi downstream from Camas Creek, and at river mile 10.9.

DRAINAGE AREA.--8,795 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,469.31 ft above sea level.

REMARKS.--Water-discharge records good. Flow affected by regulation from Hungry Horse Reservoir (station no. 12362000) and by Flathead Lake (station no. 12371500). Diversions for irrigation of about 160,500 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6690	9800	14900	14400	9050	8970	8570	19300	15500	15400	12400	6450
2	6620	9810	14900	14400	9160	8940	8540	20100	15300	15600	12800	6380
3	5750	10400	14900	14300	9110	9020	8540	20900	15100	15700	11900	5550
4	4900	10900	14800	14300	8200	8910	8710	21500	15000	17900	9670	4700
5	4740	10900	14800	14400	8010	8840	8440	22100	15000	18900	9680	4800
6	4750	10900	14800	14200	8010	8860	8180	22300	14100	17400	9070	5900
7	4750	10900	14800	14000	7940	9150	8230	22300	13800	16600	8750	6160
8	4760	10900	14700	13900	8010	9200	8450	22200	14000	15900	8690	6210
9	4820	12100	14700	13800	8060	8750	8650	18900	14000	15600	8570	6180
10	4760	12400	14700	13500	8010	8980	8770	17300	15100	15400	8510	6170
11	4760	12400	14700	12000	7980	8800	8820	16600	15600	15300	7590	6240
12	4770	12900	14700	12000	8500	8760	8910	16800	15500	15200	7630	6210
13	5080	13100	14800	12000	8580	8760	9770	16800	15400	14900	7670	6180
14	5090	13100	14700	12000	8600	8730	9740	16600	15700	14800	7650	6100
15	5040	13400	14700	12000	8980	8360	10000	16200	16000	14600	7350	6070
16	5030	13500	15000	12000	8970	8470	10500	15300	19300	14200	7070	5450
17	5050	13600	14700	11900	8810	8610	10700	14900	26300	14300	7060	4530
18	5040	14500	14800	11000	8110	8520	11600	15100	29600	14300	7090	4210
19	5360	14800	14600	10900	8080	8500	12200	15200	28600	13300	6890	4200
20	5810	15000	14700	10900	8270	8330	12500	15300	27600	11300	6430	4190
21	6210	14900	14600	10900	8390	8330	13400	15500	27300	11200	6450	4770
22	6300	14900	14500	10900	8450	8190	14400	15600	26900	11100	6090	5740
23	6320	14900	14500	10800	8540	8290	15200	15800	25400	11100	5930	6110
24	6320	14800	14500	10100	8750	8150	15900	15800	24900	11000	5960	6120
25	6300	14900	14500	10100	8760	8140	16400	15800	23000	11100	5920	6100
26	6630	15100	14400	10100	8770	8280	17100	15700	22200	11100	5940	6110
27	7840	14900	14400	9160	8900	8230	17200	15700	22000	10600	5900	6080
28	8790	14900	14400	9080	9170	8800	17600	15700	19900	9780	5970	6100
29	9810	14900	14400	9080	9110	8940	18200	15700	17100	9790	6280	6100
30	9850	14900	14400	9110	---	8240	18500	15700	15600	9710	7130	6100
31	9920	---	14400	9060	---	8310	---	15900	---	10000	6560	---
TOTAL	187860	394410	454400	366290	247280	267360	353720	538600	580800	423080	240600	171210
MEAN	6060	13150	14660	11820	8527	8625	11790	17370	19360	13650	7761	5707
MAX	9920	15100	15000	14400	9170	9200	18500	22300	29600	18900	12800	6450
MIN	4740	9800	14400	9060	7940	8140	8180	14900	13800	9710	5900	4190
AC-FT	372600	782300	901300	726500	490500	530300	701600	1068000	1152000	839200	477200	339600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2000, BY WATER YEAR (WY)

MEAN	9307	11210	11430	10960	10300	9798	10780	15870	22620	13210	8304	8479
MAX	12070	13150	17260	15200	18340	23420	23370	36930	45490	22780	12690	13090
(WY)	1992	2000	1996	1996	1996	1996	1996	1997	1997	1991	1996	1989
MIN	6060	9600	6832	6103	6691	5824	5850	5877	9092	6279	4164	4011
(WY)	2000	1988	1995	1988	1998	1992	1998	1995	1987	1994	1994	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1984 - 2000	
ANNUAL TOTAL	4293910		4225610			
ANNUAL MEAN	11760		11550		11850	
HIGHEST ANNUAL MEAN					18030	1996
LOWEST ANNUAL MEAN					8826	1988
HIGHEST DAILY MEAN	35300	Jun 28	29600	Jun 18	53400	Jun 6 1997
LOWEST DAILY MEAN	4740	Oct 5	4190	Sep 20	2670	May 29 1984
ANNUAL SEVEN-DAY MINIMUM	4760	Oct 5	4730	Sep 16	3110	May 25 1984
INSTANTANEOUS PEAK FLOW			30000	Jun 18	54700	Jun 7 1997
INSTANTANEOUS PEAK STAGE			15.71	Jun 18	21.65	Jun 7 1997
ANNUAL RUNOFF (AC-FT)	8517000		8381000		8586000	
10 PERCENT EXCEEDS	18400		16600		17900	
50 PERCENT EXCEEDS	9980		10800		10700	
90 PERCENT EXCEEDS	6480		6080		6050	

12388700 FLATHEAD RIVER AT PERMA, MT--Continued

(National water-quality assessment program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971-73, 1984-92, 1997 to current year.
REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)
OCT 1999												
19...	1140	5470	707	10.6	86	7.8	--	3.4	8.5	90	25	25
DEC												
01...	1100	14900	697	11.0	97	8.2	164	7.5	6.0	89	25	--
JAN 2000												
25...	1030	10100	698	12.5	98	8.0	173	-2.0	1.5	91	26	--
MAR												
07...	1100	9210	695	10.7	94	8.1	177	6.0	5.5	89	25	--
APR												
11...	1000	8840	701	9.9	90	8.2	176	13.5	8.0	89	25	--
MAY												
10...	1015	17500	690	9.9	96	8.3	173	11.5	10.0	86	24	24
JUN												
19...	1230	28500	694	9.1	99	8.3	169	16.0	14.5	84	24	24
AUG												
01...	1000	12600	697	7.5	95	8.4	163	32.0	23.0	87	25	--
30...	1030	7310	695	7.4	88	8.4	168	22.5	19.0	93	26	24

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	POTAS-SIUM, TOTAL RECOV-ERABLE (MG/L AS K) (00937)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM, TOTAL RECOV-ERABLE (MG/L AS NA) (00929)	SODIUM AD-SORP-TION RATIO (00931)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT 1999												
19...	6.6	6.6	.5	.5	1.8	1.8	.1	89	109	0	.5	<.1
DEC												
01...	6.3	--	.4	--	1.4	--	.1	87	106	0	1.6	<.1
JAN 2000												
25...	6.5	--	.4	--	1.4	--	.1	86	105	0	<.3	<.1
MAR												
07...	6.5	--	.5	--	1.8	--	.1	89	109	0	<.3	<.1
APR												
11...	6.3	--	.5	--	1.5	--	.1	91	111	0	.3	<.1
MAY												
10...	6.1	6.1	.4	.5	1.3	1.2	.1	87	106	0	.3	<.1
JUN												
19...	6.0	6.2	.4	.4	1.2	1.1	.1	87	105	0	.5	<.1
AUG												
01...	6.3	--	.4	--	1.2	--	.1	86	104	1	.4	<.1
30...	6.6	6.1	.4	.4	1.4	1.3	.1	86	105	0	.4	<.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)
OCT 1999											
19...	5.0	3.0	.19	.14	<.002	<.005	.002	E.004	<.008	.001	1.6
DEC											
01...	4.8	3.0	E.10	E.10	<.002	.027	<.001	<.006	<.008	<.001	1.5
JAN 2000											
25...	4.9	3.2	E.10	E.10	<.002	.050	<.001	<.006	<.008	<.001	1.3
MAR											
07...	4.6	2.8	E.10	.12	<.002	.029	<.001	<.006	E.004	<.001	--
APR											
11...	4.7	2.7	<.10	.12	<.002	.024	<.001	<.006	<.008	<.001	--
MAY											
10...	4.5	2.7	E.10	.15	<.002	.022	<.001	<.006	<.008	<.001	--
JUN											
19...	4.4	2.4	E.10	.13	.006	.019	.001	<.006	E.004	<.001	--
AUG											
01...	4.7	2.5	E.10	.21	.002	.006	<.001	<.006	<.008	.002	--
30...	5.0	2.5	E.10	.11	.005	.011	<.001	<.006	<.008	<.001	--

E--Estimated.

PEND OREILLE RIVER BASIN

12388700 FLATHEAD RIVER AT PERMA, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1999											
19...	<.2	96	.14	1510	<10	E20	<1	3	1	15	73
DEC											
01...	<.2	95	.13	3820	<10	--	<2	--	2	80	87
JAN 2000											
25...	.2	--	--	--	<10	--	E2	--	--	--	--
MAR											
07...	--	--	--	--	<10	--	E1	--	3	75	81
APR											
11...	--	96	.13	2360	E10	--	E1	--	3	72	81
MAY											
10...	--	92	.14	4770	<10	40	<1	4	4	189	86
JUN											
19...	--	91	.14	8080	<10	80	<1	5	7	539	85
AUG											
01...	--	92	.13	3200	E10	--	<2	--	2	68	79
30...	--	94	.13	1910	<10	E20	<1	5	1	20	58

DATE	TIME	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)
OCT 1999										
19...	1140	1	<28	<1	<1	<2	<3	93	87	<1
MAY 2000										
10...	1015	10	E23	<1	<1	<.9	<3	92	86	<1
JUN										
19...	1230	4	75	<1	<1	<.9	<3	86	83	<1
AUG										
30...	1030	2	E18	<1	<1	E.5	<3	83	83	<1

DATE	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1999										
19...	<5	--	<1	<.1	<.8	<1	<1	<2	<1	<20
MAY 2000										
10...	<5	<12	<1	<.1	<.8	<1	<1	<2	<1	<20
JUN										
19...	<5	<12	<1	<.1	E.6	<1	<1	<2	<1	<20
AUG										
30...	<5	17	<1	<.1	<.8	<1	<1	<2	<1	<20

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT 1999										
19...	<1	<1	--	<7	<.3	<1	<1	<1	<2	<2.0
MAY 2000										
10...	<1	<1	1.0	<7	<.3	<1	<1	<1	<2	<.7
JUN										
19...	<1	<1	.8	<7	<.3	<1	<1	<1	<2	<.7
AUG										
30...	<1	<1	1.0	<7	<.3	<1	1	<1	<2	<.7

E--Estimated.

12388700 FLATHEAD RIVER AT PERMA, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DATE	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR) (01082)	THAL-LIUM, DIS-SOLVED (UG/L AS TL) (01057)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT 1999 19...	<3	<1	<1	--	44	--	<1	--	<1	<31
MAY 2000 10...	<3	<1	<1	45	42	<.9	<1	<1	3	<31
JUN 19...	<3	<1	<1	44	40	<.9	<1	<1	<1	E17
AUG 30...	<3	<1	<1	40	41	<.9	<1	<1	<1	<31

DATE	TIME	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
OCT 1999 19...	1140	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003

DATE	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
OCT 1999 19...	<.004	<.004	<.002	<.002	109	<.002	<.001	<.017	<.002	<.004

DATE	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)
OCT 1999 19...	<.003	<.003	98	<.004	<.002	<.005	<.001	<.006	<.002	<.004

DATE	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT 1999 19...	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018	<.003

DATE	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT 1999 19...	<.007	<.004	<.013	<.005	<.01	<.007	<.013	<.002	<.001	<.002

PEND OREILLE RIVER BASIN

12389000 CLARK FORK NEAR PLAINS, MT

LOCATION.--Lat 47°25'47", long 114°51'18", in E1/2SW$^1/_4$ sec.1, T.19 N., R.26 W., Sanders County, Hydrologic Unit 17010213, on right bank 2.4 mi southeast of Plains, 6.0 mi downstream from Flathead River, and at river mile 239.0.

DRAINAGE AREA.--19,958 mi^2.

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1246: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,449.11 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Nov. 28, 1911, nonrecording gage at site 50 ft upstream at same datum.

REMARKS.--Records good. Flow partly regulated by Hungry Horse Reservoir (station number 12362000) and by Flathead Lake (station number 12371500). Diversions for irrigation of about 335,000 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8880	12800	18600	16800	10800	11900	12500	31700	30700	20700	13400	7660
2	8880	12600	18500	17000	11000	11900	12600	32700	29600	20600	14100	7750
3	8320	12800	18400	17300	11600	11900	12700	35000	28200	20600	13600	7100
4	7510	13300	18300	17300	11300	11900	12900	37400	27700	22500	11000	6410
5	7200	13600	18200	17200	10900	11900	13200	38500	28000	23400	10900	6280
6	7110	13800	18100	17200	10700	12000	13400	38600	27500	22200	10500	7230
7	7070	13800	17900	17000	10600	12400	14100	37400	27400	21000	10000	7600
8	7100	13800	18000	16600	10600	12600	14400	36300	27800	20400	9900	7640
9	7270	14700	18100	16400	10600	12300	14400	32400	28000	19700	9790	7650
10	7270	15400	18000	16400	10600	12300	14400	30400	28800	19400	9820	7690
11	7260	15400	17900	15100	10600	12100	14900	28900	28300	19200	8840	7770
12	7230	15500	17900	14800	11100	12000	15800	28600	27100	18900	8800	7820
13	7490	15800	17900	14700	11200	12000	17800	27900	26700	18400	8830	7830
14	7550	16000	17900	14500	11200	11800	21400	27000	27300	18000	8850	7810
15	7530	16200	17900	14300	11600	11500	24300	26200	28200	17700	8640	7750
16	7520	16400	17900	14400	11600	11500	24200	25000	31100	17300	8310	7290
17	7520	16500	17900	14600	11600	11600	23300	24900	39500	17100	8270	6420
18	7520	17100	18100	13800	10700	11500	23600	26200	42100	17000	8270	5930
19	7710	17800	18200	13700	10500	11400	24700	27900	40300	16000	8180	5900
20	8070	17900	18100	13600	10600	11200	26400	29300	38200	13800	7670	5910
21	8490	17900	18100	13500	10600	11300	28700	30100	37400	13400	7680	6240
22	8630	17900	18000	13500	10700	11100	30800	31000	36400	13200	7440	7150
23	8650	17900	17900	13500	11000	11100	32500	32900	34300	13000	7220	7680
24	8650	17900	17800	12700	11300	11200	32900	34000	33300	12900	7190	7730
25	8630	17900	17800	12500	11400	11200	32000	33200	31100	12900	7190	7740
26	8770	18300	17700	12500	11500	11400	31100	32000	29600	12800	7170	7720
27	9860	19300	17500	11800	11600	11500	30100	31700	28900	12400	7170	7720
28	11000	19400	17200	11500	11800	12000	29500	31600	26500	11400	7210	7680
29	12300	19300	17100	11500	11900	12700	30200	31900	23400	11300	7390	7670
30	12700	19000	16900	11500	---	12500	31200	32600	21400	11200	8080	7680
31	12700	---	16700	11200	---	12400	---	32100	---	11300	7890	---
TOTAL	262390	486000	554500	448400	321200	366100	660000	975400	914800	519700	279300	218450
MEAN	8464	16200	17890	14460	11080	11810	22000	31460	30490	16760	9010	7282
MAX	12700	19400	18600	17300	11900	12700	32900	38600	42100	23400	14100	7830
MIN	7070	12600	16700	11200	10500	11100	12500	24900	21400	11200	7170	5900
AC-FT	520500	964000	1100000	889400	637100	726200	1309000	1935000	1815000	1031000	554000	433300
CFSM	.42	.81	.90	.72	.55	.59	1.10	1.58	1.53	.84	.45	.36
IN.	.49	.91	1.03	.84	.60	.68	1.23	1.82	1.71	.97	.52	.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 2000, BY WATER YEAR (WY)

MEAN	10650	11540	12060	12070	11920	11980	19510	44880	55140	25990	11070	9710
MAX	23550	21170	27630	22320	30070	31390	47830	89760	101600	76930	24840	16920
(WY)	1960	1928	1996	1934	1996	1996	1934	1928	1948	1916	1916	1985
MIN	4760	4588	4075	3344	3940	4636	6112	13010	13560	7843	5656	4768
(WY)	1932	1937	1937	1937	1937	1937	1937	1941	1977	1940	1988	1931

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1911 - 2000	
ANNUAL TOTAL	7066080		6006240			
ANNUAL MEAN	19360		16410		19720	
HIGHEST ANNUAL MEAN					29420	1996
LOWEST ANNUAL MEAN					8845	1941
HIGHEST DAILY MEAN	62300	Jun 20	42100	Jun 18	133000	May 31 1948
LOWEST DAILY MEAN	7070	Oct 7	5900	Sep 19	a3200	Feb 8 1936
ANNUAL SEVEN-DAY MINIMUM	7180	Oct 5	6410	Sep 16	3250	Jan 11 1937
INSTANTANEOUS PEAK FLOW			42600	Jun 18	134000	Jun 5 1948
INSTANTANEOUS PEAK STAGE			10.08	Jun 18	19.17	Jun 5 1948
INSTANTANEOUS LOW FLOW			5850	Sep 18	b3200	Dec 10 1940
INSTANTANEOUS LOW STAGE			3.53	Sep 18	c2.70	Sep 2 1948
ANNUAL RUNOFF (AC-FT)	14020000		11910000		14290000	
ANNUAL RUNOFF (CFSM)	.97		.82		.99	
ANNUAL RUNOFF (INCHES)	13.17		11.20		13.43	
10 PERCENT EXCEEDS	44600		30500		44900	
50 PERCENT EXCEEDS	15600		13600		13300	
90 PERCENT EXCEEDS	9210		7650		6560	

a--Estimated during period of ice-affected gage height record.
b--Gage height, 2.85 ft.
c--From partially estimated gage-height record.

PEND OREILLE RIVER BASIN

12389500 THOMPSON RIVER NEAR THOMPSON FALLS, MT

LOCATION.--Lat 47°35'31", long 115°13'43", in NW$^1/_4$NE$^1/_4$SE$^1/_4$ sec.7, T.21 N., R.28 W., Sanders County, Hydrologic Unit 17010213, Lolo National Forest, on right bank 1.2 mi upstream from mouth and 5.5 mi east of Thompson Falls.

DRAINAGE AREA.--642 mi^2.

PERIOD OF RECORD.--March to September 1911, October 1911 to September 1916 (occasional gage heights, discharges, and discharge measurements), April 1956 to current year. Records for January and February 1911, published in WSP 916, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1246: 1911. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 2,429.97 ft above sea level (Bureau of Public Roads bench mark). October 1911 to September 1916, nonrecording gage at site 0.2 mi upstream at different datum.

REMARKS.--Records good. Minor diversions upstream from station for irrigation, acreage unknown. Diversion from headwaters of Alder Creek in SW$^1/_4$ sec.16, T.23 N., R.25 W., to supplement water supply for storage in Upper Dry Fork Reservoir in Little Bitterroot River basin. 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 in May to June 1948 reached a discharge of 6,190 ft^3/s, by slope-area measurement of peak flow at site 0.2 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	168	169	247	195	173	219	405	1120	1080	466	240	179
2	167	163	241	194	229	223	440	1260	971	452	238	192
3	167	160	232	186	228	229	470	1350	945	456	234	190
4	165	191	217	188	205	243	522	1400	950	457	230	180
5	164	185	208	186	220	259	660	1340	971	435	226	175
6	161	192	214	179	212	289	708	1230	990	428	223	181
7	160	191	214	180	203	306	645	1120	978	434	220	176
8	173	181	201	181	198	302	586	1040	960	404	217	172
9	213	176	199	182	199	295	568	1000	939	386	215	179
10	190	169	199	169	190	289	619	1010	893	376	214	189
11	177	166	197	176	179	290	733	963	843	362	213	190
12	172	164	206	177	207	283	871	914	812	349	211	179
13	169	254	226	170	204	275	1050	868	812	338	207	171
14	167	284	218	183	197	284	1530	837	798	329	204	168
15	162	254	215	184	196	283	1400	823	844	322	201	166
16	161	232	229	182	188	281	1290	838	823	319	197	162
17	160	222	247	179	166	277	1240	906	782	313	195	160
18	158	215	288	153	e165	270	1280	1000	745	304	193	158
19	158	209	287	144	162	279	1410	1070	732	300	192	158
20	155	208	264	132	159	269	1540	1100	699	293	192	159
21	155	201	248	147	190	263	1620	1120	662	289	191	164
22	153	196	233	164	185	263	1750	1180	638	283	190	163
23	152	190	226	151	191	288	1740	1250	616	277	186	161
24	151	187	218	140	203	308	1550	1230	596	271	183	161
25	150	225	212	157	204	310	1350	1160	580	268	182	159
26	157	367	206	156	203	313	1200	1100	553	265	178	158
27	162	384	200	164	203	324	1100	1060	531	261	177	155
28	187	297	195	168	210	393	1120	1100	509	257	176	155
29	192	263	190	164	214	427	1160	1040	495	252	174	152
30	174	251	183	153	---	411	1120	968	480	247	173	175
31	171	---	184	133	---	399	---	1080	---	243	172	---
TOTAL	5171	6546	6844	5217	5683	9144	31677	33477	23227	10436	6244	5087
MEAN	167	218	221	168	196	295	1056	1080	774	337	201	170
MAX	213	384	288	195	229	427	1750	1400	1080	466	240	192
MIN	150	160	183	132	159	219	405	823	480	243	172	152
AC-FT	10260	12980	13580	10350	11270	18140	62830	66400	46070	20700	12380	10090
CFSM	.26	.34	.34	.26	.31	.46	1.64	1.68	1.21	.52	.31	.26
IN.	.30	.38	.40	.30	.33	.53	1.84	1.94	1.35	.60	.36	.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2000, BY WATER YEAR (WY)

MEAN	185	203	213	211	259	362	774	1321	1029	411	241	196
MAX	343	501	880	719	1226	1344	1674	3154	2369	724	382	288
(WY)	1960	1996	1996	1974	1996	1972	1996	1997	1974	1974	1997	1997
MIN	112	115	101	112	103	120	238	374	244	140	113	105
(WY)	1995	1988	1993	1988	1994	1964	1977	1977	1977	1977	1977	1994

12389500 THOMPSON RIVER NEAR THOMPSON FALLS, MT--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1957 - 2000	
ANNUAL TOTAL	162311		148753			
ANNUAL MEAN	445		406		451	
HIGHEST ANNUAL MEAN					804	1997
LOWEST ANNUAL MEAN					176	1977
HIGHEST DAILY MEAN	2330	May 26	1750	Apr 22	5360	Jun 9 1964
LOWEST DAILY MEAN	150	Oct 25	132	Jan 20	67	Nov 24 1993
ANNUAL SEVEN-DAY MINIMUM	153	Oct 20	147	Jan 18	73	Dec 31 1994
INSTANTANEOUS PEAK FLOW			1810	Apr 22	6080	Jun 9 1964
INSTANTANEOUS PEAK STAGE			5.09	Apr 22	8.53	Jun 9 1964
INSTANTANEOUS LOW FLOW			a117	Jan 19	b48	Dec 4 1992
INSTANTANEOUS LOW STAGE			a2.41	Jan 19	c1.01	Dec 17 1964
ANNUAL RUNOFF (AC-FT)	321900		295100		326600	
ANNUAL RUNOFF (CFSM)	.69		.63		.70	
ANNUAL RUNOFF (INCHES)	9.40		8.62		9.54	
10 PERCENT EXCEEDS	1020		1050		1090	
50 PERCENT EXCEEDS	254		221		242	
90 PERCENT EXCEEDS	173		162		138	

a--Also occurred on Jan. 31.
b--Gage height 2.02 ft, result of freezeup.
c--Result of freezeup.
e--Estimated.

PEND OREILLE RIVER BASIN

12390700 PROSPECT CREEK AT THOMPSON FALLS, MT

LOCATION.--Lat 47°35'10", long 115°21'15", in lot 12, $SE^1/_4SE^1/_4SE^1/_4$ sec.7, T.21 N., R.29 W., Sanders County, Hydrologic Unit 17010213, on right bank 500 ft downstream from Dry Creek, 0.5 mi upstream from mouth, and 0.7 mi south of Thompson Falls.

DRAINAGE AREA.--182 mi^2.

PERIOD OF RECORD.--April 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,382.40 ft above sea level.

REMARKS.--Records good. No known regulation or 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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	48	162	119	76	116	266	599	582	195	85	60
2	59	47	156	117	96	119	282	716	539	186	83	60
3	58	47	149	112	94	122	317	788	521	183	82	59
4	58	52	142	110	93	130	365	856	529	178	80	58
5	57	49	137	107	92	139	498	821	551	171	79	58
6	57	52	133	104	92	151	548	728	565	169	78	58
7	56	49	130	101	91	163	462	646	549	162	77	57
8	61	48	123	102	92	178	401	601	536	155	76	57
9	62	48	119	101	94	190	378	590	517	150	75	57
10	56	48	115	97	97	192	406	603	481	143	74	58
11	55	48	113	96	99	193	508	578	443	138	73	57
12	55	48	119	94	101	188	625	553	425	133	72	55
13	55	59	131	93	102	184	791	508	452	129	71	54
14	54	53	127	96	103	188	1400	483	435	125	70	54
15	54	51	125	95	104	185	1240	480	436	122	69	54
16	53	50	134	92	102	183	975	495	416	119	68	53
17	53	50	154	91	102	180	851	580	388	116	68	52
18	52	49	222	90	101	175	838	696	371	114	67	52
19	52	50	255	89	101	180	910	742	356	111	66	52
20	52	52	234	87	100	173	966	742	334	109	66	52
21	51	70	213	88	102	169	1010	778	314	106	65	52
22	50	83	196	87	102	167	1050	851	299	104	64	51
23	49	83	180	86	104	177	1070	892	287	101	63	51
24	49	83	169	85	108	189	891	847	276	100	63	50
25	49	103	159	84	108	208	752	769	265	98	62	50
26	51	228	151	80	109	215	646	724	248	95	61	49
27	49	313	144	77	110	222	575	684	235	93	61	49
28	55	238	138	75	112	256	602	702	223	91	60	48
29	52	192	132	74	115	285	626	654	213	90	60	48
30	49	173	126	75	---	279	595	609	204	88	60	51
31	49	---	122	73	---	265	---	660	---	87	59	---
TOTAL	1671	2564	4710	2877	2902	5761	20844	20975	11990	3961	2157	1616
MEAN	53.9	85.5	152	92.8	100	186	695	677	400	128	69.6	53.9
MAX	62	313	255	119	115	285	1400	892	582	195	85	60
MIN	49	47	113	73	76	116	266	480	204	87	59	48
AC-FT	3310	5090	9340	5710	5760	11430	41340	41600	23780	7860	4280	3210
CFSM	.30	.47	.83	.51	.55	1.02	3.82	3.72	2.20	.70	.38	.30
IN.	.34	.52	.96	.59	.59	1.18	4.26	4.29	2.45	.81	.44	.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2000, BY WATER YEAR (WY)

MEAN	55.6	83.7	119	121	165	226	485	800	541	163	84.5	62.4
MAX	168	469	701	735	875	828	877	1425	1468	317	109	79.9
(WY)	1960	1996	1996	1974	1996	1972	1969	1997	1974	1997	1982	1959
MIN	30.7	29.9	29.9	30.4	33.1	43.6	148	297	142	73.7	48.5	36.5
(WY)	1995	1988	1988	1988	1993	1977	1977	1977	1987	1977	1977	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1957 - 2000	
ANNUAL TOTAL	97200		82028			
ANNUAL MEAN	266		224		242	
HIGHEST ANNUAL MEAN					441	1974
LOWEST ANNUAL MEAN					86.0	1977
HIGHEST DAILY MEAN	1720	May 26	1400	Apr 14	4960	Jan 16 1974
LOWEST DAILY MEAN	47	Nov 2	47	Nov 2	27	Dec 26 1987
ANNUAL SEVEN-DAY MINIMUM	49	Oct 30	49	Oct 30	28	Dec 22 1987
INSTANTANEOUS PEAK FLOW			1590	Apr 14	5490	Jan 16 1974
INSTANTANEOUS PEAK STAGE			5.36	Apr 14	9.86	Jan 16 1974
INSTANTANEOUS LOW FLOW			a46	Nov 2	24	Jan 4 1988
INSTANTANEOUS LOW STAGE			a0.68	Nov 2	-.18	Jan 4 1988
ANNUAL RUNOFF (AC-FT)	192800		162700		175500	
ANNUAL RUNOFF (CFSM)	1.46		1.23		1.33	
ANNUAL RUNOFF (INCHES)	19.87		16.77		18.08	
10 PERCENT EXCEEDS	675		605		662	
50 PERCENT EXCEEDS	133		110		104	
90 PERCENT EXCEEDS	55		52		45	

a--Also occurred Nov. 3, 10.

PEND OREILLE RIVER BASIN

12391400 CLARK FORK BELOW NOXON RAPIDS DAM, NEAR NOXON, MT

LOCATION.--Lat 47°57'40", long 115°43'58", in SW$^1/_4$ sec.33, T.26 N., R. 32 W., Sanders County, Hydrologic Unit 17010213, at Noxon Rapids Dam, 1 mi upstream from Rock Creek, 3 mi southeast of Noxon, and at river mile 169.7.

DRAINAGE AREA.--21,833 mi^2.

PERIOD OF RECORD.--May 1960 to current year.

GAGE.--Plant generator rating or discharge thorugh powerplant. Water-stage recorder on reservoir determines head on taintor gates. Datum of gage is at sea level (levels by The Washington Water Power Co.).

REMARKS.--Records good. Flow regulated by Hungry Horse Reservoir (station 12362000) and Flathead Lake (station 12371500). Diversions for irrigation of about 350,000 acres upstream from station. Some sub-surface flow indicated by comparison with records for adjacent gaging stations. Figures of discharge given herein are combined flows through turbines and spillway. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--Records collected by the Avista Corporation., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9360	15600	22100	13100	13000	15000	15200	36200	38300	19600	11800	7970
2	9360	12700	21100	12700	11600	14000	12600	37000	33900	17600	14800	7880
3	8980	10200	22400	17700	17200	12900	16300	39300	28400	18100	15900	7320
4	7750	18100	16300	21200	13100	11100	13600	39200	27000	22000	15400	6260
5	7380	13800	12000	22000	5900	12800	18800	42800	31200	27700	6790	7750
6	8090	7430	19000	18700	9630	14800	19400	43300	30900	26600	13000	7240
7	6780	14300	20300	17200	11400	13800	17600	47200	30500	24600	10600	8670
8	8020	16200	19900	13300	15000	16400	12400	39500	30800	22300	10600	8200
9	8200	21600	19300	13000	11400	15100	14300	36600	31700	16400	14500	6910
10	6650	14300	22900	21100	14000	14900	18800	37900	31800	23300	10200	8390
11	7470	16000	17100	16900	14500	7940	21400	34200	30800	22500	7470	9120
12	7550	18900	13900	18400	4800	11500	19300	32300	30800	21900	6410	8880
13	8960	11200	21900	16600	11800	13600	22700	23200	30700	21200	8770	8730
14	8550	12800	19900	17000	15100	15500	29400	26700	28000	20200	9300	8510
15	8470	17500	21400	11900	12800	13800	28900	29200	30900	11000	11100	8790
16	6130	16900	21000	9430	12500	17700	30400	32800	37500	18100	10800	6940
17	7260	20900	17700	17200	12500	17100	30600	29000	42700	19500	9310	4930
18	8350	21600	12800	16100	14500	4130	30800	30400	41400	20200	10200	6240
19	7790	14400	17200	15700	7590	12600	30300	29500	40600	17700	5620	7050
20	7740	14000	21900	13700	7750	13600	29300	31500	37900	17100	6580	6050
21	9670	18200	22700	13200	12000	13900	31100	31200	38700	17500	8750	6810
22	12300	19800	21800	8990	11300	16900	37200	35000	38200	4850	10100	8140
23	8120	20300	22000	12100	15900	12800	39600	40500	37300	13900	7640	5610
24	6420	20100	15400	17100	15100	13900	38700	40300	33700	15300	11000	9070
25	11400	17600	16500	13800	14600	6080	41800	41100	34000	15600	7730	9170
26	9530	19100	16200	14200	4670	9180	36000	39400	32600	14600	4010	9120
27	16400	18800	18900	14500	10800	14400	37600	30300	31500	14300	6440	8500
28	15000	17900	23500	14500	13700	14700	34700	33200	29300	12800	6090	9650
29	10900	21400	20400	5560	12400	13300	30800	33800	32000	9430	7740	8050
30	10100	21500	19200	7610	---	13900	31300	37100	23400	12700	7910	5850
31	10800	---	14500	13400	---	15200	---	39600	---	13200	7800	---
TOTAL	279480	503130	591200	457890	346540	412530	790900	1099300	996500	551780	294360	231800
MEAN	9015	16770	19070	14770	11950	13310	26360	35460	33220	17800	9495	7727
MAX	16400	21600	23500	22000	17200	17700	41800	47200	42700	27700	15900	9650
MIN	6130	7430	12000	5560	4670	4130	12400	23200	23400	4850	4010	4930
AC-FT	554300	998000	1173000	908200	687400	818300	1569000	2180000	1977000	1094000	583900	459800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000, BY WATER YEAR (WY)

MEAN	11940	13350	14360	14600	15420	16700	23000	41070	50870	23380	10660	10380
MAX	16160	19890	31480	22230	34640	33700	46450	88150	92590	40730	17720	16410
(WY)	1976	1996	1996	1974	1996	1996	1996	1997	1974	1982	1997	1985
MIN	6172	7107	9224	7625	8931	9342	4873	14460	13400	8330	5350	4838
(WY)	1961	1964	1995	1988	1993	1980	1977	1973	1977	1977	1988	1973

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000	
ANNUAL TOTAL	7563230		6555410			
ANNUAL MEAN	20720		17910		20480	
HIGHEST ANNUAL MEAN					31870	1996
LOWEST ANNUAL MEAN					11170	1977
HIGHEST DAILY MEAN	68700	Jun 21	47200	May 7	125000	Jun 12 1964
LOWEST DAILY MEAN	3550	Jan 9	4010	Aug 26	60	Jan 29 1989
ANNUAL SEVEN-DAY MINIMUM	7510	Oct 5	6400	Sep 17	2250	Aug 30 1963
ANNUAL RUNOFF (AC-FT)	15000000		13000000		14840000	
10 PERCENT EXCEEDS	46800		33800		41700	
50 PERCENT EXCEEDS	16300		15100		15300	
90 PERCENT EXCEEDS	8160		7580		7640	

COLUMBIA RIVER BASIN
PEND OREILLE RIVER BASIN

SMALLER RESERVOIRS IN PEND OREILLE RIVER BASIN IN MONTANA

CAMAS RESERVOIRS.--A group of four reservoirs in the Little Bitterroot River basin operated for irrigation and recreation. Nonrecording gages are set to approximate sea level and are read on the last day of the month. Figures given herein represent usable contents. Records furnished by Bureau of Indian Affairs. May to July 1948 scattered daily contents for individual reservoirs, published in WSP 1080.

12372500 LITTLE BITTERROOT LAKE.--Lat 48°05'34", long 114°41'51", in $SE^1/_4SE^1/_4SW^1/_4$ sec.16, T.27 N., R.24 W., Flathead County, Hydrologic Unit 17010212, at dam on Little Bitterroot River, 2 mi southwest of Marion and at river mile 70.3. DRAINAGE AREA, 31.8 mi^2. PERIOD OF RECORD, December 1939, April 1940, September 1940 to current year.

Reservoir is formed by earthfill dam; storage began in 1918. Usable capacity, 26,400 acre-ft between elevation 3,897.98 ft and 3,906.48 ft. No dead storage. Prior to 1960, usable capacity, 24,000 acre-ft.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 27,570 acre-ft, Apr. 30, 1997, elevation, 3,906.74 ft; no storage at times in 1939-46.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 21,420 acre-ft, Feb. 29, elevation, 3,905.19 ft; minimum observed, 15,100 acre-ft, Sept. 30, elevation, 3,903.43 ft.

12373500 HUBBART RESERVOIR.--Lat 47°55'43", long 114°43'53", in $SE^1/_4NE^1/_4$ sec.18, T.25 N., R.24 W., Flathead County, Hydrologic Unit 17010212, at dam on Little Bitterroot River, 9 mi northwest of Niarada and at river mile 55.8. DRAINAGE AREA: 114 mi^2. PERIOD OF RECORD, December 1939, April 1940, September 1940 to current year.

Reservoir is formed by concrete variable-radium dam; storage began in 1924. Usable capacity, 12,120 acre-ft between elevation 3,140.0 ft and 3,210.0 ft. No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 13,050 acre-ft, May 31, 1959, elevation, 3,220.92 ft; no storage September to December 1959, Sept. 30, Oct. 1, 1973, October through November 1987.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 10,020 acre-ft, May 31, elevation, 3,214.04 ft; minimum observed, 1,440 acre-ft, Sept. 30, elevation, 3,181.40 ft.

12375000 UPPER DRY FORK RESERVOIR.--Lat 47°44'55", long 114°40'53", in $SE^1/_4SE^1/_4SW^1/_4$ sec. 16, T.23 N., R.24 W., Sanders County, Hydrologic Unit 17010212, at dam on Dry Fork Creek, 4 mi northwest of Lonepine. DRAINAGE AREA, 8.53 mi^2. PERIOD OF RECORD. April 1940, September 1940 to current year.

Reservoir is formed by earthfill dam; storage began in 1940. Usable capacity, 2,810 acre-ft between elevation 2,900.0 ft and 2,928.5 ft. No dead storage. Prior to 1960, usable capacity, 2,700 acre-ft. Natural flow of Alder Creek in Thompson River basin is diverted in $SW^1/_4$ sec 16, T.23 N., R.25 W., and carried by inter-basin canal to upper Dry Fork Creek for storage in this reservoir.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 3,140 acre-ft, May 31, 1980, elevation, 2,929.5 ft; no storage at times in 1940, 1942, 1943.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 3,100 acre-ft, June 30, elevation, 2,929.40 ft; minimum, 1,320 acre-ft, Oct. 31, elevation, 2,922.30 ft.

12375500 DRY FORK RESERVOIR.--Lat 47°42'00", long 114°40'02", in $SW^1/_4NW^1/_4NW^1/_4$ sec.3, T.22 N., R.24 W., Sanders County, Hydrologic Unit 17010212, at dam on Dry Fork Creek, 1 mi west of Lonepine. DRAINAGE AREA, 17.8 mi^2. PERIOD OF RECORD, December 1939, April 1940, September 1940 to current year. Records published in WSP 1316 were listed in error and should not be used.

Reservoir is formed by earthfill dam; storage began in 1921. Usable capacity, 3,890 acre-ft, between elevation 2,830.5 ft and 2,856.3 ft. Prior to 1960, usable capacity, 4,000 acre-ft. No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 4,270 acre-ft, May 31, 1980, elevation, 2,857.4 ft; no storage Aug. 31, 1944, Aug. 31, Sept. 30, 1946, Oct. 31, 1951.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 3,930 acre-ft, Apr. 30, elevation, 2,856.50 ft; minimum observed, 908 acre-ft, Sept. 30, elevation, 2,844.20 ft.

MISSION VALLEY RESERVOIRS.--A group of eight reservoirs, in an area east of and tributary to Flathead River and between Flathead Lake and Jocko River, Lake County, Hydrologic Unit 17010212, is operated for irrigation.

PERIOD OF RECORD, December 1939, September 1940 to current year. Nonrecording gages are set to approximate sea level, and are read on the last day of the month. Figures given herein represent usable contents. Records furnished by Bureau of Indian Affairs. April to July 1948 monthend contents and daily maximum for individual reservoirs, published in WSP 1080.

12371000 TURTLE LAKE.--Lat 47°40'19", long 114°04'32", in $SW^1/_4NW^1/_4NE^1/_4$ sec.18, T.22 N., R.19 W., at outlet works 4 mi southeast of Polson, fed entirely by various canals; storage began in 1932. Prior to October 1968, published as "Twin Reservoir." Usable capacity, 899 acre-ft between elevation 3,061.0 ft and 3,090.5 ft. No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 1,000 acre-ft, June 30, 1996, elevation, 3,092.02 ft; no storage at times in July 1941, August, September 1944, October 1957, July, August, September 1977, July through October 1992, March 1994, October through December 1994.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 730 acre-ft, June 30, elevation, 3,087.70 ft; minimum, 79 acre-ft, Aug. 31, elevation, 3,067.00 ft.

SMALLER RESERVOIRS IN PEND OREILLE RIVER BASIN IN MONTANA--Continued

12376700 LOWER CROW RESERVOIR.--Lat 47°30'09", long 114°13'35", in $SW^1/_4SE^1/_4SE^1/_4$ sec.11, T.20 N., R.21 W., at outlet works on Crow Creek, 5.2 mi northwest of Charlo, at river mile 3.44; storage began in 1933. Usable capacity 10,350 acre-ft between elevation 2,800 ft and 2,877.0 ft. No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 10,770 acre-ft, May 21, 22, 1948, elevation, 2,878.2 ft; no storage Sept. 30, 1963, Oct. 31, Nov. 30, 1981.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 9,880 acre-ft, Apr. 30, elevation, 2,875.61 ft; minimum observed, 2,080 acre-ft, Aug. 31, elevation 2,839.30 ft.

12377200 MISSION RESERVOIR.--Lat 47°18'54", long 114°01'15", in $NW^1/_4SW^1/_4SE^1/_4$ sec.15, T.18 N., R.19 W., at outlet works on Mission Creek, 4 mi east of St. Ignatius and at river mile 16.7; storage began in 1935. Usable capacity 8,130 acre-ft between elevation 3,340.7 ft and 3,406.0 ft. Prior to 1993, usable capacity, 7,250 acre-ft.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 8,370 acre-ft, June 30, 1970, June 30, 1976, elevation, 3,409.8 ft; no storage at times during September 1949, February, March, 1964.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 8,160 acre-ft, June 30, elevation, 3,409.07 ft; minimum observed, 800 acre-ft, Oct. 31, elevation, 3,377.30 ft.

12377300 ST. MARYS LAKE.--Lat 47°15'58", long 113°56'08", in $SW^1/_4NE^1/_4NE^1/_4$ sec.6, T.17 N., R.18 W., at outlet works on Dry Creek, 8 mi southwest of St. Ignatius, fed by water diverted from Jocko River; storage began in 1919. Prior to October 1968, published as "Tabor Reservoir." Usable capacity, 23,500 acre-ft between elevation 3,911.5 ft and 4,025.0 ft, not including contents of natural lake. Prior to 1993, usable capacity, 23,300 acre-ft. No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 23,510 acre-ft, June 30, 1976, June 30, 1978, elevation, 4,025.7 ft; no storage Sept. 30, 1969, Feb. 28, 1995.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 22,910 acre-ft, June 30, elevation, 4,023.60 ft; minimum observed, 137 acre-ft, Dec. 31 and Jan. 31, elevation, 3,912.40 ft..

12377900 PABLO RESERVOIR.--Lat 47°38'25", long 114°08'33", in $SW^1/_4SW^1/_4NE^1/_4$ sec.27, T.22 N., R.20 W., at outlet works 3 mi south of Polson, 3 mi northwest of Pablo, fed entirely by various canals, some water supplies by Flathead pumping plant; storage began in 1914. Usable capacity, 28,400 acre-ft between elevation 3,179 ft, gate sill, and 3,210.2 ft. Prior to 1994 water year, published as usable capacity, 27,100 acre-ft. No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 28,760 acre-ft, June 30, 1998, elevation, 3,211.07 ft; no storage at times in several years.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 21,450 acre-ft, June 30, elevation, 3,207.30 ft; minimum observed, 9,050 acre-ft, Aug. 31, elevation, 3,198.46 ft.

12378200 McDONALD RESERVOIR.--Lat 47°25'31", long 113°59'27", in $SE^1/_4NE^1/_4NE^1/_4$ sec.10, T.19 N., R.19 W., at outlet works on Post Creek, 9 mi east of Charlo, and at river mile 12.4; storage began in 1919. Usable capacity, 7,220 acre-ft between elevation 3,545.0 ft, and 3,598.0 ft, not including contents of natural lake. Prior to 1993, usable capacity, 8,220 acre-ft. No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 8,330 acre-ft, June 30, 1983, elevation, 3,598.5 ft; no storage Aug. 31, 1961, Aug. 30, 1966, Oct. 31, 1971, Apr. 30, 1972, October 1994 through April 1995, and August 1999 to Apr. 30, 2000.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 8,200 acre-ft, June 30, elevation, 3,597.90 ft; no storage October through April.

12378300 KICKING HORSE RESERVOIR.--Lat 47°27'25", long 114°04'35", in $SE^1/_4NE^1/_4NE^1/_4$ sec.36, T.20 N., R.20 W., at outlet works 4 mi northeast of Charlo, fed entirely by various canals; storage began in 1930. Usable capacity, 9,200 acre-ft between elevation 3,042.00 ft and 3,061.94 ft. Prior to 1993, usable capacity, 8,350 acre-ft. Dead storage, 70 acre-ft below elevation 3,042.0 ft. Formerly published as 12379700 Kicking Horse Reservoir prior to 1988 water year.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 10,320 acre-ft, June 30, 1976, May 31, 1980, elevation, 3,064.4 ft; no storage Aug. 31, 1961.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 6,520 acre-ft, June 30, elevation, 3,059.60 ft; minimum observed, 1,070 acre-ft, Aug. 31, elevation, 3,048.44 ft.

12378400 NINEPIPE RESERVOIR.--Lat 47°27'20", long 114°08'08", in $NE^1/_4NW^1/_4NW^1/_4$ sec.34, T.20 N., R.20 W., at outlet works 2 mi northeast of Charlo, fed entirely by various canals; storage began in 1911. Usable capacity 15,000 acre-ft between elevation 2,895.4 ft and 3,010.0 ft. Prior to 1993, usable capacity, 14,870 acre-ft. No dead storage. Formerly published as 12380000 Ninepipe Reservoir prior to 1988 water year.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 16,950 acre-ft, June 30, 1974, elevation, 3,012.3 ft; no storage Aug. 31, 1961.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 9,100 acre-ft, June 30, elevation, 3,006.00 ft; minimum observed, 1,120 acre-ft, Aug. 31, elevation, 2,996.04 ft.

SMALLER RESERVOIRS IN PEND OREILLE RIVER BASIN IN MONTANA--Continued

12380000 UPPER JOCKO LAKE.--Lat 47°11'34", long 113°42'44", in $NE^1/_4NW^1/_4$ sec. 36, T. 17 N., R. 17 W., Missoula County, Hydrologic Unit 17010212, at dam on Jocko River, 17.3 mi southeast of Arlee, and at river mile 41.8. DRAINAGE AREA, 2.99 mi^2. PERIOD OF RECORD, April 1968 to current year. Nonrecording gage read at end of month. U.S. Geological Survey began publishing data October 1988. Datum of gage is at sea level (levels by Bureau of Indian Affairs).

Reservoir is formed by earthfill dam; storage began in 1967. Was previously known as "Black Lake" prior to dam construction. Usable capacity, 5,200 acre-ft, between elevation 4,390.0 ft, outlet sill, and 4,440.0 ft, spillway elevation. Prior to 1993, usable capacity, 4,440 acre-ft. Dead storage, 763 acre-ft. Transmountain diversion takes water from Placid Creek in Clearwater River basin in $SW^1/_4$ sec. 29, T. 17 N., R. 16 W., to Upper Jocko Lake, thence to Lower Jocko Lake. Some water may then be diverted to St. Mary's Lake for use in the Mission Valley. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 4,290 acre-ft, May 31, 1971, elevation, 4,439.1 ft; no storage at times each year.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 1,810 acre-ft, May 31, elevation, 4,417.30 ft; no storage most of year.

12380500 LOWER JOCKO LAKE.--Lat 47°12'10", long 113°45'35", in $NW^1/_4SW^1/_4NW^1/_4$ sec.27, T.17 N., R.17 W., Missoula County, Hydrologic Unit 17010212, at dam on Jocko River, 15 mi east of Arlee, and at river mile 39.3. DRAINAGE AREA, 7.39 mi^2. PERIOD OF RECORD, December 1939, April 1940, September, 1940, to current year (no winter records most years since 1947). Records for November 1957, published only in WSP 1736. May to July 1948 scattered daily contents, published in WSP 1080. Nonrecording gage read at end of month. Datum of gage is at sea level (levels by Bureau of Indian Affairs).

Reservoir is formed by earthfill dam; storage began in 1937. Usable capacity, 6,380 acre-ft between elevation 4,267.0 ft and 4,340.0 ft. Prior to 1960, usable capacity, 7,600 acre-ft at elevation 4,350 ft and 1960-1992, usable capacity, 5,380 acre-ft. Dead storage unknown below elevation 4,267 ft, elevation of natural lake outlet. Transmountain diversion takes water from Placid Creek in Clearwater River basin in $SW^1/_4$ sec.29, T.17 N., R.16 W., to Upper Jocko Lake, thence to Lower Jocko Lake. Some water may then be diverted to St. Mary's Lake for use in the Mission Valley. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 6,700 acre-ft, June 9, 1948, elevation, 4,342.7 ft; no storage at times.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 4,320 acre-ft, May 31, elevation, 4,320.93 ft; no storage October through March.

12390000 THOMPSON FALLS RESERVOIR.--Lat 47°35'42", long 115°21'36", in $NE^1/_4$ sec.7, T.21 N., R.29 W., Sanders County, Hydrologic Unit 17010213, at dam on Clark Fork at Thompson Falls, at river mile 208.0. DRAINAGE AREA, 20,968 mi^2. PERIOD OF RECORD, October 1939 to current year. Nonrecording gage is read several times daily but only monthend figures supplied. Datum of gage is at sea level (levels by The Montana Power Company).

Reservoir is formed by two concrete dams, first generator installed July 1915. Usable capacity, 14,970 acre-ft between elevation 2,380.0 ft, spillway crest, and 2,396.0 ft, top of flashboards. Dead storage unknown. Figures given herein represent usable contents. Water is used for power development and recreation. Records furnished by PPL EnergyPlus, LLC.

EXTREMES FOR PERIOD OF RECORD: Maximum monthend contents observed, 16,420 acre-ft, May 12, 1997, elevation, 2,396.95 ft; no storage July 31, 1958.

EXTREMES FOR CURRENT YEAR: Maximum monthend contents observed, 15,580 acre-ft, Mar. 30, elevation, 2,316.40 ft; minimum observed, 12,260 acre-ft, July 31, elevation, 2,314.08 ft.

12391300 NOXON RAPIDS RESERVOIR.--Lat 47°57'38", long 115°44'00", in $NE^1/_4SW^1/_4SW^1/_4$ sec.33, T.26 N., R.32 W., Sanders County, Hydrologic Unit 17010213, at dam on Clark Fork, 3 mi southeast of Noxon, 7.2 mi upstream from Bull River, and at river mile 169.7. DRAINAGE AREA, 21,833 mi^2. PERIOD OF RECORD, April 1959 to current year. Prior to October 1962, published as "Noxon Reservoir." Record of daily elevation on file in Helena district office. Water-stage recorder, midnight readings. Datum of gage is at sea level (levels by the Washington Water Power Company).

Reservoir is formed by concrete and earthfill dam, construction began in 1955, completed in 1959. Storage began Apr. 3, 1959. Usable capacity, 334,600 acre-ft between elevation 2,270.00 ft, minimum operating level, and 2,331.00 ft. Figures given herein represent usable contents. Water is used for power production, flood control, and recreation. Records furnished by The Washington Water Power Company.

EXTREMES FOR PERIOD OF RECORD: Maximum contents, 335,400 acre-ft, Apr. 7, 1960, elevation, 2,331.10 ft; minimum since first filling, 26,380 acre-ft, May 10, 1967, elevation, 2,277.15 ft.

EXTREMES FOR CURRENT YEAR: Maximum contents, 329,100 acre-ft, Oct. 12, 24, and Nov. 6, elevation, 2,330.30 ft; minimum, 301,500 acre-ft, Dec. 30, elevation, 2,326.71 ft.

COLUMBIA RIVER BASIN
PEND OREILLE RIVER BASIN

SMALLER RESERVOIRS IN PEND OREILLE RIVER BASIN IN MONTANA--Continued

Monthend contents, in acre-feet, water year October 1999 to September 2000

Date		Camas Reservoirs	Mission Valley Reservoirs	Upper Jocko Lake	Lower Jocko Lake	Thompson Falls Reservoir	Noxon Rapids Reservoir
Sept	30	24,440	17,780	0	0	14,120	327,600
Oct.	31	25,830	27,730	0	30	14,100	322,100
Nov.	30	25,970	24,360	0	0	14,260	319,300
Dec.	31	26,640	25,800	0	0	14,580	307,500
Jan.	31	28,350	26,450	0	0	14,400	324,400
Feb.	29	28,830	28,310	0	0	14,560	326,100
Mar.	31	30,210	29,150	0	0	14,230	323,400
Apr.	30	35,610	38,820	1,380	1,310	14,540	320,600
May	31	36,220	54,090	1,810	4,320	14,420	314,300
June	30	34,880	84,280	1,450	3,990	14,910	306,100
July	31	28,390	57,850	0	2,400	12,260	317,000
Aug.	31	21,130	20,500	0	446	13,810	326,500
Sept.	30	18,800	26,930	0	48	14,690	324,600

PEND OREILLE RIVER BASIN

12391950 CLARK FORK BELOW CABINET GORGE DAM, NEAR CABINET, ID

LOCATION.--Lat 48°05'18", long 116°04'16", in SW¼SW¼NW¼ sec.27, T.55 N., R.3 E., Cabinet Quad., Bonner County, Hydrologic Unit 17010213, on right bank 0.7 mi downstream from Cabinet Gorge Dam at cableway, 2.1 mi downstream from Blue Creek, 3.1 mi southeast of Clark Fork, and at mile 149.2.

DRAINAGE AREA.--22,067 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,060.00 ft above sea level (levels by Washington Water Power Co). See WSP 1933 for history of changes made prior to Sept. 30, 1952. Water-stage recorder at site 0.4 mi upstream at datum 60.00 ft lower Oct. 1, 1952, to Sept. 30, 1964, and at present datum Oct. 1, 1964, to May 21, 1973.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated by Hungry Horse Reservoir, Flathead Lake, and Noxon Rapids Reservoir. Extreme diurnal fluctuation caused by powerplant at Cabinet Gorge Dam. Diversions above station for irrigation of about 354,000 acres.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 134,000 ft^3/s, May 18, 1997, gage height, 29.14 ft; minimum daily, 3,330 ft^3/s, Feb. 8, 1998.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 62,400 ft^3/s, May 23, gage height, 19.25 ft; minimum daily, 5,450 ft^3/s, Sept. 9, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8830	15300	23200	13700	12600	14300	16700	38300	42400	21900	12100	7140
2	9730	12500	21600	13500	12000	14400	12700	39700	36800	18100	15200	8370
3	9720	11300	23100	17700	18500	13400	18100	44100	34500	20800	17200	7660
4	7870	17800	17100	21700	12400	12000	14300	43000	31100	22700	15100	6620
5	7660	13400	12700	21600	6470	13500	20200	46300	30800	28000	8220	7220
6	7490	7580	19500	20200	10000	15400	20800	46600	34200	28800	13200	7480
7	7110	15800	20900	17300	11100	14200	18800	50500	34600	27600	11100	9900
8	7750	16000	19900	13800	15200	17600	13300	42800	34200	23400	10500	9010
9	9110	20800	20500	13500	11300	16500	16100	39000	34600	18500	15100	5450
10	7200	16300	23300	21300	14600	15100	19900	40900	34800	24500	10100	8940
11	7220	16600	18000	19800	14900	8090	22300	38700	34700	23300	7820	9260
12	7950	18700	16900	17400	7000	13100	21500	34900	34600	24200	6600	9870
13	8330	12700	20100	17400	11200	14200	24900	27500	33800	22600	9090	9250
14	8780	13200	20200	16100	15300	17000	32000	27700	30800	20600	8430	8220
15	8600	18700	22600	12700	12700	13600	33400	29900	33700	12100	10800	8740
16	7090	17100	22100	9450	13200	18600	33200	34800	40100	19200	11300	6920
17	7300	21300	18200	17500	11800	17700	34300	34800	45900	20400	11100	5520
18	7940	22100	14000	16300	14500	5700	34200	32300	44100	21300	10200	7180
19	8120	15200	17600	15400	8210	13600	33700	34600	44800	18700	6360	5610
20	7970	14300	22800	14600	9660	14400	34100	34800	41800	18700	5940	7090
21	10000	19100	23900	13400	11200	14500	34300	33800	41200	17600	8600	6170
22	11100	20100	21600	9570	11200	17700	39300	38500	41200	6560	11300	7770
23	8420	20700	22300	12400	15900	13700	43900	44400	39500	15200	6850	5450
24	7290	20400	16500	16800	15100	14200	42700	44700	36500	14800	10500	9200
25	11700	18200	17200	14400	15100	7560	44800	44100	37100	16100	7770	9420
26	9420	19700	17500	14600	5930	10700	39400	43500	35200	16600	5780	9610
27	16000	19500	19300	15100	11400	14800	40600	34400	35000	13100	5530	7880
28	15800	19300	23400	14800	13300	15300	38100	36900	32500	13700	6320	9320
29	10500	21800	21500	7620	12900	14700	34300	36300	34600	9170	7640	9020
30	10800	21900	19700	5740	---	15200	35300	40100	24300	13300	7770	6300
31	12200	---	14800	13500	---	15400	---	42200	---	13000	8350	---
TOTAL	285000	517380	612000	468880	354670	436150	867200	1200100	1089400	584530	301870	235590
MEAN	9194	17250	19740	15130	12230	14070	28910	38710	36310	18860	9738	7853
MAX	16000	22100	23900	21700	18500	18600	44800	50500	45900	28800	17200	9900
MIN	7090	7580	12700	5740	5930	5700	12700	27500	24300	6560	5530	5450
AC-FT	565300	1026000	1214000	930000	703500	865100	1720000	2380000	2161000	1159000	598800	467300

CAL YR 1999 TOTAL 8005920 MEAN 21930 MAX 71600 MIN 4380 AC-FT 15880000
WTR YR 2000 TOTAL 6952770 MEAN 19000 MAX 50500 MIN 5450 AC-FT 13790000

PEND OREILLE RIVER BASIN

12391950 CLARK FORK BELOW CABINET GORGE DAM, NEAR CABINET, ID--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1984 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: May 6 to July 18, 1998, April to September 2000 (discontinued).

REMARKS.--Water-quality data published from 1984-1995 as Clark Fork at Whitehorse Rapids near Cabinet (12392000).

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 22.0 °C, Aug. 7-8, 10-11, 2000; minimum, 9.3 °C, May 22, 1998.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: During period of collection (April to September), maximum, 22.0 °C, Aug. 7-8, 10-11.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
APR												
04...	0935	30500	192	8.2	10.5	6.0	.6	12.3	106	<1	<1	87
MAY												
09...	0955	34800	147	7.9	16.5	10.2	.7	10.6	102	<1	<1	70
23...	1020	35100	151	8.0	20.0	12.5	--	--	--	--	--	70
24...	0925	35100	151	7.9	18.0	12.0	--	--	--	--	--	73
24...	1045	47000	151	8.0	20.5	12.5	--	--	--	--	--	73
24...	1200	55000	150	8.0	26.0	13.0	--	--	--	--	--	72
25...	0955	35000	148	7.9	13.0	12.0	--	--	--	--	--	72
JUN												
19...	1230	48000	142	7.5	21.0	14.6	.4	10.9	115	<1	<1	64
JUL												
07...	0945	31100	162	8.0	18.0	17.5	.5	11.6	130	K5	K2	77
AUG												
07...	1500	21300	173	8.1	29.0	22.2	.8	--	--	K1	K2	82
31...	0945	5800	183	8.0	21.0	17.8	--	--	--	--	--	87
SEP												
05...	1115	8230	184	8.0	13.0	17.9	<.5	5.4	61	<1	<1	93

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ANC WATER UNFLTRD FET FIELD MG/L AS HCO3 (00440)	ANC UNFLTRD CARB FET FIELD MG/L AS CO3 (00445)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
APR											
04...	24	6.6	--	--	--	--	--	--	--	--	--
MAY											
09...	19	5.1	--	--	--	--	--	--	--	--	--
23...	19	5.2	--	--	--	--	--	--	--	--	--
24...	21	5.4	--	--	--	--	--	--	--	--	--
24...	20	5.4	--	--	--	--	--	--	--	--	--
24...	20	5.3	--	--	--	--	--	--	--	--	--
25...	20	5.3	--	--	--	--	--	--	--	--	--
JUN											
19...	18	4.9	--	--	--	--	--	--	--	--	--
JUL											
07...	21	5.7	--	--	--	--	--	--	--	--	--
AUG											
07...	23	6.2	--	--	--	--	--	--	--	--	--
31...	24	6.6	--	--	--	--	--	--	--	--	--
SEP											
05...	26	7.0	2.4	5	.7	110	0.0	88	4.0	1	<.1

K--Results based on non-ideal colony count.

12391950 CLARK FORK BELOW CABINET GORGE DAM, NEAR CABINET, ID--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
APR											
04...	--	.026	<.002	E.06	E.004	.003	.022	.833	.875	1	82
MAY											
09...	--	.032	.005	.1	E.004	<.001	.016	.770	4	3	282
23...	--	--	--	--	--	--	.010	.695	3	--	--
24...	--	--	--	--	--	--	.013	.760	4	--	--
24...	--	--	--	--	--	--	.006	.636	2	--	--
24...	--	--	--	--	--	--	.003	.681	2	--	--
25...	--	--	--	--	--	--	.021	.765	4	--	--
JUN											
19...	--	.014	.002	.1	.010	<.001	.013	.669	5	3	389
JUL											
07...	--	.010	.002	.1	E.007	.002	.012	.512	3	1	84
AUG											
07...	--	--	--	--	--	--	.001	.581	.491	47	2700
31...	--	--	--	--	--	--	.008	.616	.469	--	--
SEP											
05...	7.2	.030	.006	E.09	.008	.002	.006	.743	.392	13	289

E--Estimated.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1										9.7	9.3	9.5
2							---	---	---	9.7	9.4	9.6
3							---	---	---	9.6	9.4	9.5
4							---	---	---	9.6	9.4	9.5
5							---	---	---	9.7	9.4	9.6
6							---	---	---	9.9	9.7	9.8
7							---	---	---	10.2	9.9	10.1
8							---	---	---	10.4	10.1	10.2
9							---	---	---	10.2	10.1	10.2
10							---	---	---	10.2	9.9	10.0
11							---	---	---	9.9	9.6	9.9
12							---	---	---	9.9	9.6	9.7
13							---	---	---	10.1	9.4	9.8
14							---	---	---	10.4	9.6	10.0
15							---	---	---	10.4	9.6	10.2
16							---	---	---	10.7	10.2	10.5
17							---	---	---	10.8	10.4	10.6
18							---	---	---	10.8	10.4	10.6
19							---	---	---	10.8	10.4	10.6
20							---	---	---	11.0	10.4	10.7
21							---	---	---	11.4	10.8	11.2
22							---	---	---	11.8	11.3	11.6
23							---	---	---	12.2	11.6	12.0
24							---	---	---	12.5	12.2	12.4
25							---	---	---	12.8	12.2	12.6
26							---	---	---	13.0	12.7	12.8
27							9.9	9.6	9.8	12.8	12.7	12.8
28							9.9	9.6	9.8	13.0	12.7	12.8
29							9.6	9.3	9.4	13.0	12.7	12.8
30							9.4	9.3	9.4	13.2	12.8	13.0
31							---	---	---	13.0	12.7	12.8
MONTH							---	---	---	13.2	9.3	10.9

PEND OREILLE RIVER BASIN

12391950 CLARK FORK BELOW CABINET GORGE DAM, NEAR CABINET, ID--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.0	12.7	12.8	16.8	15.8	16.4	21.0	20.0	20.4	19.2	18.2	18.7
2	13.3	12.8	13.0	17.1	15.6	16.5	21.1	19.7	20.5	19.0	17.6	18.6
3	13.3	12.8	13.1	17.1	15.5	16.5	21.5	20.0	20.8	19.0	17.7	18.5
4	13.5	13.0	13.2	16.6	15.5	16.2	21.5	19.8	20.8	18.7	17.6	18.3
5	13.3	12.7	13.1	16.9	15.3	16.3	21.5	20.3	20.9	18.5	17.9	18.3
6	13.3	12.8	13.1	17.2	15.3	16.8	21.8	20.3	21.1	18.4	17.7	18.1
7	13.8	13.2	13.5	17.4	16.3	17.0	22.0	20.6	21.3	18.4	17.7	18.0
8	13.9	13.5	13.7	17.6	16.1	17.2	22.0	20.6	21.2	18.0	16.8	17.7
9	13.6	13.3	13.5	17.7	16.4	17.3	21.8	20.3	21.2	17.6	17.1	17.4
10	14.1	13.5	13.8	17.7	16.1	17.3	22.0	20.5	21.2	17.6	16.9	17.3
11	14.2	13.9	14.0	17.6	16.3	17.3	22.0	20.5	21.2	17.6	17.1	17.2
12	14.4	13.9	14.1	17.9	16.8	17.5	21.8	20.6	21.3	17.7	16.8	17.2
13	14.5	13.9	14.2	18.0	16.9	17.7	21.8	20.6	21.3	17.7	16.6	17.2
14	14.5	14.2	14.3	18.2	16.9	17.7	21.6	20.0	21.0	18.0	17.1	17.5
15	14.4	13.9	14.2	18.2	17.1	17.6	21.5	20.5	20.9	17.9	17.1	17.6
16	14.5	14.1	14.3	18.4	17.1	17.9	21.3	20.0	20.6	17.9	17.1	17.6
17	14.5	14.2	14.4	18.4	17.2	18.0	21.1	20.0	20.6	17.9	17.4	17.6
18	14.7	14.2	14.4	18.7	17.4	18.2	21.1	20.0	20.5	17.7	17.1	17.4
19	14.5	14.1	14.3	19.0	17.1	18.4	21.0	20.3	20.6	17.6	17.1	17.3
20	14.5	14.1	14.3	19.3	17.9	18.8	21.0	20.1	20.5	17.2	16.8	17.1
21	15.0	14.4	14.7	19.5	18.0	19.0	20.8	20.0	20.4	17.1	16.3	16.7
22	15.3	14.5	14.9	19.5	17.9	19.0	21.1	19.8	20.4	16.6	15.5	16.1
23	15.3	15.0	15.1	19.8	18.8	19.4	20.6	19.7	20.1	15.6	14.7	15.2
24	15.2	14.9	15.1	20.0	18.5	19.3	20.5	19.5	19.9	15.0	14.4	14.7
25	15.5	14.9	15.1	19.8	18.7	19.3	20.5	19.5	20.0	14.7	14.2	14.4
26	15.8	15.3	15.6	20.0	18.7	19.5	20.3	19.5	20.0	14.7	14.2	14.4
27	16.1	15.6	15.9	20.1	19.2	19.7	20.3	19.5	19.9	15.0	14.5	14.7
28	16.3	15.5	16.1	20.6	19.0	19.9	20.1	19.2	19.8	15.3	14.9	15.1
29	16.4	15.8	16.2	20.5	19.2	19.9	20.0	19.0	19.6	15.3	15.0	15.2
30	16.6	15.3	16.1	20.8	18.7	20.2	19.8	19.2	19.4	15.3	15.0	15.3
31	---	---	---	21.1	19.5	20.3	19.3	18.7	19.0	---	---	---
MONTH	16.6	12.7	14.3	21.1	15.3	18.1	22.0	18.7	20.5	19.2	14.2	16.9

12392000 CLARK FORK AT WHITEHORSE RAPIDS, NEAR CABINET, ID

LOCATION.--Lat 48°05'30", long 116°07'00", in NE¼ sec.30, T.55 N., R.3 E., Cabinet Quad., Bonner County, Hydrologic Unit 17010213, on right bank 3.0 mi downstream from Cabinet Gorge Dam, 4.5 mi southeast of Clark Fork, and at mile 146.9.

DRAINAGE AREA.--22,073 mi^2.

PERIOD OF RECORD.--September 1928 to current year. Prior to October 1952, published as "near Heron, Mont."

REVISED RECORDS.--WSP 1182: 1936. WSP 1736: 1931, 1936(m), 1937. WRD-ID-1973-1: 1972(M). WDR-ID-1973-1: 1972(M).

REMARKS.--Flow regulated by Hungry Horse Reservoir, Flathead Lake, and Noxon Rapids Reservoir. Extreme diurnal fluctuation caused by power-plant at Cabinet Gorge Dam. Diversions above station for irrigation of about 354,000 acres. Discharge measurements made at Whitehorse Rapids indicate about 600 ft^3/s ground-water inflow between the measuring cableway for Clark Fork River below Cabinet Gorge Dam (12391950) and Whitehorse Rapids. Records given herein represent flow at Whitehorse Rapids, computed by adding this 600 ft^3/s to observed flows at 12391950, and are considered comparable to records at former site near Heron, except for minor surface inflow from additional drainage area.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153,000 ft^3/s, May 29 to June 1, 1948; maximum gage height, 50.97 ft, May 31, 1948, site and datum then in use; minimum observed, 270 ft^3/s, Aug. 12, 1952 (discharge measurement), at sites in use since October 1952, during filling of Cabinet Gorge Reservoir; minimum daily since reservoir filled, 762 ft^3/s, Sept. 2, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a discharge of 195,000 ft^3/s from floodmark, elevation of 2,137.1 ft, at site about 4 mi upstream and 0.1 mi below "near Heron" site.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 51,100 ft^3/s, May 7; minimum daily, 6,050 ft^3/s, Sept. 9, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9430	15900	23800	14300	13200	14900	17300	38900	43000	22500	12700	7740
2	10300	13100	22200	14100	12600	15000	13300	40300	37400	18700	15800	8970
3	10300	11900	23700	18300	19100	14000	18700	44700	35100	21400	17800	8260
4	8470	18400	17700	22300	13000	12600	14900	43600	31700	23300	15700	7220
5	8260	14000	13300	22200	7070	14100	20800	46900	31400	28600	8820	7820
6	8090	8180	20100	20800	10600	16000	21400	47200	34800	29400	13800	8080
7	7710	16400	21500	17900	11700	14800	19400	51100	35200	28200	11700	10500
8	8350	16600	20500	14400	15800	18200	13900	43400	34800	24000	11100	9610
9	9710	21400	21100	14100	11900	17100	16700	39600	35200	19100	15700	6050
10	7800	16900	23900	21900	15200	15700	20500	41500	35400	25100	10700	9540
11	7820	17200	18600	20400	15500	8690	22900	39300	35300	23900	8420	9860
12	8550	19300	17500	18000	7600	13700	22100	35500	35200	24800	7200	10500
13	8930	13300	20700	18000	11800	14800	25500	28100	34400	23200	9690	9850
14	9380	13800	20800	16700	15900	17600	32600	28300	31400	21200	9030	8820
15	9200	19300	23200	13300	13300	14200	34000	30500	34300	12700	11400	9340
16	7690	17700	22700	10000	13800	19200	33800	35400	40700	19800	11900	7520
17	7900	21900	18800	18100	12400	18300	34900	35400	46500	21000	11700	6120
18	8540	22700	14600	16900	15100	6300	34800	32900	44700	21900	10800	7780
19	8720	15800	18200	16000	8810	14200	34300	35200	45400	19300	6960	6210
20	8570	14900	23400	15200	10300	15000	34700	35400	42400	19300	6540	7690
21	10600	19700	24500	14000	11800	15100	34900	34400	41800	18200	9200	6770
22	11700	20700	22200	10200	11800	18300	39900	39100	41800	7160	11900	8370
23	9020	21300	22900	13000	16500	14300	44500	45000	40100	15800	7450	6050
24	7890	21000	17100	17400	15700	14800	43300	45300	37100	15400	11100	9800
25	12300	18800	17800	15000	15700	8160	45400	44700	37700	16700	8370	10000
26	10000	20300	18100	15200	6530	11300	40000	44100	35800	17200	6380	10200
27	16600	20100	19900	15700	12000	15400	41200	35000	35600	13700	6130	8480
28	16400	19900	24000	15400	13900	15900	38700	37500	33100	14300	6920	9920
29	11100	22400	22100	8220	13500	15300	34900	36900	35200	9770	8240	9620
30	11400	22500	20300	6340	---	15800	35900	40700	24900	13900	8370	6900
31	12800	---	15400	14100	---	16000	---	42800	---	13600	8950	---
TOTAL	303530	535380	630600	487460	372110	454750	885200	1218700	1107400	603130	320470	253590
MEAN	9791	17850	20340	15720	12830	14670	29510	39310	36910	19460	10340	8453
MAX	16600	22700	24500	22300	19100	19200	45400	51100	46500	29400	17800	10500
MIN	7690	8180	13300	6340	6530	6300	13300	28100	24900	7160	6130	6050
AC-FT	602100	1062000	1251000	966900	738100	902000	1756000	2417000	2197000	1196000	635700	503000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2000, BY WATER YEAR (WY)

MEAN	12040	13320	14480	14480	14980	15960	24990	49560	57410	26570	11720	10640
MAX	25670	21970	34850	28020	38150	36480	59140	93830	115800	57650	19680	18300
(WY)	1960	1996	1996	1934	1996	1996	1934	1997	1948	1950	1997	1985
MIN	5466	5008	4732	3527	4217	5122	6165	16450	15480	9214	6320	5448
(WY)	1937	1937	1937	1937	1936	1937	1977	1941	1977	1940	1994	1994

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1929 - 2000	
ANNUAL TOTAL	8224880		7172320			
ANNUAL MEAN	22530		19600		22180	
HIGHEST ANNUAL MEAN					34250	1996
LOWEST ANNUAL MEAN					10180	1941
HIGHEST DAILY MEAN	72200	Jun 21	51100	May 7	153000	May 30 1948
LOWEST DAILY MEAN	4980	Jan 10	6050	Sep 9	762	Sep 2 1962
ANNUAL SEVEN-DAY MINIMUM	8250	Oct 5	7000	Sep 17	2710	Feb 10 1936
ANNUAL RUNOFF (AC-FT)	16310000		14230000		16070000	
10 PERCENT EXCEEDS	52400		37400		48400	
50 PERCENT EXCEEDS	17600		16200		15800	
90 PERCENT EXCEEDS	8770		8230		7250	

QUANTITY OF PRECIPITATION
PRICKLY PEAR CREEK BASIN

462905112035401 MCBEATH RESIDENCE NEAR CLANCY, MT (MT07)

(National trends network)

LOCATION.--Lat 46°29'05", long 112°03'54", in $NE^1/_4NW^1/_4NE^1/_4$ sec.2, T.8 N., R.4 W., Jefferson County, Hydrologic Unit 10030101, at National Forest boundary fence at private residence on Lump Gulch Road, 5.1 mi west of Clancy and 10 mi south of Helena.

PERIOD OF RECORD.--Water years 1981-1982, 1984 to current year. Prior to Oct. 1984, published as 462905112034001.

EQUIPMENT.--The sample collector is an Aerochem Metrics Model 301 precipitation collector. An automatic sensor detects occurrences of precipitation, activating a motor which removes a cover from the wetfall collection vessel. When precipitation ceases, the cycle is reversed. The sampling vessel is polyethylene and has a collection diameter of 28.6 cm and a capacity of 13 liters. Precipitation is measured using a Belfort Universal rain gage, series 5-780 with an event recorder.

REMARKS.--Samples from this site were analyzed by the Illinois Water Survey Laboratory in Champaign, Illinois. Chemical data are available through the internet at http://nadp.sws.uiuc.edu/nadpdata/. Missing rainfall accumulation data for June 7 due to equipment malfunction.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.13	.00	.00	.00	.00	.17	.00	.00	.07	.00	.13
2	.00	.00	.00	.00	.00	.00	.28	.00	.00	.26	.00	.08
3	.00	.00	.00	.00	.03	.00	.00	.00	.00	.23	.00	.02
4	.00	.01	.00	.01	.00	.00	.05	.00	.00	.00	.22	.00
5	.00	.00	.00	.00	.00	.00	.03	.07	.00	.00	.00	.01
6	.00	.00	.00	.00	.00	.02	.01	.00	---	.00	.00	.00
7	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.02	.00	.11	.00	.00	.00	.00	.00	.04
9	.00	.00	.00	.02	.00	.00	.00	.00	.04	.03	.00	.04
10	.00	.00	.00	.02	.00	.00	.00	.04	.05	.00	.00	.04
11	.00	.00	.00	.10	.00	.00	.00	.04	.04	.00	.08	.00
12	.01	.00	.00	.00	.02	.00	.00	.00	.02	.03	.00	.00
13	.00	.00	.02	.00	.00	.00	.24	.00	.03	.00	.00	.00
14	.03	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00
15	.31	.00	.00	.00	.12	.00	.00	.00	1.24	.00	.00	.00
16	.00	.00	.00	.10	.00	.04	.03	.15	.17	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.03	.09	.00	.00	.00
18	.00	.00	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.04	.00	.00	.09	.00	.00	.00	.00	.00	.27
20	.00	.04	.05	.10	.00	.01	.00	.00	.00	.00	.00	.02
21	.00	.00	.15	.01	.00	.00	.02	.00	.00	.00	.00	.30
22	.00	.00	.00	.00	.00	.00	.13	.00	.05	.00	.00	.11
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00	.00
25	.00	.03	.00	.00	.13	.01	.10	.00	.03	.00	.00	.00
26	.03	.04	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00
27	.17	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00	.00
28	.06	.00	.00	.00	.00	.06	.05	.02	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.13	.00	.13	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.25	.00	.00	.00	.05
31	.00	---	.00	.00	---	.00	---	.24	---	.03	.00	---
TOTAL	0.61	0.25	0.54	0.42	0.65	0.47	1.11	1.08	---	0.65	0.30	1.11
MEAN	.02	.01	.02	.01	.02	.02	.04	.03	---	.02	.01	.04
MAX	.31	.13	.25	.10	.22	.13	.28	.25	---	.26	.22	.30
MIN	.00	.00	.00	.00	.00	.00	.00	.00	---	.00	.00	.00

QUANTITY OF PRECIPITATION
MILK RIVER BASIN

482958109475101 NORTHERN MONTANA AGRICULTURAL RESEARCH CENTER NEAR HAVRE, MT (MT98)

(National trends network)

LOCATION.--Lat 48°29'58", long 109°47'51", in NE$^1/_4$SW$^1/_4$SW$^1/_4$ sec.28, T.32 N., R.15 E., Hill County, Hydrologic Unit 10050004 at Northern Montana Agricultural Research Center Experiment Station, 3/4 mile south of U.S. Highway 87, 5.7 miles southwest of Havre.

PERIOD OF RECORD.--Water years 1986 to current year.

EQUIPMENT.--The sample collector is an Aerochem Metrics Model 301 precipitation collector. An automatic sensor detects occurrences of precipitation, activating a motor which removes a cover from the wetfall collection vessel. When precipitation ceases, the cycle is reversed. The sampling vessel is polyethylene and has a collection diameter of 28.6 cm and a capacity of 13 liters. Precipitation is measured using a Belfort Universal rain gage, series 5-780 with an event recorder.

REMARKS.--Samples from this site were analyzed by the Illinois Water Survey Laboratory in Champaign, Illinois. Chemical data are available through the internet at http://nadp.sws.uiuc.edu/nadpdata/.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.03	.00	.00	.00	.00	.12	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10
3	.00	.00	.00	.00	.03	.00	.00	.00	.00	.14	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.20
5	.00	.00	.00	.08	.00	.00	.00	.00	.00	.27	.07	.20
6	.00	.00	.00	.01	.00	.03	.00	.00	.00	.01	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.03	.00
8	.00	.00	.01	.00	.00	.00	.00	.00	.04	.06	.00	.00
9	.05	.00	.00	.00	.00	.00	.00	.00	.00	.39	.00	.00
10	.00	.00	.00	.00	.07	.00	.03	.00	.00	.00	.00	.00
11	.01	.00	.00	.00	.00	.00	.00	1.20	.07	.00	.11	.00
12	.03	.00	.00	.00	.00	.01	.00	.10	.05	.00	.00	.00
13	.00	.14	.00	.00	.00	.00	.35	.00	.00	.00	.00	.00
14	.00	.00	.00	.13	.10	.11	.03	.00	.00	.00	.00	.00
15	.00	.00	.02	.00	.10	.00	.00	.00	.01	.00	.00	.00
16	.00	.00	.00	.04	.00	.06	.00	.00	.00	.00	.00	.00
17	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.23
19	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00
20	.00	.00	.03	.00	.00	.00	.00	.00	.00	.70	.00	.05
21	.00	.05	.00	.00	.00	.00	.00	.00	.00	.25	.00	.45
22	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.19	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.02	.01	.00	.00	.02	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00
26	.42	.15	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
27	.35	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00
28	.02	.00	.00	.00	.00	.00	.11	.00	.00	.00	.04	.00
29	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	1.23	---	.00	.00	---
TOTAL	1.03	0.34	0.06	0.35	0.32	0.57	0.71	2.59	0.46	1.85	0.25	1.23
MEAN	.03	.01	.00	.01	.01	.02	.02	.08	.02	.06	.01	.04
MAX	.42	.15	.03	.13	.10	.30	.35	1.23	.12	.70	.11	.45
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

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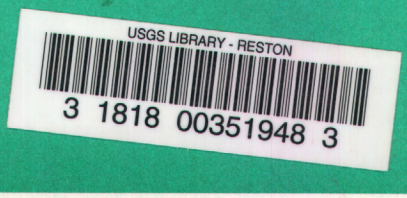
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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^{0}	kilometer
	Area	
acre	4.047×10^{3}	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi^2)	2.590×10^{0}	square kilometer
	Volume	
gallon (gal)	3.785×10^{0}	liter
	3.785×10^{0}	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^{3}	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft^3)	2.832×10^{1}	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft^3/s) d]	2.447×10^{3}	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^{3}	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second
	2.832×10^{1}	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^{1}	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
	Mass	
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.


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