STREAMFLOW CHARACTERISTICS OF THE UPPER COLUMBIA RIVER BASIN, MONTANA, THROUGH 1979

By Scott D. Waltemeyer and Ronald R. Shields

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METRIC CONVERSION TABLE

To convert inch-pound units in this report to metric units, multiply by the following factors:

Multiply inch-pound unit	By	To obtain metric unit
acre	0.004047	square kilometer (km^2)
acre-foot per year (acre-ft/yr)	0.001233	cubic hectometers per year (hm^3/yr)
cubic foot per second (ft^3/s and CFS)	0.02832	cubic meter per second (m^3/s)
foot (ft)	0.3048	meter (m)
inch per year (in/yr)	25.40	millimeter per year (mm/yr)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometer (km^2)

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ABSTRACT

Statistical summaries of streamflow data for selected stream-gaging sites are presented in this report to aid in appraising the hydrology of the upper Columbia River basin in Montana. Streamflow records are presented for 54 gaging stations for the period of record. Records for five gaging stations were compiled into separate periods owing to change in regulation after data collection commenced. The entire period of record, the period before regulation, and the period after regulation are presented for comparison.

For each gaging station selected for this report, a brief description is given for station location, drainage area, period of record, revisions of previously published records, type and history of gages, regulation and diversions, and extremes of discharge. These data are followed by tables of monthly and annual flow statistics, flood-frequency data, low-flow and high-flow frequency data, and flow-duration information.

INTRODUCTION

Purpose and scope

As a prerequisite to comprehensive planning for the development and management of the State's surface-water resources, the Montana Department of Natural Resources and Conservation is actively appraising the hydrology of the upper Columbia River basin. The purpose of this report is to present statistical summaries of streamflow data for 54 selected streamflow-gaging sites in the upper Columbia River basin to aid in that appraisal. Monthly and annual mean discharge, flood-frequency data, low-flow and high-flow frequency data, and flow-duration data were determined for the 54 stations. These data should be useful to individuals and agencies concerned with management of water in the basin. This report was prepared in cooperation with the Montana Department of Natural Resources and Conservation.

Acknowledgments

Special thanks are extended to Gary Rogers, who wrote the computer program to merge all statistical data into one table, and to Melvin K. White, who edited the station manuscripts.

STREAMFLOW RECORDS

Streamflow statistics are presented in this report for the gaging stations shown in figure 1. Each station is assigned an index number in downstream order. The numbering system is the same as that used in all U.S. Geological Survey streamflow-data reports.

Period of record

Records through September 30, 1979 (or September 30 of last year of record, if discontinued prior to 1979), were used in computing monthly and annual mean discharge, high-flow frequency, and flow-duration data. Low-flow frequency data were computed on the basis of the climatic year, which ends March 31. Flood-frequency data were computed only through the 1978 water year, because data for the 1979 year were not in storage at the time the data were retrieved from the computer.

Station description

The station description consists of location, drainage area, period of record, revisions of previously published records, type and history of gages, remarks on regulation and diversions, average discharge, and extremes of discharge. The location and the drainage area are obtained from the most accurate maps available. River mileage, given under "Location" for some stations, is that determined and used by the U.S. Army Corps of Engineers. Periods for which published records are available for the present station or for stations generally equivalent to the present one are given under "Period of Record."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information subsequently obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. To make such revised records readily available, a section entitled "Revised Records" has been added to the appropriate station descriptions. Listed therein are all the reports in which revisions have been published, each followed by the year for which data are revised in that report. The year shown is a water year; for example, 1965 indicates the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is noted after the water year by (M), which indicates that only the instantaneous maximum discharge was revised. If the drainage area has been revised, the report in which the revised area was first published is identified. For all stations for which cubic feet per second per square mile and runoff in inches have been published, a revision of the drainage area necessitates corresponding revision of all values based on the drainage area.

The type of gage currently in use, the datum of the present gage above sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "Gage." In references to datum of gage, the National Geodetic Vertical Datum of 1929 (NGVD) denotes a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada; this datum was formerly called "mean sea level datum of 1929."

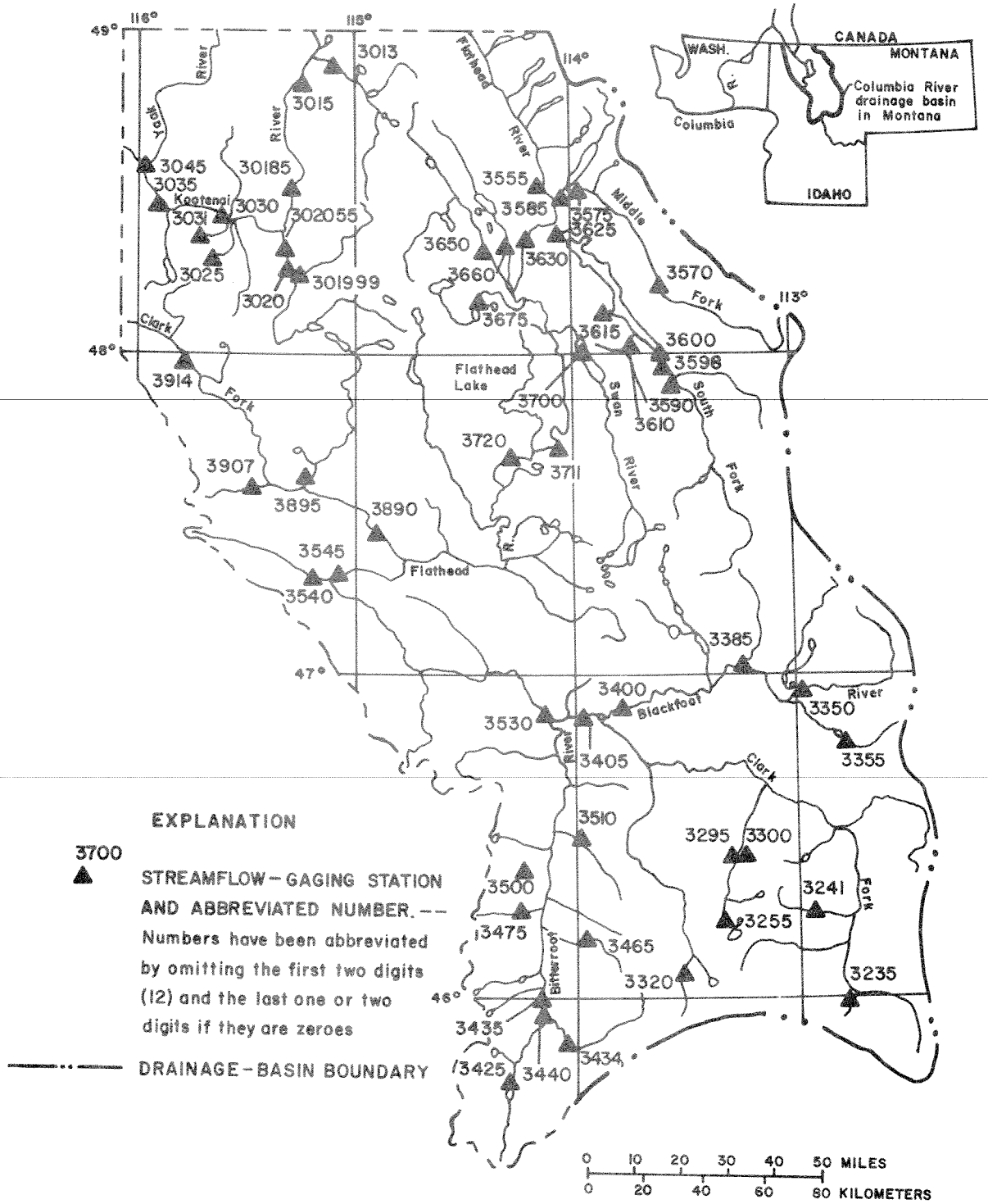

Figure 1.--Location of streamflow-gaging stations.

Information pertaining to the accuracy of the discharge records and to conditions that affect the natural flow at the gaging station is given under "Remarks." The average discharge for the number of years indicated is given under "Average Discharge." The "Extremes for Period of Record" section gives the momentary maximum and minimum discharges and gage heights for the period of record.

Tabulations

Tables presented for the stations include monthly and annual mean discharge, magnitude and probability of instantaneous peak flow (flood frequency), magnitude and probability of annual low flow, magnitude and probability of annual high flow, and duration of daily mean flow. The monthly and annual data were processed through the computer program Daily Values Monthly and Annual Statistics (Program W4422) by Price and Meeks (1977). Low-flow, high-flow, and flow-duration data were processed using U.S. Geological Survey computer program Daily Value Statistics (Program A969) of Meeks (1977). Flood-frequency data were processed using computer program J407 of Kirby (1981).

Monthly and annual mean discharge

The monthly and annual mean discharge tabulations show for the period of record: the maximum and minimum mean monthly and annual values, the mean (monthly and annual), the standard deviation from the mean, the coefficient of variation (ratio of the standard deviation to the mean), and the percentage of annual runoff for each monthly mean.

Flood frequency

The flood-flow tabulations show the data necessary to plot flood-frequency curves based on the period of record using the log-Pearson Type III frequency distribution. The flood-frequency curve is a graph showing the relationship between recurrence interval as abscissa and flood magnitude as ordinate. For stations with less than 25 years record, a generalized (regional) skew from the U.S. Water Resources Council (1977) was used. For stations with more than 25 years record, the generalized skew was weighted with the station skew in accordance with procedures recommended by the U.S. Water Resources Council (1977). The skew used is listed at the bottom of the flood-frequency table. For some sites, skew coefficients were not applicable, because flood peaks resulted from two separate and independent causes (for example, snowmelt and rainfall). In these instances, a mixed-population flood frequency analysis was used (Parrett and Omang, 1981, p. 6), and a skew value is not listed in the flood-frequency table. The flood magnitudes determined from the log-Pearson Type III analysis were weighted with values determined from regional regression equations (Parrett and Omang, 1981) to produce the values listed. The table lists the magnitude of instantaneous peak flow for recurrence intervals of 1.25 years, 2 years, 5 years, 10 years, 25 years, 50 years, and 100 years; the associated annual exceedance probabilities are 80 percent, 50 percent, 20 percent, 10 percent, 4 percent, 2 percent, and 1 percent, respectively. Flood frequency data were estimated for all stations, except those with less than 10 years record and those where peak discharge values were considered unreliable or unrepresentative of the long-term flow record.

Low-flow frequency

The low-flow tabulations show the data necessary to plot standard low-flow frequency curves using the log-Pearson Type III frequency distribution. The low-flow frequency curve is a graph showing the relationship between recurrence interval as abscissa and low-flow data as ordinate. The tabulations show smallest mean discharge for consecutive periods of 1, 3, 7, 14, 30, 60, 90, 120, and 183 days for recurrence interval of 2 years, 5 years, 10 years, 20 years, 50 years, and 100 years; the associated non-exceedance probabilities are 50 percent, 20 percent, 10 percent, 5 percent, 2 percent, and 1 percent, respectively. Recurrence intervals generally were extended to only twice the period of record. Records of more than 40 years were extended to the 100-year (1-percent) interval.

High-flow frequency

The high-flow tabulations show the data necessary to plot standard high-flow frequency curves using the log-Pearson Type III frequency distribution. The high-flow frequency curve is a graph showing the relationship between recurrence interval as abscissa and high-flow data as ordinate. The tabulations show the largest mean discharge for consecutive periods of 1, 3, 7, 15, 30, 60, and 90 days for recurrence intervals of 2 years, 5 years, 10 years, 25 years, 50 years, and 100 years; the associated exceedance probabilities are 50 percent, 20 percent, 10 percent, 4 percent, 2 percent, and 1 percent, respectively. The criteria for extending records of high-flow data were the same as for the low-flow data.

Flow duration

The flow-duration tabulations list the data necessary to plot a standard flow-duration curve. The flow-duration curve is a cumulative frequency curve that shows the percentage of time that specified discharges were equaled or exceeded. The tabulations show the discharges, in cubic feet per second, which were equaled or exceeded for a given percentage of time.

Effects of regulation

The natural flows of many streams in the upper Columbia River basin are altered by regulation by dams or diversions for irrigation. The reader needs to be aware that for many stations these conditions exist and the reported data reflect the pattern of operation of regulation and diversion. The "Remarks" section of the station description indicates known regulations and diversions; periods of natural flow were segregated from periods of flow affected by regulation by dams or major diversion only at stations 12303000, 12362500, 12363000, 12372000, and 12389000. If this information is needed for other sites, special requests can be directed to the District office in Helena, Mont. Depending upon the number of sites involved, a cost for computer services may be charged.

REFERENCES

Kirby, William, 1981, Annual flood frequency analysis using U.S. Water Resources Council guidelines (Program J407), chapter I, section C, *of* WATSTORE user's guide: U.S. Geological Survey Open-File Report 76-435, v. 4, p. C-1 to C-57.

Meeks, W. C., 1977, Daily values statistics (Program A969), chapter IV, section G, *of* WATSTORE user's guide: U.S. Geological Survey Open-File Report 75-426, v. 1, p. G-1 to G-37.

Parrett, Charles, and Omang, R. J., 1981, Revised techniques for estimating magnitude and frequency of floods in Montana: U.S. Geological Survey Open-File Report 81-917, 66 p.

Price, W. E., Jr., and Meeks, W. C., 1977, Daily values monthly and annual statistics (Program W4422), chapter IV, section F, *of* WATSTORE user's guide: U.S. Geological Survey Open-File Report 75-426, v. 1, p. F-1 to F-46.

U.S. Water Resources Council, 1977, Guidelines for determining flood flow frequency [revised]: Hydrology Committee Bulletin 17A, 162 p.

LIST OF STREAMFLOW-GAGING STATIONS, IN DOWNSTREAM ORDER

LIST OF STREAMFLOW-GAGING STATIONS, IN DOWNSTREAM ORDER--CONTINUED

STREAMFLOW-GAGING-STATION DESCRIPTIONS AND STATISTICAL TABLES

KOOTENAI RIVER BASIN

12301300 TOBACCO RIVER NEAR EUREKA, MT

LOCATION.--Lat 48°53'37", long 115°05'13", in NW¼SE¼SE¼ sec.9, T.36 N., R.27 W., Lincoln County, Hydrologic Unit 17010101, on right bank 0.2 mi (0.3 km) upstream from Indian Creek 1.8 mi (2.9 km) northwest of Eureka, and 2.8 mi (4.5 km) upstream from Lake Koocanusa flow line.

DRAINAGE AREA.--440 mi^2 (1,140 km^2).

PERIOD OF RECORD.--September 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,518.85 ft (767.745 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Diversions for irrigation of about 4,500 acres (18 km^2) above station.

AVERAGE DISCHARGE.--21 years, 273 ft^3/s (7.731 m^3/s), 8.42 in/yr (214 mm/yr), 197,800 acre-ft/yr (244 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,470 ft^3/s (70.0 m^3/s) June 18, 1974, gage height, 6.86 ft (2.091 m); maximum gage height, 7.12 ft (2.170 m) May 27, 1961; minimum daily discharge, 20 ft^3/s (0.57 m^3/s) Jan. 11, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about May 22, 1948, reached a discharge of 2,810 ft^3/s (79.6 m^3/s), from slope-area measurement of peak flow at site 1.5 mi (2.4 km) downstream.

MONTHLY AND ANNUAL MEAN DISCHARGES 1959-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	343	69	120	60	0.50	3.7
NOVEMBER	269	73	120	43	.36	3.7
DECEMBER	230	77	110	40	.36	3.4
JANUARY	248	68	101	39	.39	3.1
FEBRUARY	163	67	103	27	.26	3.1
MARCH	422	76	138	78	.56	4.2
APRIL	794	140	386	202	.52	11.8
MAY	1190	376	830	211	.25	25.3
JUNE	1500	243	808	281	.35	24.7
JULY	576	80	318	117	.37	9.7
AUGUST	206	50	128	41	.32	3.9
SEPTEMBER	239	62	115	41	.36	3.5
ANNUAL	409	124	273	73	.27	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1960-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NONEXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	52	40	33	28	-----	-----
3	58	46	39	34	-----	-----
7	63	54	49	45	-----	-----
14	70	59	54	50	-----	-----
30	79	67	60	56	-----	-----
60	85	72	66	61	-----	-----
90	89	75	69	64	-----	-----
120	92	78	73	68	-----	-----
183	98	83	77	74	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1948-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
1100	1590	2220	2640	3150	3550	3960

WEIGHTED SKEW = -0.100

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1930-40, 1968-71

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1480	1930	2160	2400	-----	---
3	1360	1750	1960	2160	-----	---
7	1200	1540	1720	1900	-----	---
15	1070	1370	1540	1710	-----	---
30	986	1230	1350	1460	-----	---
60	856	1040	1130	1190	-----	---
90	717	889	966	1030	-----	---

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1930-40, 1968-71

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
1460	980	757	585	432	225	155	130	115	100	87	74	66	58	54	49	37

12301500 KOOTENAI RIVER NEAR REXFORD, MT

LOCATION.--Lat 48°52'28", long 115°13'37", in SE¼NE¼NW¼ sec.21, T.36 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, near right bank on downstream side of bridge on State Highway 37, 300 ft (91 m) downstream from Sullivan Creek, 1.1 mi (1.8 km) southwest of Rexford, 3.5 mi (5.6 km) downstream from Tobacco River, and at mile 260.5 (419.1 km).

DRAINAGE AREA.--8,420 mi^2 (21,808 km^2), approximately.

PERIOD OF RECORD.--March 1929 to November 1940, October 1967 to September 1971.

REVISED RECORD.--WSP 1042: 1933.

GAGE.--Nonrecording gage read once or twice daily. Datum of gage is 2,244.10 ft (684.002 m) National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Mar. 24, 1929, to Oct. 15, 1931, nonrecording gage, Oct. 16, 1931, to June 4, 1932, water-stage recorder, June 5, 1932, to Nov. 18, 1940, nonrecording gages, all at present site at datum 13.14 ft (4.005 m) higher.

REMARKS.--Diversions for irrigation of about 13,900 acres (56.3 km^2) above station.

AVERAGE DISCHARGE.--15 years, 10,130 ft^3/s (286.9 m^3/s), 16.34 in/yr (415 mm/yr), 7,339,000 acre-ft/yr (9.05 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 79,900 ft^3/s (2,260 m^3/s) June 18, 1933, gage height, 28.84 ft (8.790 m), present datum; minimum, 1,100 ft^3/s (31.2 m^3/s) Feb. 7, 1936; minimum gage height, 13.26 ft (4.042 m) Dec. 7, 1936, present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 28, 1948, reached a stage of 31.06 ft (9.467 m), present datum, from flood marks (discharge, about 100,000 ft^3/s (2,830 m^3/s)).

MONTHLY AND ANNUAL MEAN DISCHARGES 1930-40, 1968-71

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	8540	2930	4620	1420	0.31	3.8
NOVEMBER	7840	2170	4030	1450	.36	3.3
DECEMBER	5530	1990	2970	828	.28	2.5
JANUARY	5020	1620	2680	786	.29	2.2
FEBRUARY	3860	1670	2620	637	.24	2.2
MARCH	4910	1880	2960	707	.24	2.4
APRIL	24500	3110	8120	5440	.67	6.7
MAY	42000	17600	26600	8050	.30	22
JUNE	49600	21800	34800	10600	.31	28.8
JULY	27400	9780	17900	6010	.34	14.8
AUGUST	11800	5740	8060	1950	.24	6.7
SEPTEMBER	7820	4090	5540	1060	.19	4.6
ANNUAL	13800	6630	10100	2270	.22	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1930-40, 1969-71

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	1500	1250	1150	1080	-----	-----
3	1590	1320	1220	1140	-----	-----
7	1710	1420	1300	1220	-----	-----
14	1880	1580	1470	1390	-----	-----
30	2100	1810	1710	1640	-----	-----
60	2320	2000	1880	1800	-----	-----
90	2420	2090	1970	1900	-----	-----
120	2560	2190	2070	1980	-----	-----
183	3100	2600	2410	2290	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
--	--	--	--	--	--	--

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1930-40, 1968-71

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	53500	65900	73300	81800	-----	-----
3	51600	64300	71700	80200	-----	-----
7	47600	59400	66000	73400	-----	-----
15	42400	53300	59400	66000	-----	-----
30	38000	47100	52200	57700	-----	-----
60	32100	40000	44700	50100	-----	-----
90	26600	32900	36600	40900	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1930-40, 1968-71

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
55100	38600	27900	21000	15900	8860	6010	4700	3840	3190	2730	2240	1960	1750	1610	1410	1170

12301850 KOOTENAI RIVER AT WARLAND BRIDGE, NEAR LIBBY, MT

LOCATION.--Lat 48°30'00", long 115°17'02", in NW¼NE¼NE¼ sec.34, T.32 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, on right bank at county road bridge, 0.1 mi (0.2 km) downstream from Barron Creek, 14.5 mi (23.3 km) northeast of Libby, and at mile 228.6 (367.8 km).

DRAINAGE AREA.--8,892 mi^2 (23,030 km^2), approximately.

PERIOD OF RECORD.--July 1961 to September 1971.

GAGE.--Water-stage recorder. Datum of gage is 2,145.4 ft (653.92 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Apr. 9, 1962, nonrecording gage on bridge at same site and datum.

REMARKS.--Diversions for irrigation of about 14,000 acres (56.7 km^2) from tributaries above station in Canada and the United States.

AVERAGE DISCHARGE.--10 years, 11,920 ft^3/s (337.6 m^3/s), 18.20 in/yr (462 mm/yr), 8,636,000 acre-ft/yr (10.6 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,400 ft^3/s (2,110 m^3/s) June 4, 1967, gage height, 15.80 ft (4.816 m); maximum gage height, 17.90 ft (5.456 m) May 29, 1971 (backwater from Libby dam); minimum daily discharge, 1,100 ft^3/s (31.2 m^3/s) Jan. 12, 1963.

MONTHLY AND ANNUAL MEAN DISCHARGES 1962-71

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	7870	4550	5860	1200	0.21	4.1
NOVEMBER	5510	3390	4630	703	.15	3.2
DECEMBER	4020	2870	3380	411	.12	2.4
JANUARY	3460	2290	2930	350	.12	2.1
FEBRUARY	4460	2380	3380	670	.20	2.4
MARCH	3740	2380	3090	425	.14	2.2
APRIL	14900	3500	7710	3690	.48	5.4
MAY	39100	20000	27600	6630	.24	19.3
JUNE	64000	32700	44800	8690	.19	31.4
JULY	29600	13400	23000	4490	.19	16.1
AUGUST	11800	6830	9870	1350	.14	6.9
SEPTEMBER	7760	5280	6490	784	.12	4.5
ANNUAL	13900	8540	11900	1590	.13	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1963-71

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	1700	1340	1180	-----	-----	-----
3	1800	1460	1310	-----	-----	-----
7	2010	1720	1580	-----	-----	-----
14	2280	1920	1740	-----	-----	-----
30	2530	2220	2080	-----	-----	-----
60	2870	2590	2440	-----	-----	-----
90	3020	2740	2580	-----	-----	-----
120	3210	2920	2740	-----	-----	-----
183	3820	3490	3340	-----	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
--	--	--	--	--	--	--

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1962-71

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	62900	70300	73900	-----	-----	-----
3	60400	67700	71400	-----	-----	-----
7	55400	63200	67600	-----	-----	-----
15	51800	59700	64000	-----	-----	-----
30	46100	53300	57700	-----	-----	-----
60	39300	45400	48700	-----	-----	-----
90	32600	37200	39400	-----	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1962-71

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
62300	45400	34900	25900	18000	10000	7080	5540	4580	3830	3260	2780	2470	2130	1880	1680	1380

12301999 WOLF CREEK NEAR LIBBY, MT

LOCATION.--Lat 48°13'57", long 115°16'29", in NE¼NW¼SW¼ sec.35, T.29 N., R.29 W., Lincoln County, Hydrologic Unit 17010102, on right bank 1.0 mi (1.6 km) upstream from mouth and 17.0 mi (27.4 km) southeast of Libby.

DRAINAGE AREA.--216 mi^2 (559 km^2).

PERIOD OF RECORD.--August 1967 to September 1977.

GAGE.--Water-stage recorder. Datum of gage is 2,544.88 ft (775.679 m) National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Diversions for irrigation of about 62 acres (0.25 km^2) above station.

AVERAGE DISCHARGE.--10 years, 70.2 ft^3/s (1.988 m^3/s), 4.41 in/yr (112 mm/yr), 50,860 acre-ft/yr (62.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,660 ft^3/s (47.0 m^3/s) Apr. 24, 1969, gage height, 6.52 ft (1.987 m); minimum daily, 2.5 ft^3/s (0.071 m^3/s) Jan. 2, 1977.

MONTHLY AND ANNUAL MEAN DISCHARGES 1968-77

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	19	5.8	11	3.3	0.32	1.2
NOVEMBER	24	8.2	11	4.5	.39	1.4
DECEMBER	24	6.7	12	6.0	.50	1.4
JANUARY	97	3.6	22	28	1.24	2.6
FEBRUARY	103	4.0	27	29	1.1	3.2
MARCH	348	10	69	102	1.48	8.2
APRIL	761	27	263	245	.93	31.2
MAY	446	29	296	147	.50	35.1
JUNE	142	9.7	82	43	.52	9.7
JULY	76	5.1	30	22	.75	3.5
AUGUST	17	3.9	11	4.1	.36	1.4
SEPTEMBER	14	4.6	9.3	3.0	.32	1.1
ANNUAL	116	10	70	39	.55	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1969-77

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	5.5	3.9	3.2	-----	-----	-----
3	6.1	4.4	3.5	-----	-----	-----
7	6.8	4.8	3.8	-----	-----	-----
14	7.5	5.2	4.0	-----	-----	-----
30	8.1	5.7	4.6	-----	-----	-----
60	8.8	6.2	4.9	-----	-----	-----
90	9.1	6.6	5.5	-----	-----	-----
120	9.3	7.2	6.2	-----	-----	-----
183	10	8.0	7.1	-----	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1968-77

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	672	1220	1490	-----	-----	-----
3	611	1110	1340	-----	-----	-----
7	530	960	1160	-----	-----	-----
15	462	807	960	-----	-----	-----
30	386	663	787	-----	-----	-----
60	280	477	568	-----	-----	-----
90	217	369	441	-----	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1968-77

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
739	384	216	111	72	35	20	14	12	10	8.8	7.2	5.2	4.2	3.5	3.2	2.7

12302000 FISHER RIVER NEAR JENNINGS, MT

LOCATION.--Lat 48°14'33", long 115°17'30", in NW¼NE¼SW¼ sec.27, T.29 N., R.29 W., Lincoln County. Hydrologic Unit 17010102, on left bank 0.4 mi (0.6 km) downstream from bridge, 2.3 mi (3.7 km) downstream from Wolf Creek, 8.5 mi (13.7 km) southeast of Jennings, and 8.6 mi (13.8 km) upstream from mouth. Prior to Dec. 17, 1965, at site 0.4 mi (0.6 km) upstream.

DRAINAGE AREA.--780 mi^2 (2,020 km^2).

PERIOD OF RECORD.--December 1950 to September 1969.

GAGE.--Water-stage recorder. Datum of gage is 2,433.94 ft (741.865 m) National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Dec. 15, 1950, to Dec. 16, 1965, at site 0.4 mi (0.6 km) upstream at datum 9.29 ft (2.832 m) higher.

REMARKS.--Diversions for irrigation of about 700 acres (2.83 km^2) above station.

AVERAGE DISCHARGE.--18 years (1951-69), 531 ft^3/s (15.04 m^3/s), 9.24 in/yr (235 mm/yr), 384,700 acre-ft/yr (474 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,320 ft^3/s (179 m^3/s) Apr. 17, 1956, gage height, 7.32 ft (2.231 m), site and datum then in use; minimum daily discharge, 50 ft^3/s (1.42 m^3/s) Dec. 11, 1961.

MONTHLY AND ANNUAL MEAN DISCHARGES 1952-69

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	337	84	166	77	0.46	2.6
NOVEMBER	468	83	218	105	.48	3.4
DECEMBER	502	93	243	115	.47	3.8
JANUARY	487	123	231	103	.45	3.6
FEBRUARY	598	112	304	148	.49	4.8
MARCH	700	127	368	148	.40	5.8
APRIL	3270	496	1470	750	.51	23.1
MAY	3240	960	1860	626	.34	29.2
JUNE	1650	460	951	337	.35	14.9
JULY	572	184	298	94	.31	4.7
AUGUST	206	91	137	27	.20	2.1
SEPTEMBER	236	83	126	41	.33	2.0
ANNUAL	859	369	531	128	.24	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1952-69

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	90	72	63	57	-----	-----
3	92	77	70	65	-----	-----
7	96	81	75	70	-----	-----
14	100	86	80	76	-----	-----
30	107	92	85	80	-----	-----
60	117	97	89	82	-----	-----
90	129	104	94	86	-----	-----
120	141	112	100	92	-----	-----
183	168	131	116	106	-----	-----

[1]MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1948-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
2370	3430	5190	6380	7860	8950	10000

WEIGHTED SKEW = 0.236

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1952-69

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	3370	4480	5020	5560	-----	-----
3	3160	4230	4780	5340	-----	-----
7	2810	3800	4350	4940	-----	-----
15	2460	3310	3810	4370	-----	-----
30	2100	2740	3100	3500	-----	-----
60	1720	2220	2530	2890	-----	-----
90	1400	1790	2040	2340	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1952-69

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
3320	2060	1460	1070	796	438	311	239	187	154	131	109	96	85	80	78	67

[1]Peak flow records combined for stations 12302000 and 12302055

12302055 FISHER RIVER NEAR LIBBY, MT

LOCATION.--Lat 48°21'20", long 115°18'50", in NW¼NE¼NW¼ sec.21, T.30 N., R.29 W., Lincoln County, Hydrologic Unit 17010102, on left bank 0.8 mi (1.3 km) upstream from mouth and 11.4 mi (18.3 km) east of Libby.

DRAINAGE AREA.--838 mi^2 (2,170 km^2).

PERIOD OF RECORD.--September 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,134.10 ft (650.474 m) National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Diversions of about 700 acres (2.8 km^2) above station.

AVERAGE DISCHARGE.--12 years, 511 ft^3/s (14.47 m^3/s), 8.28 in/yr (210 mm/yr), 370,200 acre-ft/yr (456 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,720 ft^3/s (247 m^3/s) Jan. 16, 1974, gage height, 9.29 ft (2.832 m); minimum, 29 ft^3/s (0.82 m^3/s) Jan. 2, 1977, gage height, 2.37 ft (0.722 m), result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about May 22, 1948, reached a discharge of 6,560 ft^3/s (186 m^3/s), by slope-area measurement at site 0.5 mi (0.8 km) upstream.

MONTHLY AND ANNUAL MEAN DISCHARGES 1968-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	244	95	143	42	0.29	2.3
NOVEMBER	305	118	185	67	.36	3.0
DECEMBER	698	95	232	164	.70	3.8
JANUARY	1270	78	296	322	1.09	4.8
FEBRUARY	961	119	308	240	.78	5.0
MARCH	2400	137	565	606	1.07	9.3
APRIL	2710	344	1170	739	.63	19.2
MAY	2760	482	1710	670	.39	27.9
JUNE	1800	221	917	469	.51	15
JULY	532	93	309	151	.49	5.1
AUGUST	216	73	145	52	.36	2.4
SEPTEMBER	204	77	130	35	.27	2.1
ANNUAL	813	169	510	208	.41	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1969-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	69	51	43	37	-----	-----
3	77	59	52	46	-----	-----
7	84	67	60	54	-----	-----
14	93	75	67	60	-----	-----
30	105	83	73	64	-----	-----
60	113	91	80	72	-----	-----
90	121	97	86	78	-----	-----
120	126	102	91	83	-----	-----
183	147	120	110	104	-----	-----

[1]MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
2370	3430	5190	6380	7860	8950	10000

WEIGHTED SKEW = 0.236

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1968-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	3050	4850	5940	-----	-----	-----
3	2860	4410	5300	-----	-----	-----
7	2540	3670	4240	-----	-----	-----
15	2170	3120	3600	-----	-----	-----
30	1880	2680	3060	-----	-----	-----
60	1540	2180	2490	-----	-----	-----
90	1310	1900	2190	-----	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1968-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
3220	2080	1440	1020	732	417	285	213	170	145	125	105	90	75	68	63	54

[1]Peak flow records combined for stations 12302000 and 12302055

12302500 GRANITE CREEK NEAR LIBBY, MT

LOCATION.--Lat 48°18'07", long 115°35'29", in SE¼NE¼SW¼ sec.5, T.29 N, R.31 W., Lincoln County, Hydrologic Unit 17010101, at Glacier Silver Lead Mine, 2.5 mi (4.0 km) upstream from Cherry Creek, and 6.3 mi (10.1 km) southwest of Libby.

DRAINAGE AREA.--23.6 mi^2 (61.1 km^2).

PERIOD OF RECORD.--January to December 1933, August 1936 to November 1943. Annual maximums water years 1959-60. July 1960 to September 1969. Monthly discharge only for August 1936, published in WSP 1316.

REVISED RECORD.--WSP 1246: 1933.

GAGE.--Water-stage recorder. Concrete control since Sept. 9, 1938. Altitude of gage is ?,780 ft (847 m), from topographic map. Prior to Sept. 16, 1960, nonrecording gages at present datum within 25 ft (8 m) of present site. Crest-stage gage July 2, 1959, to Sept. 15, 1960.

AVERAGE DISCHARGE.--16 years (1936-43, 1960-69), 69.5 ft^3/s (1.968 m^3/s), 50,350 acre-ft/yr (62.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 1,960 ft^3/s (55.5 m^3/s) Apr. 18, 1938, from rating curve extended above 730 ft^3/s (20.7 m^3/s); no flow Jan. 4, 1933 (creek blocked by snow slide).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May to June 1948 reached a stage of 5.65 ft (1.722 m) from floodmarks, discharge, 1,520 ft^3/s (43.0 m^3/s), by slope-area measurement of peak flow.

MONTHLY AND ANNUAL MEAN DISCHARGES 1937-43, 1961-69

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	62	7.2	25	17	0.67	3.0
NOVEMBER	73	5.4	30	19	.61	3.6
DECEMBER	125	8.7	31	28	.90	3.8
JANUARY	27	3.9	20	6.7	.34	2.3
FEBRUARY	75	4.5	25	22	.86	3.0
MARCH	71	9.0	31	15	.50	3.7
APRIL	258	44	117	57	.48	14.1
MAY	283	161	237	37	.16	28.4
JUNE	339	97	210	71	.34	25.2
JULY	139	25	68	28	.42	8.1
AUGUST	35	8.6	21	8.4	.40	2.5
SEPTEMBER	57	7.8	18	14	.75	2.2
ANNUAL	85	44	70	12	.17	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1938-43, 1962-69

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NONEXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	6.7	5.2	4.6	4.2	-----	-----
3	7.1	5.4	4.7	4.3	-----	-----
7	7.6	5.8	5.0	4.6	-----	-----
14	8.2	6.4	5.7	5.2	-----	-----
30	9.9	7.6	6.7	6.1	-----	-----
60	12	8.9	7.6	6.8	-----	-----
90	14	11	9.2	8.2	-----	-----
120	18	13	11	9.3	-----	-----
183	21	15	13	11	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1933-74

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
337	578	892	1110	1430	1670	1900

WEIGHTED SKEW = 0.146

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1937-43, 1961-69

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	466	668	893	1330	-----	-----
3	396	516	633	831	-----	-----
7	362	448	505	578	-----	-----
15	316	385	428	479	-----	-----
30	290	343	372	403	-----	-----
60	238	281	304	327	-----	-----
90	198	228	241	254	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1937-43, 1961-69

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
429	280	202	145	111	62	40	29	22	17	14	9.7	7.3	5.6	4.8	4.4	3.4

KOOTENAI RIVER BASIN

12303000 KOOTENAI RIVER AT LIBBY, MT

LOCATION.--Lat 48°24'03", long 115°33'08", in SW¼SE¼SW¼ sec.34, T.31 N., R.31 W., Lincoln County, Hydrologic Unit 17010101, on right bank 1,800 ft (550 m) downstream from highway bridge at Libby, 0.8 mi (1.3 km) downstream from Libby Creek, and at mile 204.3 (328.7 km).

DRAINAGE AREA.--10,240 mi^2 (26,520 km^2), approximately.

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1042: 1933. WSP 1246: 1912(M), 1915(M), 1916, 1918-19(M), 1924-27(M).

GAGE.--Water-stage recorder. Datum of gage is 2,041.54 ft (622.261 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 28, 1931, nonrecording gages at site 1,800 ft (550 m) upstream at different datum.

REMARKS.--Flow regulated by Lake Koocanusa since Mar. 21, 1972. Diversions for irrigation of about 14,500 acres (58.7 km^2) from tributaries above station in Canada and the United States.

AVERAGE DISCHARGE.--69 years, 12,140 ft^3/s (343.8 m^3/s), 16.10 in/yr (409 mm/yr), 9,795,000 acre-ft/yr (10.8 km^3/yr), adjusted for change in contents in Lake Koocanusa since Mar. 21, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 121,000 ft^3/s (3,340 m^3/s) June 21, 1916, gage height, 20.7 ft (6.31 m), present datum, derived from gage-relation study; minimum observed, 895 ft^3/s (25.3 m^3/s) Jan. 11, 1930 (result of discharge measurement).

MONTHLY AND ANNUAL MEAN DISCHARGES 1911-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	32300	3180	7230	4590	0.64	5.0
NOVEMBER	25000	2410	6300	4330	.69	4.4
DECEMBER	20400	2270	4750	3560	.75	3.3
JANUARY	26000	1760	4390	3910	.89	3.0
FEBRUARY	21700	1730	4320	3530	.82	3.0
MARCH	13700	2420	4390	2160	.49	3.0
APRIL	31100	3470	10000	4850	.48	7.0
MAY	49100	3910	27900	11000	.39	19.3
JUNE	68200	4250	36900	15100	.41	25.6
JULY	45800	3830	20600	8350	.40	14.3
AUGUST	19300	3170	9800	2650	.27	6.8
SEPTEMBER	21100	4150	7570	3160	.42	5.2
ANNUAL	16600	6510	12000	2470	.21	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1912-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	2060	1640	1460	1320	1180	1100
3	2140	1700	1510	1370	1240	1160
7	2280	1820	1640	1500	1370	1300
14	2510	2050	1860	1740	1610	1540
30	2700	2290	2170	2100	2040	2020
60	2910	2500	2390	2340	2280	2300
90	3140	2660	2530	2460	2410	2400
120	3370	2810	2660	2590	2530	2520
183	4190	3350	3090	2940	2820	2760

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
--	--	--	--	--	--	--

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1911-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	59300	78600	88800	99400	106000	112000
3	57300	76500	86600	97000	103000	109000
7	52800	70600	80200	90400	96800	102000
15	47500	63400	72000	81200	87000	92100
30	42400	55400	62300	69500	74000	78000
60	35900	45300	50000	54600	57300	59500
90	30100	37400	41000	44500	46600	48300

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1911-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
64700	41800	30300	23000	18300	11900	8410	6290	5080	4240	3520	2840	2510	2190	1950	1730	1350

12303000 KOOTENAI RIVER AT LIBBY, MT--Continued

PERIOD OF RECORD.--1911-70.

REMARKS.--Data below based on period of record prior to regulation by Libby Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1911-70

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	13700	3180	6190	2280	0.37	4.3
NOVEMBER	9630	2410	5090	1670	.33	3.5
DECEMBER	11500	2270	3960	1520	.38	2.7
JANUARY	7760	1760	3340	1040	.31	2.3
FEBRUARY	7340	1730	3380	1030	.30	2.3
MARCH	7800	2420	3860	1080	.28	2.7
APRIL	31100	3470	10400	4970	.48	7.2
MAY	49100	15200	30000	9060	.30	20.7
JUNE	68200	12300	40100	12200	.30	27.7
JULY	45800	9180	21700	7890	.36	15
AUGUST	15500	5110	9690	2230	.23	6.7
SEPTEMBER	15700	4150	6960	2200	.32	4.8
ANNUAL	16600	6510	12100	2540	.21	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1912-70

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	1990	1600	1430	1300	1160	1080
3	2080	1670	1480	1340	1190	1100
7	2250	1820	1610	1460	1290	1190
14	2470	2040	1840	1690	1540	1450
30	2720	2290	2110	1980	1850	1770
60	2920	2480	2310	2190	2090	2020
90	3120	2640	2450	2330	2210	2150
120	3330	2800	2610	2470	2350	2290
183	4050	3350	3070	2880	2700	2590

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1911-71

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
48000	63500	81200	91300	102000	110000	116000

WEIGHTED SKEW = -0.121

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1911-70

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	64000	80600	88800	97000	102000	106000
3	62000	78300	86500	94700	99600	104000
7	57000	72500	80500	88500	93400	97500
15	51100	65100	72300	79500	84000	87700
30	45400	56800	62500	68200	71600	74400
60	38000	46100	49900	53400	55400	56900
90	31700	38100	41000	43700	45300	46500

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1911-70

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
66000	43200	31800	23900	18100	11300	7920	6070	4940	4140	3430	2780	2470	2160	1910	1680	1330

PERIOD OF RECORD.--1973-79.

REMARKS.--Data below based on period of record after completion of Libby Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1973-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	32300	10200	16800	8250	0.49	12.4
NOVEMBER	25000	8210	17300	5090	.29	12.7
DECEMBER	20400	3040	12100	7190	.60	8.9
JANUARY	26000	3550	13800	6900	.50	10.1
FEBRUARY	21700	3380	12200	6990	.57	9.0
MARCH	13700	3660	8620	4010	.46	6.3
APRIL	14400	3890	7400	3720	.50	5.4
MAY	19800	3910	8430	5370	.64	6.2
JUNE	22000	4250	8250	6270	.76	6.1
JULY	18800	3830	10300	5970	.58	7.6
AUGUST	19300	3170	9940	5210	.52	7.3
SEPTEMBER	19400	6930	11000	4220	.38	8.1
ANNUAL	14600	9510	11300	2050	.18	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1974-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	2910	2530	2380	-----	-----	-----
3	3290	2710	2470	-----	-----	-----
7	3640	2820	2480	-----	-----	-----
14	3810	2930	2570	-----	-----	-----
30	4120	2990	2610	-----	-----	-----
60	4840	3620	3260	-----	-----	-----
90	5760	4260	3790	-----	-----	-----
120	7280	5250	4530	-----	-----	-----
183	8800	6970	6330	-----	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
--	--	--	--	--	--	--

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1973-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	29400	35800	39600	-----	-----	-----
3	26000	32700	37500	-----	-----	-----
7	25300	31200	35100	-----	-----	-----
15	23800	28900	32000	-----	-----	-----
30	22500	27300	30400	-----	-----	-----
60	20600	25100	27600	-----	-----	-----
90	19200	21700	22600	-----	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1973-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
32200	24300	21300	19700	18300	15200	12400	9870	7290	5470	4430	3530	3160	2810	2630	2540	2370

12303100 FLOWER CREEK NEAR LIBBY, MT

LOCATION.--Lat 48°20'41", long 115°36'20", in NW¼SE¼SE¼ sec.19, T.30 N., R.31 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, on left bank 30 ft (9 m) downstream from road bridge, 0.3 mi (0.5 km) upstream from South Fork, 1.0 mi (1.6 km) upstream from reservoir, 4.0 mi (6.4 km) southwest of Libby, and 4.5 mi (7.2 km) upstream from mouth.

DRAINAGE AREA.--11.1 mi^2 (28.7 km^2).

PERIOD OF RECORD.--September 1960 to current year.

REVISED RECORDS.--WDR MT-1972: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,866 ft (874 m), from topographic map.

REMARKS.--No known regulation or diversion above station.

AVERAGE DISCHARGE.--19 years, 27.0 ft^3/s (0.765 m^3/s), 33.02 in/yr (839 mm/yr), 19,560 acre-ft/yr (24.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 709 ft^3/s (20.1 m^3/s) Jan. 16, 1974, gage height, 5.53 ft (1.686 m); maximum gage height, 6.10 ft (1.859 m) Jan. 15, 1974 (backwater from ice); minimum discharge, 3.4 ft^3/s (0.096 m^3/s) Feb. 7, 1979; minimum gage height, 1.35 ft (0.411 m) Jan. 11, 1975.

MONTHLY AND ANNUAL MEAN DISCHARGES 1961-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	17	5.8	9.4	3.4	0.36	2.9
NOVEMBER	22	6.8	11	4.9	.43	3.5
DECEMBER	30	5.2	9.8	5.8	.59	3.0
JANUARY	42	4.3	9.4	8.3	.89	2.9
FEBRUARY	25	4.1	9.2	6.0	.65	2.8
MARCH	29	4.4	10	6.2	.61	3.2
APRIL	70	9.4	27	15	.55	8.4
MAY	132	43	88	21	.24	27
JUNE	166	31	99	34	.35	30.6
JULY	56	7.7	32	15	.49	9.8
AUGUST	18	5.7	11	3.4	.31	3.3
SEPTEMBER	20	5.1	8.6	3.1	.36	2.7
ANNUAL	40	13	27	6.5	.24	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1962-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	4.4	4.0	3.8	3.7	-----	-----
3	4.6	4.1	3.9	3.8	-----	-----
7	4.8	4.2	4.0	3.8	-----	-----
14	5.0	4.4	4.1	4.0	-----	-----
30	5.5	4.7	4.4	4.1	-----	-----
60	6.0	5.1	4.7	4.4	-----	-----
90	6.6	5.4	4.9	4.5	-----	-----
120	7.1	5.7	5.1	4.7	-----	-----
183	8.1	6.4	5.8	5.3	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1960-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
147	228	332	402	491	559	628

WEIGHTED SKEW = -0.151

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1961-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	196	248	276	307	-----	-----
3	177	209	222	231	-----	-----
7	158	187	198	207	-----	-----
15	136	167	181	194	-----	-----
30	123	149	160	170	-----	-----
60	99	119	126	132	-----	-----
90	79	95	101	106	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1961-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
178	119	82	55	36	20	14	11	8.8	7.5	6.5	5.5	4.9	4.4	4.2	4.0	3.8

12303500 LAKE CREEK AT TROY, MT

LOCATION.--Lat 48°26'40", long 115°52'30", in SW¼ sec.18, T.31 N., R.33 W., Lincoln County, Hydrologic Unit 17010101, on right bank 0.25 mi (0.40 km) downstream from power plant, 0.5 mi (0.8 km) upstream from mouth, and 1.25 mi (2.01 km) southeast of Troy.

DRAINAGE AREA.--210 mi^2 (544 km^2).

PERIOD OF RECORD.--January 1945 to September 1957.

GAGE.--Water-stage recorder. Altitude of gage is 1,900 ft (579 m), from topographic map. Prior to Nov. 1, 1946, wire-weight gage 0.25 mi (0.40 km) upstream at different datum.

REMARKS.--Some regulation by small dam at power-plant diversion; water diverted returns to stream at power plant above station. Natural regulation by Bull and Spar Lakes.

AVERAGE DISCHARGE.-- 12 years (1945-57), 516 ft^3/s (14.61 m^3/s), 373,600 acre-ft/yr (461 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,250 ft^3/s (92.0 m^3/s) May 30, 1948, gage height, 8.28 ft (2.524 m); minimum 2.0 ft^3/s (0.057 m^3/s), regulated, Sept. 1, 1947, Sept. 15, 1948; minimum daily, 65 ft^3/s (1.84 m^3/s) Jan. 26 to Feb. 7, 1949.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 15, 1974, reached a peak discharge of 7,000 ft^3/s (198 m^3/s) from logarithmic extension of rating curve.

MONTHLY AND ANNUAL MEAN DISCHARGES 1946-57

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	401	108	227	99	0.44	3.7
NOVEMBER	480	93	270	113	.42	4.4
DECEMBER	544	96	301	147	.49	4.9
JANUARY	474	76	254	116	.46	4.1
FEBRUARY	786	111	297	191	.64	4.8
MARCH	552	150	317	126	.40	5.1
APRIL	1020	330	698	210	.30	11.3
MAY	1900	890	1460	323	.22	23.6
JUNE	2120	902	1370	413	.30	22.2
JULY	1010	345	580	229	.39	9.4
AUGUST	339	186	245	51	.21	4.0
SEPTEMBER	215	144	169	21	.13	2.7
ANNUAL	639	414	516	74	.14	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1946-57

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	105	80	67	57	-----	-----
3	117	90	77	67	-----	-----
7	123	94	79	68	-----	-----
14	128	98	83	71	-----	-----
30	139	107	90	77	-----	-----
60	153	118	101	87	-----	-----
90	168	130	113	100	-----	-----
120	189	144	124	110	-----	-----
183	220	168	147	131	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1945-74

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
2110	2660	3400	3900	4500	4950	5430

WEIGHTED SKEW = -0.027

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1946-57

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	2350	2810	3070	-----	-----	-----
3	2250	2730	3010	-----	-----	-----
7	2100	2590	2870	-----	-----	-----
15	1930	2360	2620	-----	-----	-----
30	1750	2090	2280	-----	-----	-----
60	1480	1720	1850	-----	-----	-----
90	1230	1410	1520	-----	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1946-57

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
2430	1670	1320	993	794	522	378	299	246	203	174	146	123	94	80	73	64

KOOTENAI RIVER BASIN

12304500 YAAK RIVER NEAR TROY, MT

LOCATION.--Lat 48°33'43", long 115°58'09", in NE¼SE¼SE¼ sec.5, T.32 N., R.34 W., Lincoln County, Hydrologic Unit 17010103, Kootenai National Forest, on right bank 500 ft (150 m) upstream from bridge on U.S. Highway 2, 0.2 mi (0.3 km) upstream from mouth, and 7.7 mi (12.4 km) northwest of Troy.

DRAINAGE AREA.--766 mi^2 (1,984 km^2).

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 (560.59 m) National Geodetic Vertical Datum of 1929. Oct. 15, 1910, to Sept. 30, 1916, nonrecording gage at several sites within 11 mi (18 km) of present site at various datums.

REMARKS.--Diversions for irrigation of about 30 acres (0.12 km^2) above station.

AVERAGE DISCHARGE.--23 years, 898 ft^3/s (25.43 m^3/s), 15.92 in/yr (404 mm/yr), 650,600 acre-ft/yr (802 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft^3/s (343 m^3/s) May 21, 1956, gage height, 9.70 ft (2.957 m), in gage well, 10.8 ft (3.29 m), from outside gage; minimum daily, 50 ft^3/s (1.42 m^3/s) Dec. 9, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May to June 1948 reached a stage of 11.0 ft (3.35 m) from floodmarks; discharge, 12,500 ft^3/s (354 m^3/s). Flood in May 1954 reached a stage of 11.4 ft (3.47 m) from floodmarks; discharge, 13,400 ft^3/s (379 m^3/s).

MONTHLY AND ANNUAL MEAN DISCHARGES 1957-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	833	123	224	155	0.69	2.1
NOVEMBER	769	149	292	161	.55	2.7
DECEMBER	1300	128	321	278	.86	3.0
JANUARY	1550	98	296	299	1.01	2.8
FEBRUARY	678	120	318	166	.52	3.0
MARCH	1870	140	508	382	.75	4.7
APRIL	3750	634	1810	880	.49	16.8
MAY	5760	1030	3970	1050	.26	37
JUNE	4990	480	2130	1010	.47	19.8
JULY	970	151	501	208	.41	4.7
AUGUST	347	102	198	62	.31	1.8
SEPTEMBER	506	101	178	87	.49	1.7
ANNUAL	1560	278	898	282	.31	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1957-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NONEXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	94	74	65	58	-----	-----
3	100	79	70	63	-----	-----
7	107	85	76	69	-----	-----
14	114	93	85	79	-----	-----
30	126	106	98	92	-----	-----
60	141	118	110	104	-----	-----
90	153	129	121	117	-----	-----
120	166	140	133	129	-----	-----
183	194	156	145	139	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1948-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
5820	7540	9740	11100	12700	13800	14900

WEIGHTED SKEW = -0.159

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1957-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	6900	8300	8750	9030	-----	-----
3	6590	7900	8280	8510	-----	-----
7	6020	7230	7580	7790	-----	-----
15	5210	6240	6540	6730	-----	-----
30	4520	5370	5610	5750	-----	-----
60	3530	4290	4530	4690	-----	-----
90	2820	3480	3710	3880	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1957-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
6490	4140	2830	1850	1270	632	397	290	228	189	160	133	114	98	88	82	68

12323500 GERMAN GULCH CREEK NEAR RAMSAY, MT

LOCATION.--Lat 46°00'57", long 112°47'30", in SE¼NW¼ sec.13, T.3 N., R.10 W., Silver Bow County, Hydrologic Unit 17010201, on left bank 0.5 mi (0.8 km) upstream from mouth and 5.2 mi (8.4 km) west of Ramsay.

DRAINAGE AREA.--40.6 mi^2 (105.2 km^2).

PERIOD OF RECORD.--April 1955 to September 1969. Monthly discharge for some periods, published in WSP 1736.

REVISED RECORD.--WSP 1736: 1955-56. WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,200 ft (1,585 m), by barometer. Prior to July 13, 1956, nonrecording gage at site 300 ft (91 m) upstream from mouth at different datum.

REMARKS.--Some small diversions for irrigation of hay meadows above station.

AVERAGE DISCHARGE.--14 years, 20.9 ft^3/s (0.592 m^3/s), 15,140 acre-ft per year (18.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 450 ft^3/s (12.7 m^3/s) June 17, 1965, gage height, 3.67 ft (1.119 m); minimum, 2.6 ft^3/s (0.074 m^3/s) Mar 15, 1959, gage height, 1.53 ft (0.466 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 19, 1975, reached a discharge of 692 ft^3/s (19.5 m^3/s) from logarithmic extension of rating curve.

MONTHLY AND ANNUAL MEAN DISCHARGES 1956-69

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	13	6.8	9.2	2.0	0.22	3.7
NOVEMBER	11	5.7	8.0	1.4	.18	3.2
DECEMBER	10	4.7	7.3	1.6	.22	2.9
JANUARY	8.4	4.2	6.3	1.3	.20	2.5
FEBRUARY	11	3.9	6.6	1.9	.29	2.6
MARCH	15	5.0	8.1	2.8	.34	3.2
APRIL	39	9.1	18	8.0	.44	7.2
MAY	108	40	67	23	.34	26.8
JUNE	154	27	76	37	.49	30.4
JULY	41	9.3	23	9.4	.41	9.1
AUGUST	16	6.3	11	2.9	.26	4.4
SEPTEMBER	16	7.5	9.6	2.2	.23	3.8
ANNUAL	30	13	21	5.2	.25	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1956-69

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	3.7	3.1	2.9	2.7	-----	-----
3	4.1	3.5	3.1	2.9	-----	-----
7	4.7	4.1	3.7	3.4	-----	-----
14	5.3	4.6	4.2	4.0	-----	-----
30	5.6	4.9	4.5	4.2	-----	-----
60	6.0	5.1	4.6	4.3	-----	-----
90	6.4	5.4	4.9	4.5	-----	-----
120	6.7	5.6	5.1	4.7	-----	-----
183	7.3	6.3	5.8	5.4	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1955-75

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
117	183	288	361	462	541	635

WEIGHTED SKEW = -0.143

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1956-69

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	152	209	245	287	-----	-----
3	141	187	213	242	-----	-----
7	129	169	190	214	-----	-----
15	117	152	171	191	-----	-----
30	96	128	147	170	-----	-----
60	71	94	108	124	-----	-----
90	56	73	83	95	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1956-69

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
159	86	55	37	25	15	11	9.2	8.2	7.3	6.4	5.6	5.0	4.3	3.9	3.6	2.9

12324100 RACETRACK CREEK BELOW GRANITE CREEK, NEAR ANACONDA, MT

LOCATION.--Lat 46°16'44", long 112°55'07", near center of NW¼NE¼ sec.13, T.6 N., R.11 W., Powell County, Hydrologic Unit 17010201, Deer Lodge National Forest, on right bank 30 ft (9 m) upstream from bridge, 1.6 mi (2.6 km) downstream from Granite Creek, 9.5 mi (15.3 km) upstream from mouth, and 10.3 mi (16.6 km) north of Anaconda.

DRAINAGE AREA.--39.5 mi^2 (102.3 km^2).

PERIOD OF RECORD.--April 1914 to September 1917 (gage heights only, published as "near Anaconda"). July 1957 to September 1973. Records for July 1911 to November 1912 at site 3 mi (5 km) upstream, published as "near Anaconda" not equivalent owing to inflow.

REVISED RECORD.--WSP 1316: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,420 ft (1,652 m), from topographic map. Prior to September 1917, nonrecording gage at site 0.3 mi (0.5 km) downstream at different datum.

REMARKS.--Some regulation by Racetrack and Fisher Lakes.

AVERAGE DISCHARGE.--16 years, 59.1 ft^3/s (1.674 m^3/s), 20.32 in/yr (516 mm/yr), 42,820 acre-ft (52.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 537 ft^3/s (15.2 m^3/s) June 17, 1965, gage height, 5.74 ft (1.750 m); minimum, 6.2 ft^3/s (0.18 m^3/s) Mar. 19, 1970, gage height, 1.65 ft (0.503 m), result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 19, 1975, reached a discharge of 580 ft^3/s (16.4 m^3/s) from logarithmic extension of rating curve.

MONTHLY AND ANNUAL MEAN DISCHARGES 1958-73

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	56	25	33	9.5	0.29	4.7
NOVEMBER	37	18	25	5.5	.22	3.6
DECEMBER	30	16	22	3.9	.18	3.0
JANUARY	26	16	20	3.0	.15	2.9
FEBRUARY	24	17	20	2.1	.11	2.8
MARCH	26	16	20	2.9	.15	2.8
APRIL	42	18	26	7.3	.28	3.7
MAY	168	67	101	30	.29	14.3
JUNE	340	94	221	68	.31	31.2
JULY	167	60	105	30	.28	14.9
AUGUST	98	35	70	18	.25	9.9
SEPTEMBER	78	28	44	12	.27	6.2
ANNUAL	79	37	59	11	.18	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1959-73

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	13	10	8.8	7.9	-----	-----
3	14	12	11	9.5	-----	-----
7	17	14	13	12	-----	-----
14	17	16	15	15	-----	-----
30	19	17	16	16	-----	-----
60	20	18	17	16	-----	-----
90	20	18	18	17	-----	-----
120	20	19	18	17	-----	-----
183	23	20	19	19	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1958-75

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
267	356	485	572	684	771	874

WEIGHTED SKEW = -0.077

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1958-73

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	324	413	463	516	-----	-----
3	303	386	430	477	-----	-----
7	285	358	395	433	-----	-----
15	262	326	357	387	-----	-----
30	235	290	316	340	-----	-----
60	179	220	241	262	-----	-----
90	149	180	196	212	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1958-73

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
327	219	140	104	87	58	39	29	25	22	20	18	17	16	15	13	10

12325500 FLINT CREEK NEAR SOUTHERN CROSS, MT

LOCATION.--Lat 46°14'02", long 113°17'43", in SE¼NW¼ sec.36, T.6 N., R.14 W., Granite County, Hydrologic Unit 17010202, on left wing of weir 0.5 mi (0.8 km) downstream from powerplant, 2.0 mi (3.2 km) downstream from Georgetown Dam, 3.5 mi (5.6 km) northwest of Southern Cross, 6.8 mi (10.9 km) south of Philipsburg, and at mile 36.8 (59.2 km).

DRAINAGE AREA.--52.6 mi^2 (136.2 km^2).

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 1216: 1942(M). WSP 1246: Drainage area.

GAGE.--Nonrecording gage and sharp-crested, contracted, rectangular weir. Altitude of gage is 5,630 ft (1,720 m), from topographic map. Prior to Nov. 27, 1973, gage at same site and datum 0.20 ft (0.061 m) higher.

REMARKS.--Flow regulated by Georgetown Lake. Flow may be augumented by transbasin diversion from Silver Lake to Georgetown Lake or reduced by pumping from Georgetown Lake to Silver Lake.

COOPERATION.--Gage-height record furnished by The Montana Power Company under general supervision of Geological Survey in connection with a Federal Power Commission project.

AVERAGE DISCHARGE.--39 years, 28.6 ft^3/s (0.810 m^3/s), 20,720 acre-ft/yr (25.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 174 ft^3/s (4.93 m^3/s) June 13, 1942, gage height, 1.86 ft (0.567 m); maximum gage height observed, 2.58 ft (0.786 m) July 6, 1975; probably no flow for parts of May 23, 1942, Aug. 20, 1943, Oct. 6, 1954, Nov. 29, Dec. 1, 1966, and no flow Nov. 30, 1966, when generator was shut down.

MONTHLY AND ANNUAL MEAN DISCHARGES 1941-45, 1947-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	58	3.9	25	11	0.43	7.3
NOVEMBER	41	3.9	22	11	.50	6.4
DECEMBER	50	2.7	21	12	.57	6.1
JANUARY	35	2.9	19	11	.58	5.4
FEBRUARY	54	3.4	19	13	.66	5.6
MARCH	80	4.1	22	18	.85	6.3
APRIL	121	1.6	26	27	1.04	7.7
MAY	106	7.8	28	20	.71	8.3
JUNE	142	26	52	30	.57	15.2
JULY	131	27	47	22	.47	13.6
AUGUST	79	22	33	9.9	.30	9.6
SEPTEMBER	45	15	30	6.1	.21	8.6
ANNUAL	58	13	29	11	.38	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1942-46, 1948-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	8.0	4.1	2.7	2.0	1.5	-----
3	8.3	4.3	3.0	2.2	1.6	-----
7	8.7	4.6	3.3	2.4	1.7	-----
14	9.0	4.7	3.3	2.4	1.7	-----
30	9.4	4.9	3.5	2.6	1.8	-----
60	11	6.0	4.3	3.3	2.4	-----
90	14	7.2	4.9	3.5	2.4	-----
120	15	8.0	5.5	3.9	2.6	-----
183	18	10	7.3	5.4	3.7	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1941-45, 1947-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	75	129	170	226	272	-----
3	73	124	164	219	263	-----
7	68	114	150	202	244	-----
15	61	103	135	183	224	-----
30	55	90	117	158	192	-----
60	48	71	90	116	138	-----
90	43	62	76	97	115	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1941-45, 1947-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
133	74	45	38	34	32	31	29	27	17	13	6.4	4.7	3.7	2.8	2.3	1.4

12329500 FLINT CREEK AT MAXVILLE, MT

LOCATION.--Lat 46°27'54", long 113°14'20", in NW¼ sec.9, T.8 N., R.13 W., Granite County, Hydrologic Unit 17010202, on right bank 0.4 mi (0.6 km) west of Maxville and 1.0 mi (1.6 km) upstream from Boulder Creek.

DRAINAGE AREA.--208 mi^2 (539 km^2).

PERIOD OF RECORD.--August 1941 to current year. April 1939 to September 1941 at site 0.5 mi (0.8 km) upstream (above Maxville siding); records not equivalent owing to diversions.

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,828.38 ft (1,471.690 m) National Geodetic Vertical Datum of 1929.

REMARKS.-Some regulation by Georgetown Lake. Diversions for irrigation of about 8,200 acres (33.2 km^2) above 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 (152 m) below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek.

AVERAGE DISCHARGE.--38 years, 99.3 ft^3/s (2.813 m^3/s), 71,940 acre-ft/yr (88.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,680 ft^3/s (47.6 m^3/s) Mar. 28, 1943, gage height, 6.79 ft (2.070 m), from rating curve extended above 600 ft^3/s (17.0 m^3/s); maximum gage height, 8.08 ft (2.463 m) Feb. 4, 1963 (backwater from ice); minimum daily discharge, 15 ft^3/s (0.42 m^3/s) Feb. 25, 1962.

MONTHLY AND ANNUAL MEAN DISCHARGES 1942-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	148	52	86	20	0.23	7.2
NOVEMBER	105	44	73	16	.22	6.1
DECEMBER	120	33	62	18	.28	5.2
JANUARY	88	27	54	15	.28	4.6
FEBRUARY	116	29	60	19	.31	5.0
MARCH	186	34	76	29	.38	6.4
APRIL	310	49	113	64	.57	9.5
MAY	353	71	144	62	.43	12.1
JUNE	455	88	191	85	.44	16.1
JULY	324	48	126	52	.41	10.6
AUGUST	217	37	110	30	.28	9.2
SEPTEMBER	147	56	94	27	.29	7.9
ANNUAL	165	63	99	24	.24	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1943-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	32	24	21	18	16	-----
3	34	26	22	19	16	-----
7	37	29	25	22	20	-----
14	40	31	28	25	22	-----
30	46	36	32	29	25	-----
60	51	40	35	31	27	-----
90	55	43	38	34	29	-----
120	58	46	40	36	31	-----
183	65	54	48	44	39	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
--	--	--	--	--	--	--

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1942-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	363	516	623	763	872	-----
3	307	440	536	668	774	-----
7	265	369	442	539	615	-----
15	232	320	379	456	514	-----
30	199	278	334	410	469	-----
60	170	233	278	337	382	-----
90	153	208	248	301	343	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1942-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
367	228	174	145	129	107	92	82	73	65	56	46	38	32	28	26	20

12330000 BOULDER CREEK AT MAXVILLE, MT

LOCATION.--Lat 46°28'20", long 113°13'59", in SW¼ sec.4, T.8 N., R.13 W., Granite County, Hydrologic Unit 17010202, on right bank 0.2 mi (0.3 km) upstream from mouth and 0.7 mi (1.1 km) north of Maxville.

DRAINAGE AREA.--71.3 mi^2 (184.7 km^2).

PERIOD OF RECORD.--April 1939 to current year. Monthly discharge only for some periods, published in WSP 1316.

GAGE.--Water-stage recorder. Altitude of gage is 4,750 ft (1,448 m), from topographic map. Apr. 15, 1939, to July 7, 1941, nonrecording gage at site 75 ft (23 m) upstream at different datum. July 8-20, 1941, nonrecording gage at site 175 ft (53 m) upstream at datum 1.03 ft (0.314 m) higher.

REMARKS.-Diversions for irrigation of about 238 acres (960,000 m^2), all of which lies below station.

AVERAGE DISCHARGE.--40 years, 47.5 ft^3/s (1.345 m^3/s), 34,410 acre-ft/yr (42.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,460 ft^3/s (41.3 m^3/s) June 19, 1975, gage height, 4.55 ft (1.387 m) in gage well, 4.80 ft (1.463 m), from floodmarks; minimum, 3.0 ft^3/s (0.085 m^3/s) about Mar. 24, 1964, gage height, 0.73 ft (0.223 m), result of freezeup.

MONTHLY AND ANNUAL MEAN DISCHARGES 1940-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	51	12	24	9.2	0.37	4.3
NOVEMBER	45	12	24	6.1	.26	4.2
DECEMBER	39	11	21	5.0	.23	3.8
JANUARY	32	10	19	3.9	.21	3.3
FEBRUARY	31	10	19	3.8	.20	3.3
MARCH	29	14	18	2.8	.15	3.2
APRIL	56	15	29	11	.37	5.1
MAY	261	55	118	47	.39	20.8
JUNE	376	51	190	80	.42	33.4
JULY	244	16	65	42	.64	11.4
AUGUST	68	8.2	22	12	.54	3.9
SEPTEMBER	54	6.7	19	10	.55	3.3
ANNUAL	82	27	48	13	.26	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1941-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	8.6	6.2	5.2	4.5	3.8	-----
3	9.0	6.5	5.5	4.8	4.1	-----
7	9.6	6.9	5.9	5.1	4.3	-----
14	11	7.8	6.6	5.7	4.9	-----
30	13	9.6	8.2	7.2	6.2	-----
60	15	12	10	9.2	8.0	-----
90	17	14	13	12	10	-----
120	18	15	14	13	12	-----
183	19	16	15	14	14	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1940-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
254	376	558	687	857	991	1130

WEIGHTED SKEW = -0.015

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1940-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	332	479	580	711	812	-----
3	314	435	507	589	645	-----
7	283	385	442	502	541	-----
15	249	337	386	438	471	-----
30	214	287	328	371	398	-----
60	162	214	243	274	295	-----
90	125	163	184	207	222	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1940-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
346	197	122	77	54	32	26	23	21	19	17	14	11	8.5	7.2	6.1	5.0

12332000 MIDDLE FORK ROCK CREEK NEAR PHILIPSBURG, MT

LOCATION.--Lat 46°11'42", long 113°30'00", in SW¼SE¼ sec.8, T.5 N., R.15 W., Granite County, Hydrologic Unit 17010202, on right bank 0.3 mi (0.5 km) upstream from East Fork, 2.3 mi (3.7 km) upstream from West Fork, and 13.7 mi (22.0 km) southwest of Philipsburg.

DRAINAGE AREA.--123 mi^2 (319 km^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 5,385.84 ft (1,641.604 m) National Geodetic Vertical Datum of 1929. Sept. 21, 1937, to May 10, 1942, nonrecording gage at site 600 ft (183 m) upstream at different datum. May 11, 1942, to May 11, 1954, nonrecording gages at site 400 ft (122 m) downstream at different datum. May 12, 1954, to Sept. 30, 1955, nonrecording gage at site 300 ft (91 m) upstream at datum 5.74 ft (1.750 m) higher.

REMARKS.-A few small diversions for irrigation above station.

AVERAGE DISCHARGE.--42 years, 123 ft^3/s (3.483 m^3/s), 13.58 in/yr (345 mm/yr), 89,110 acre-ft/yr (110 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,680 ft^3/s (47.6 m^3/s) June 16, 1974, gage height, 5.58 ft (1.701 m); minimum daily, 5.3 ft^3/s (0.15 m^3/s) Feb. 9, 1953.

MONTHLY AND ANNUAL MEAN DISCHARGES 1938-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	201	33	52	26	0.51	3.5
NOVEMBER	104	29	44	14	.32	3.0
DECEMBER	64	24	36	9.8	.27	2.5
JANUARY	61	22	31	8.5	.27	2.1
FEBRUARY	55	17	32	8.3	.26	2.2
MARCH	64	23	36	9.5	.27	2.4
APRIL	190	28	74	37	.51	5.0
MAY	650	137	346	134	.39	23.4
JUNE	914	159	513	192	.37	34.7
JULY	496	49	191	88	.46	12.9
AUGUST	141	26	72	23	.31	4.9
SEPTEMBER	99	31	52	14	.27	3.5
ANNUAL	174	62	123	30	.25	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1939-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	15	10	8.3	6.9	5.6	4.8
3	17	12	11	9.2	7.9	7.1
7	19	16	14	13	11	10
14	22	18	17	15	14	13
30	25	21	20	19	17	17
60	28	24	23	21	20	20
90	29	26	24	23	22	22
120	31	27	26	25	24	23
183	35	31	30	30	29	29

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1938-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
654	907	1230	1430	1670	1840	2010

WEIGHTED SKEW = -0.319

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1938-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	886	1170	1320	1470	1560	1640
3	835	1110	1250	1400	1490	1570
7	765	1010	1150	1290	1380	1460
15	676	894	1010	1130	1210	1280
30	589	763	855	949	1010	1060
60	458	580	641	702	737	767
90	358	451	496	541	567	589

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1938-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
871	542	351	234	159	82	59	48	42	37	33	27	23	18	16	14	9.9

12335000 BLACKFOOT RIVER NEAR HELMVILLE, MT

LOCATION.--Lat 46°56'10", long 112°56'30", in NW¼SW¼ sec.25, T.14 N., R.11 W., Powell County, Hydrologic Unit 17010203, on right bank 50 ft (15 m) downstream from highway bridge 2 mi (3 km) downstream from Arrastre Creek, and 5 mi (8 km) northeast of Helmville.

DRAINAGE AREA.--481 mi^2 (1,246 km^2).

PERIOD OF RECORD.--September 1940 to October 1953.

GAGE.--Water-stage recorder. Datum of gage is 4,301.29 ft (1,311.033 m) National Geodetic Vertical datum of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Flow includes natural overflow channel on left bank, but does not include unnamed diversions past station. Diversions above station for irrigation of about 2,000 acres (8.09 km^2), of which 500 acres (2.02 km^2) lie below the station.

AVERAGE DISCHARGE.--13 years (1940-53), 352 ft^3/s (9.969 m^3/s), 254,800 acre-ft/yr (314 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,040 ft^3/s (171 m^3/s) June 5, 1953, gage height, 9.10 ft (2.774 m); minimum daily discharge, 50 ft^3/s (1.42 m^3/s) Jan. 3, 1950.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 9, 1964, reached a discharge of about 9,500 ft^3/s (269 m^3/s); flood of June 20, 1975, reached a dishcarge of about 7,600 ft^3/s (215 m^3/s).

MONTHLY AND ANNUAL MEAN DISCHARGES 1941-53

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	212	111	158	34	0.22	3.7
NOVEMBER	191	104	149	29	.19	3.5
DECEMBER	180	84	132	28	.21	3.1
JANUARY	156	63	119	25	.21	2.8
FEBRUARY	168	85	121	26	.21	2.9
MARCH	212	96	125	31	.25	3.0
APRIL	604	92	271	168	.62	6.4
MAY	1870	84	970	550	.57	23
JUNE	2730	267	1260	703	.56	30
JULY	904	135	500	243	.49	11.9
AUGUST	338	108	235	73	.31	5.6
SEPTEMBER	236	115	173	35	.20	4.1
ANNUAL	512	116	352	124	.35	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1942-53

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	101	79	67	57	-----	-----
3	103	81	69	60	-----	-----
7	107	84	72	62	-----	-----
14	109	87	76	66	-----	-----
30	114	91	79	69	-----	-----
60	119	96	83	73	-----	-----
90	121	101	91	83	-----	-----
120	125	106	96	88	-----	-----
183	136	116	106	98	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1941-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1330	2020	3550	4800	6720	8470	10600

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1941-53

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	2110	3350	4080	4860	-----	-----
3	2030	3210	3880	4610	-----	-----
7	1890	2900	3440	3970	-----	-----
15	1730	2620	3060	3470	-----	-----
30	1510	2230	2550	2820	-----	-----
60	1210	1730	1930	2090	-----	-----
90	959	1370	1530	1660	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1941-53

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
2550	1440	925	599	415	235	186	162	146	131	117	103	93	82	72	64	58

12335500 NEVADA CREEK ABOVE RESERVOIR, NEAR FINN, MT

LOCATION.--Lat 46°46'42", long 112°46'00", SW¼NW¼SW¼ sec.20, T.12 N., R.9 W., Powell County, Hydrologic Unit 17010203, on right bank 0.7 mi (1.1 km) upstream from Nevada Lake, 1.1 mi (1.8 km) downstream from Gallagher Creek, and 4.0 mi (6.4 km) west of Finn.

DRAINAGE AREA.--116 mi^2 (300 km^2).

PERIOD OF RECORD.--April 1939 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,660 ft (1,420 m), from topographic map. Prior to Apr. 30, 1942, nonrecording gage at site 1.0 mi (1.6 km) downstream at different datum. Apr. 30, 1942, to July 26, 1953, water-stage recorder at site 0.2 mi (0.3 km) downstream at different datum. July 26, 1953, to Nov. 6, 1978, water-stage recorder at site 0.8 mi (1.3 km) upstream at different datum.

REMARKS.--Diversions for irrigation of about 2,900 acres (11.7 km^2) above station.

AVERAGE DISCHARGE.--40 years, 38.3 ft^3/s (1.085 m^3/s), 27,750 acre-ft/yr (34.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft^3/s (51.0 m^3/s) June 2, 1953, gage height, 6.00 ft (1.829 m), site and datum then in use, from rating curve extended above 400 ft^3/s (11.3 m^3/s) on basis of inflow-outflow study of Nevada Lake; maximum gage height, 7.40 ft (2.256 m) May 29, 1953, site and datum then in use (backwater from diversion dam); minimum discharge, probably less than 2.0 ft^3/s (0.057 m^3/s) at times in 1944, 1957, 1972, and 1973.

MONTHLY AND ANNUAL MEAN DISCHARGES 1940-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	32	5.5	14	5.9	0.42	3.1
NOVEMBER	29	6.5	15	4.3	.29	3.2
DECEMBER	47	5.0	13	6.9	.55	2.8
JANUARY	41	3.9	11	7.6	.69	2.4
FEBRUARY	76	4.2	14	12	.84	3.0
MARCH	114	7.6	35	28	.82	7.5
APRIL	196	10	75	48	.63	16.4
MAY	356	16	127	70	.55	27.7
JUNE	429	12	102	80	.78	22.3
JULY	97	8.3	28	19	.68	6.1
AUGUST	41	3.9	15	7.4	.51	3.2
SEPTEMBER	28	3.7	11	5.4	.51	2.3
ANNUAL	77	12	38	14	.37	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1941-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NONEXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	4.0	2.8	2.4	2.1	1.8	-----
3	4.5	3.1	2.6	2.2	1.9	-----
7	5.1	3.6	2.9	2.5	2.1	-----
14	5.8	4.1	3.4	2.9	2.5	-----
30	6.6	4.8	4.1	3.6	3.1	-----
60	7.7	5.6	4.8	4.2	3.6	-----
90	9.0	6.6	5.7	4.9	4.2	-----
120	9.8	7.6	6.7	6.0	5.4	-----
183	11	8.6	7.6	6.8	6.1	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1940-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
274	504	910	1230	1690	2070	2460

WEIGHTED SKEW = -0.056

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1940-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	366	566	698	863	983	-----
3	324	486	573	660	712	-----
7	262	388	454	518	556	-----
15	203	304	356	406	434	-----
30	159	246	295	346	377	-----
60	125	187	218	248	265	-----
90	106	154	178	200	213	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1940-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
329	160	101	68	48	26	19	16	13	11	8.8	6.3	5.0	4.1	3.5	3.0	2.1

12338500 BLACKFOOT RIVER NEAR OVANDO, MT

LOCATION.--Lat 47°01'10", long 113°13'40", in SE¼NW¼ sec.34, T.15 N., R.13 W., Powell County, Hydrologic Unit 17010203, on left bank 0.25 mi (0.40 km) upstream from Monture Creek and 5 mi (8 km) west of Ovando.

DRAINAGE AREA.--1,274 mi^2 (3,300 km^2).

PERIOD OF RECORD.--September 1940 to September 1963. Monthly discharge only for September 1940, published in WSP 1316.

REVISED RECORD.--WSP 1216: Drainage area. WSP 1246: 1941.

GAGE.--Water-stage recorder. Datum of gage is 3,917.27 ft (1,193.984 m) National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Diversions for irrigation of about 15,000 acres (60.7 km^2) above station.

AVERAGE DISCHARGE.--23 years, 855 ft^3/s (24.21 m^3/s), 619,000 acre-ft/yr (763 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft^3/s (413 m^3/s) June 4, 1953, gage height, 8.45 ft (2.576 m); minimum daily discharge, 100 ft^3/s (2.83 m^3/s) Jan. 20, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 9, 1964, reached a discharge of 17,600 ft^3/s (498 m^3/s); flood of June 20, 1975, reached a discharge of 15,500 ft^3/s (439 m^3/s).

MONTHLY AND ANNUAL MEAN DISCHARGES 1941-63

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	785	259	395	116	0.29	3.9
NOVEMBER	760	255	377	109	.29	3.7
DECEMBER	573	225	324	86	.27	3.2
JANUARY	364	195	274	54	.20	2.7
FEBRUARY	514	216	287	70	.24	2.8
MARCH	671	227	341	103	.30	3.3
APRIL	1710	222	721	397	.55	7.0
MAY	4370	426	2460	1050	.43	24
JUNE	6600	738	3000	1330	.44	29.3
JULY	2170	371	1140	527	.46	11.1
AUGUST	837	254	526	148	.28	5.1
SEPTEMBER	585	262	402	80	.20	3.9
ANNUAL	1230	315	855	239	.28	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1942-63

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	180	143	125	112	-----	-----
3	187	152	137	126	-----	-----
7	205	169	153	141	-----	-----
14	218	185	172	162	-----	-----
30	240	210	197	188	-----	-----
60	258	227	213	204	-----	-----
90	272	239	226	216	-----	-----
120	284	250	237	228	-----	-----
183	314	274	259	250	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1941-75

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
3600	5280	8260	10500	13500	15800	18400

WEIGHTED SKEW = 0.125

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1941-63

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	5230	7290	8330	9350	-----	-----
3	5090	7030	7980	8870	-----	-----
7	4760	6490	7290	8020	-----	-----
15	4310	5880	6590	7210	-----	-----
30	3810	4980	5420	5740	-----	-----
60	3000	3830	4120	4320	-----	-----
90	2360	3020	3270	3450	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1941-63

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
5640	3410	2270	1440	1060	615	475	404	355	317	283	249	224	198	182	167	136

12340000 BLACKFOOT RIVER NEAR BONNER, MT

LOCATION.--Lat 46°53'59", long 113°45'20", in SE¼SE¼NW¼ sec.9, T.13 N., R.17 W., Missoula County, Hydrologic Unit 17010203, Lolo National Forest, on right bank 5.0 mi (8.0 km) downstream from Union Creek, 5.6 mi (9.0 km) northeast of Bonner, and 7.3 mi (11.7 km) upstream from mouth.

DRAINAGE AREA.--2,290 mi^2 (5,931 km^2).

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 (1,019.483 m) National Geodetic Vertical Datum of 1929. July 7, 1898, to June 30, 1901, and May 15, 1903, to Oct. 31, 1905, nonrecording gage at site 7 mi (11 km) downstream at different datum. Oct. 4, 1939, to Sept. 30, 1955, nonrecording gage at site 1.3 mi (2.1 km) downstream at datum 21.92 ft (6.651 m) lower.

REMARKS.-Diversions for irrigation of about 20,000 acres (80.9 km^2) above station.

AVERAGE DISCHARGE.--43 years (water years 1900-01, 1904, 1940-79), 1,653 ft^3/s (46.82 m^3/s), 9.80 in/yr (249 mm/yr) 1,198,000 acre-ft/yr (1.48 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft^3/s (544 m^3/s) June 10, 1964, gage height, 10.89 ft (3.319 m); minimum daily, 200 ft^3/s (5.66 m^3/s) Jan. 4, 5, 1950.

MONTHLY AND ANNUAL MEAN DISCHARGES 1900-01, 1904, 1940-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	1550	411	681	220	0.32	3.4
NOVEMBER	1480	424	666	206	.31	3.4
DECEMBER	1440	342	628	219	.35	3.2
JANUARY	1070	352	561	147	.26	2.8
FEBRUARY	1670	369	602	218	.36	3.0
MARCH	1830	461	750	286	.38	3.8
APRIL	4730	537	2030	1080	.53	10.3
MAY	9580	1100	5260	2000	.38	26.5
JUNE	10500	1170	5210	2340	.45	26.3
JULY	4110	533	1900	835	.44	9.6
AUGUST	1460	390	855	242	.28	4.3
SEPTEMBER	1110	375	675	162	.24	3.4
ANNUAL	2480	558	1650	464	.28	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1900-01, 1941-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	342	275	244	219	194	178
3	365	295	261	234	206	188
7	404	331	296	268	239	220
14	439	364	327	299	268	249
30	476	409	380	359	339	326
60	506	434	404	383	362	350
90	528	452	421	399	378	366
120	543	463	433	412	394	383
183	582	489	453	427	404	390

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1899-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
5930	9340	13900	16700	20100	22400	24500

WEIGHTED SKEW = -0.432

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1900-01, 1904, 1940-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	9560	13200	14800	16300	17100	17700
3	9280	12600	14000	15200	15800	16300
7	8670	11600	12800	13800	14300	14700
15	7800	10500	11600	12500	12900	13200
30	6920	9180	10100	10800	11100	11300
60	5590	7240	7870	8350	8570	8710
90	4550	5870	6380	6770	6940	7060

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1900-01, 1904, 1940-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
10200	6480	4490	3180	2210	1220	909	748	661	594	532	462	416	378	327	287	238

12340500 CLARK FORK ABOVE MISSOULA, MT

LOCATION.--Lat 46°52'38", long 113°55'53", in NW¼NW¼NW¼ sec.19, T.13 N., R.18 W., Missoula County, Hydrologic Unit 17010204, on right bank 0.2 mi (0.3 km) downstream from county road bridge, 2.8 mi (4.5 km) east of Missoula, 2.8 mi (4.5 km) downstream from Milltown Dam, 3.0 mi (4.8 km) downstream from Blackfoot River, and at mile 361.6 (581.8 km).

DRAINAGE AREA.--5,999 mi^2 (15,537 km^2).

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 (974.842 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 27, 1929, nonrecording gage.

REMARKS.--Diurnal fluctuation caused by powerplant at Milltown. Diversions for irrigation of about 120,000 acres (490 km^2) above station.

AVERAGE DISCHARGE.--50 years, 3,020 ft^3/s (85.53 m^3/s), 2,188,000 acre-ft/yr (2.70 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,300 ft^3/s (915 m^3/s) June 21, 1975, gage height, 13.75 ft (4.191 m); minimum, 115 ft^3/s (3.26 m^3/s) Oct. 25, 1943, gage height, 0.64 ft (0.195 m), powerplant shutdown; minimum daily, 340 ft^3/s (9.63 m^3/s) Sept. 27, 1937.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1908 reached a discharge of 48,000 ft^3/s (1,400 m^3/s), furnished by The Montana Power Company.

MONTHLY AND ANNUAL MEAN DISCHARGES 1930-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	2990	854	1580	452	0.29	4.4
NOVEMBER	2850	882	1580	398	.25	4.4
DECEMBER	3320	874	1450	447	.31	4.0
JANUARY	2550	606	1330	402	.30	3.7
FEBRUARY	3260	674	1470	486	.33	4.1
MARCH	4110	1040	1840	595	.32	5.1
APRIL	10100	1190	3780	1970	.52	10.4
MAY	17200	2010	8220	3290	.40	22.7
JUNE	19300	2150	8750	4260	.49	24.2
JULY	8760	868	3270	1650	.50	9.0
AUGUST	3450	715	1520	562	.37	4.2
SEPTEMBER	2870	653	1420	457	.32	3.9
ANNUAL	5070	1340	3020	903	.30	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1930-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	629	494	435	392	348	322
3	690	547	485	440	394	366
7	810	638	558	498	435	397
14	925	731	638	567	493	447
30	1060	835	731	652	570	519
60	1160	934	833	758	680	632
90	1230	1010	909	833	755	706
120	1290	1060	963	889	813	767
183	1360	1110	1000	919	837	787

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1908-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
9700	15400	22900	27500	32900	36600	40000

WEIGHTED SKEW = -0.514

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1930-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	14600	21100	24600	28100	30300	32200
3	14200	20400	23700	27100	29200	30900
7	13300	18900	21900	24900	26700	28200
15	12100	17100	19800	22500	24100	25500
30	10700	15000	17200	19400	20700	21800
60	8760	11900	13500	15000	15900	16500
90	7210	9760	11000	12200	12900	13500

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1930-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
17300	10500	7290	5300	3930	2480	1940	1670	1500	1360	1210	1020	857	702	626	564	451

12342500 WEST FORK BITTERROOT RIVER NEAR CONNER, MT

LOCATION.--Lat 45°43'30", long 114°16'50", in SE¼NE¼NW¼ sec.26, T.1 S., R.22 W., Ravalli County, Hydrologic Unit 17010205, on right bank 0.6 mi (1.0 km) downstream from Painted Rocks Lake, 6.4 mi (10.3 km) upstream from Nez Perce Creek, 16.1 mi (25.9 km) southwest of Conner, and at mile 19.2 (30.9 km).

DRAINAGE AREA.--317 mi^2 (821 km^2).

PERIOD OF RECORD.--April 1941 to current year.

REVISED RECORDS.--WSP 1246: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,581.4 ft (1,396.41 m) National Geodetic Vertical Datum of 1929 (U.S. Forest Service bench mark).

REMARKS.--Flow regulated by Painted Rocks Lake. Diversions for irrigation of about 200 acres (0.81 km^2) above station.

AVERAGE DISCHARGE.--38 years, 292 ft^3/s (8.269 m^3/s), 211,600 acre-ft/yr (261 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,060 ft^3/s (115 m^3/s) May 9, 1947, gage height, 6.18 ft (1.884 m); minimum, 0.2 ft^3/s (0.006 m^3/s) Nov. 25, 1952; minimum daily, 0.6 ft^3/s (0.017 m^3/s) May 3-7, 1954.

MONTHLY AND ANNUAL MEAN DISCHARGES 1942-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	484	61	186	113	0.61	5.3
NOVEMBER	416	62	133	77	.58	3.8
DECEMBER	270	28	98	50	.51	2.8
JANUARY	243	21	93	41	.44	2.7
FEBRUARY	215	6.8	88	37	.42	2.5
MARCH	277	7.9	102	59	.57	2.9
APRIL	719	8.7	238	172	.72	6.8
MAY	2010	119	952	462	.49	27.2
JUNE	1960	192	1030	446	.43	29.4
JULY	633	127	278	114	.41	8.0
AUGUST	310	85	150	49	.32	4.3
SEPTEMBER	385	62	147	71	.48	4.2
ANNUAL	457	120	292	75	.26	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1943-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	24	5.9	2.5	1.1	.42	-----
3	27	7.2	3.1	1.4	.53	-----
7	35	9.1	3.7	1.6	.55	-----
14	53	20	9.9	4.9	1.9	-----
30	61	31	20	13	7.3	-----
60	79	51	35	23	13	-----
90	83	56	42	32	22	-----
120	84	62	51	43	35	-----
183	110	87	77	69	61	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1942-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	2150	2840	3150	3430	3580	-----
3	2050	2700	2980	3230	3370	-----
7	1870	2490	2780	3040	3180	-----
15	1650	2210	2460	2690	2810	-----
30	1430	1880	2070	2220	2290	-----
60	1060	1380	1520	1630	1680	-----
90	812	1050	1160	1250	1290	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1942-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
2170	1300	773	504	362	225	156	119	105	91	76	60	43	16	7.7	5.1	.78

12343400 EAST FORK BITTERROOT RIVER NEAR CONNER, MT

LOCATION.--Lat 45°53'00", long 114°03'53", in NE¼SW¼NE¼ sec.34, T.2 N., R.20 W., Ravalli County, Hydrologic Unit 17010205, on right bank 10 ft (3 m) downstream from private bridge, 4.3 mi (6.9 km) southeast of Conner, and 5.0 mi (8.0 km) upstream from confluence with West Fork.

DRAINAGE AREA.--381 mi^2 (987 km^2).

PERIOD OF RECORD.--April 1956 to September 1972.

GAGE.--Water-stage recorder. Datum of gage is 4,191.81 ft (1,277.664 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Diversions for irrigation of about 2,200 acres (8.90 km^2) above station.

AVERAGE DISCHARGE.--16 years, 293 ft^3/s (8.298 m^3/s), 10.44 in/yr (265 mm/yr), 212,300 acre-ft/yr (262 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,000 ft^3/s (113 m^3/s) June 2, 1972, gage height, 7.17 ft (2.185 m); maximum observed, 23 ft (0.65 m) Nov. 29, 1960, result of freezeup.

MONTHLY AND ANNUAL MEAN DISCHARGES 1957-72

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	167	83	113	24	0.21	3.2
NOVEMBER	137	79	104	19	.18	3.0
DECEMBER	168	39	92	28	.30	2.6
JANUARY	115	57	86	16	.18	2.4
FEBRUARY	170	67	94	26	.28	2.7
MARCH	215	76	112	39	.35	3.2
APRIL	477	109	238	110	.46	6.8
MAY	1480	520	943	265	.28	26.8
JUNE	1960	355	1170	448	.38	33.3
JULY	520	126	315	114	.36	9.0
AUGUST	203	73	130	35	.27	3.7
SEPTEMBER	187	87	117	28	.24	3.3
ANNUAL	400	170	293	63	.22	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1957-72

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	42	34	30	27	-----	-----
3	50	39	34	29	-----	-----
7	63	50	42	35	-----	-----
14	71	57	48	40	-----	-----
30	78	64	55	47	-----	-----
60	82	69	61	55	-----	-----
90	85	73	67	62	-----	-----
120	89	76	70	66	-----	-----
183	96	84	77	72	-----	-----

[2]MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1937-72

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1630	1910	2780	3320	3960	4420	4840

WEIGHTED SKEW = -0.343

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1957-72

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	2080	2680	2990	3280	-----	-----
3	1980	2540	2820	3100	-----	-----
7	1850	2330	2540	2730	-----	-----
15	1710	2100	2250	2370	-----	-----
30	1450	1780	1910	2020	-----	-----
60	1110	1350	1460	1550	-----	-----
90	854	1040	1120	1190	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1957-72

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
1970	1340	863	518	337	190	142	120	106	94	85	74	65	55	47	41	30

[2]Peak flow records combined for stations 12343400 and 12343500

12343500 EAST FORK BITTERROOT RIVER AT CONNER, MT

LOCATION.--Lat 45°56'00", long 114°07'30", in SE¼SE¼ sec.7, T.2 N., R.20 W., Ravalli County, Hydrologic Unit 17010205, on left bank 125 ft (38 m) downstream from highway bridge at Conner and 0.5 mi (0.8 km) upstream from confluence with West Fork.

DRAINAGE AREA.--405 mi^2 (1,049 km^2).

PERIOD OF RECORD.--October 1915 to August 1916, gage heights only, April 1937 to September 1957. Monthly discharge only for some periods, published in WSP 1316. Published as "near Darby" 1910-16.

GAGE.--Nonrecording gage. Datum of gage is 4,015.29 ft (1,223.860 m) National Geodetic Vertical Datum of 1929, supplementary adjustment of 1947. Sept. 20, 1910, to Sept. 17, 1916, staff gage 2.5 mi (4.0 km) upstream at different datum.

REMARKS.--Diversions for irrigation of about 3,000 acres (12.1 km^2) above station.

AVERAGE DISCHARGE.--20 years (1937-57), 257 ft^3/s (7.278 m^3/s), 186,100 acre-ft/yr (229 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,760 ft^3/s (106 m^3/s) May 29, 1948, gage height, 5.70 ft (1.737 m); maximum gage height observed, 5.78 ft (1.762 m) May 9, 1947; minimum discharge observed, 1.4 ft^3/s (0.040 m^3/s) Aug. 17, 1937.

MONTHLY AND ANNUAL MEAN DISCHARGES 1938-57

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	234	42	87	41	0.47	2.8
NOVEMBER	214	45	89	35	.40	2.9
DECEMBER	221	51	87	40	.46	2.8
JANUARY	134	45	74	19	.26	2.4
FEBRUARY	132	39	82	22	.27	2.7
MARCH	184	60	92	29	.31	3.0
APRIL	682	96	258	148	.57	8.4
MAY	1950	344	929	461	.50	30.1
JUNE	1650	240	930	365	.39	30.2
JULY	568	41	295	143	.49	9.6
AUGUST	166	16	87	40	.46	2.8
SEPTEMBER	153	34	72	28	.39	2.3
ANNUAL	408	116	257	82	.32	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1938-57

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	30	19	13	9.6	-----	-----
3	34	22	16	12	-----	-----
7	41	26	19	14	-----	-----
14	47	30	22	16	-----	-----
30	55	37	28	22	-----	-----
60	65	46	37	29	-----	-----
90	69	53	44	38	-----	-----
120	70	57	52	49	-----	-----
183	73	60	56	53	-----	-----

[2]MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1630	1910	2780	3320	3960	4420	4840

WEIGHTED SKEW = -0.343

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1938-57

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	1770	2600	3130	3770	-----	-----
3	1690	2510	3040	3700	-----	-----
7	1580	2360	2870	3520	-----	-----
15	1390	2030	2450	2970	-----	-----
30	1230	1720	2000	2320	-----	-----
60	968	1290	1450	1610	-----	-----
90	760	1010	1130	1250	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1938-57

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
1990	1140	736	499	341	165	115	97	84	76	66	53	42	30	26	20	10

[2]Peak flow records combined for stations 12343400 and 12343500

12344000 BITTERROOT RIVER NEAR DARBY, MT

LOCATION.--Lat 45°58'20", long 114°08'26", in SW¼SE¼NE¼ sec.36, T.3 N., R.21 W., Ravalli County, Hydrologic Unit 17010205, on left bank 45 ft (14 m) downstream from bridge on U.S. Highway 93, 0.3 mi (0.5 km) downstream from Chaffin Creek, 4.1 mi (6.6 km) southeast of Darby, and at mile 77.2 (124.2 km).

DRAINAGE AREA.--1,049 mi^2 (2,717 km^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 3,943.14 ft (1,201.869 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 2, 1939, nonrecording gage at highway bridge 45 ft (14 m) upstream at same datum.

REMARKS.--Some regulation by Painted Rocks Lake. Diversions for irrigation of about 5,000 acres (20 km^2) above station. Ditch bypassing station irrigates about 500 acres (2.0 km^2) below.

AVERAGE DISCHARGE.--42 years, 933 ft^3/s (26.42 m^3/s), 676,000 acre-ft/yr (834 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft^3/s (326 m^3/s) May 9, 1947, gage height, 8.18 ft (2.493 m); maximum gage height, 8.42 ft (2.566 m) June 17, 1974 (backwater from log jam); minimum discharge observed, about 71 ft^3/s (2.01 m^3/s) Feb. 9, 1939; minimum gage height, 0.10 ft (0.030 m) Nov. 28, 1976, and Mar. 15, 1977, result of freezeup and regulation.

MONTHLY AND ANNUAL MEAN DISCHARGES 1938-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	1020	143	394	168	0.43	3.5
NOVEMBER	788	158	339	128	.38	3.0
DECEMBER	765	148	298	136	.46	2.7
JANUARY	421	148	261	68	.26	2.3
FEBRUARY	635	125	273	94	.34	2.4
MARCH	1010	139	351	160	.45	3.1
APRIL	2530	336	1020	546	.54	9.1
MAY	6000	1110	3150	1200	.38	28.2
JUNE	6240	983	3340	1360	.41	29.9
JULY	2610	210	1050	485	.46	9.4
AUGUST	751	141	372	116	.31	3.3
SEPTEMBER	634	170	338	116	.34	3.0
ANNUAL	1420	469	933	252	.27	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1938-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	153	117	100	87	73	65
3	162	126	108	95	81	73
7	179	141	123	108	94	84
14	195	157	138	123	107	98
30	214	172	151	135	118	108
60	229	184	163	146	129	118
90	243	195	172	155	137	126
120	256	203	180	163	145	135
183	288	233	209	193	176	166

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1938-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	6180	8370	9540	10800	11500	12200
3	5900	7980	9100	10300	11000	11600
7	5460	7390	8430	9510	10200	10800
15	4890	6580	7460	8360	8910	9380
30	4260	5600	6280	6960	7360	7690
60	3370	4340	4810	5250	5500	5710
90	2690	3430	3780	4110	4300	4440

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1938-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
6480	4040	2630	1800	1250	654	456	368	311	272	239	201	174	143	127	118	97

12346500 SKALKAHO CREEK NEAR HAMILTON, MT

LOCATION.--Lat 46°09'43", long 113°57'08", in SW¼NE¼ sec.27, T.5 N., R.19 W., Ravalli County, Hydrologic Unit 17010205, Bitterroot National Forest, on right bank 2 mi (3 km) downstream from Daly Creek, 11.4 mi (18.3 km) southeast of Hamilton, and at mile 12.0 (19.3 km).

DRAINAGE AREA.--87.8 mi^2 (227.4 km^2).

PERIOD OF RECORD.--December 1948 to September 1953, August 1957 to September 1979. April 1920 to September 1924 at site 3 mi (5 km) downstream; records not equivalent owing to inflow.

GAGE.--Water-stage recorder. Datum of gage is 4,393.16 ft (1,339.035 m) National Geodetic Vertical Datum of 1929 (Bureau of Public Roads bench mark).

REMARKS.-During irrigation season flow is supplemented by releases from Kent and Dam Creek Lakes, combined capacity, 200 acre-ft (247,000 m^3).

AVERAGE DISCHARGE.--26 years, (1949-53, 1957-79), 93.5 ft^3/s (2.648 m^3/s), 14.46 in/yr (367 mm/yr), 67,740 acre-ft/yr (83.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,210 ft^3/s (34.3 m^3/s) June 1, 1972, gage height, 4.84 ft (1.475 m); maximum gage height recorded, 5.18 ft (1.579 m) Feb. 29, 1960 (backwater from ice); minimum discharge recorded, 10 ft^3/s (0.28 m^3/s) Apr. 2, 1953, gage height, 1.26 ft (0.384 m), backwater from ice, result of freezeup.

MONTHLY AND ANNUAL MEAN DISCHARGES 1950-53, 1958-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	67	29	41	8.7	0.21	3.7
NOVEMBER	60	24	35	6.9	.19	3.2
DECEMBER	53	23	30	6.2	.21	2.7
JANUARY	49	19	27	6.1	.23	2.4
FEBRUARY	43	20	26	4.8	.18	2.3
MARCH	39	18	26	5.0	.19	2.3
APRIL	94	25	50	22	.44	4.5
MAY	449	89	225	98	.43	20.1
JUNE	644	109	387	123	.32	34.5
JULY	329	56	155	64	.41	13.8
AUGUST	109	39	69	17	.25	6.1
SEPTEMBER	74	35	48	10	.21	4.3
ANNUAL	138	49	94	21	.22	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1950-53, 1959-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	17	15	14	14	13	-----
3	18	16	15	15	14	-----
7	20	18	17	16	15	-----
14	21	19	18	17	16	-----
30	23	21	19	19	18	-----
60	24	22	21	21	20	-----
90	25	23	22	21	21	-----
120	26	24	23	22	22	-----
183	30	27	26	25	24	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1948-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
465	646	839	957	1110	1210	1320

WEIGHTED SKEW = -0.312

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1950-53, 1958-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	591	740	798	844	866	-----
3	566	709	764	806	825	-----
7	538	672	721	759	775	-----
15	500	612	649	673	683	-----
30	452	539	565	579	584	-----
60	347	419	443	459	466	-----
90	270	328	348	364	370	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1950-53, 1958-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
572	414	275	164	114	69	50	41	35	30	27	24	22	20	18	17	15

12347500 BLODGETT CREEK NEAR CORVALLIS, MT

LOCATION.--Lat 46°16'10", long 114°14'12", in NW¼NW¼ sec.21, T.6 N., R.21 W., Ravalli County, Hydrologic Unit 17010205, on right bank 4.5 mi (7.2 km) upstream from mouth and 6.6 mi (10.6 km) southwest of Corvallis.

DRAINAGE AREA.--26.4 mi^2 (68.4 km^2).

PERIOD OF RECORD.--December 1946 to September 1969. Monthly discharge only for December 1946, published in WSP 1316.

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,050 ft (1,234 m), from topographic map.

REMARKS.--Some regulation for irrigation at low flow by Blodgett Lake, capacity 160 acre-ft (197,300 m^3).

AVERAGE DISCHARGE.--22 years (1947-69), 70.5 ft^3/s (2.00 m^3/s), 36.26 in/yr (921 mm/yr), 51,080 acre-ft/yr (63.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 836 ft^3/s (23.7 m^3/s) May 16, 1949, gage height, 6.42 ft (1.957 m); minimum, 1.2 ft^3/s (0.034 m^3/s) Nov. 9, 10, 23, 25, 1952; minimum gage height, 1.93 ft (0.588 m) Nov. 9, 10, 1952.

MONTHLY AND ANNUAL MEAN DISCHARGES 1948-69

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	110	2.2	27	27	0.97	3.2
NOVEMBER	62	2.4	26	19	.73	3.0
DECEMBER	49	2.5	21	14	.66	2.5
JANUARY	34	5.8	15	8.2	.56	1.7
FEBRUARY	51	5.0	15	9.9	.64	1.8
MARCH	42	6.3	17	7.3	.43	2.0
APRIL	132	20	74	34	.46	8.8
MAY	366	157	250	65	.26	29.6
JUNE	367	164	271	61	.23	32.1
JULY	177	37	91	43	.48	10.8
AUGUST	39	6.6	21	8.7	.41	2.5
SEPTEMBER	54	4.8	16	14	.86	1.9
ANNUAL	90	50	71	9.9	.14	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1948-69

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	4.3	2.7	2.1	1.7	-----	-----
3	4.6	2.8	2.2	1.7	-----	-----
7	5.1	3.1	2.3	1.8	-----	-----
14	5.8	3.5	2.6	2.0	-----	-----
30	6.9	4.2	3.2	2.5	-----	-----
60	8.9	5.5	4.1	3.1	-----	-----
90	11	6.5	4.8	3.6	-----	-----
120	13	7.5	5.4	4.1	-----	-----
183	16	9.5	7.3	5.8	-----	-----

[3]MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1938-72

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
522	600	755	844	950	1020	1090

WEIGHTED SKEW = -0.309

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1948-69

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	529	620	671	728	-----	-----
3	478	570	625	689	-----	-----
7	429	513	565	626	-----	-----
15	385	456	497	542	-----	-----
30	337	391	421	454	-----	-----
60	274	305	320	335	-----	-----
90	219	243	255	267	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1948-69

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
480	322	231	160	109	51	31	23	18	14	9.8	6.8	5.2	3.1	2.4	2.1	1.6

[3]Peak flow records combined for stations 12347500 and 12348000

12350000 BEAR CREEK NEAR VICTOR, MT

LOCATION.--Lat 46°23', long 114°13', in NE¼ sec.9, T.7 N., R.21 W., Ravalli County, Hydrologic Unit 17010205, on left bank 4 mi (6 km) upstream from mouth and 5 mi (8 km) southwest of Victor.

DRAINAGE AREA.--26.8 mi^2 (69.4 km^2).

PERIOD OF RECORD.--April 1938 to December 1954, August 1957 to September 1959.

GAGE.--Water-stage recorder and timber control. Altitude of gage is 3,770 ft (1,149 m), from topographic map. Prior to Aug. 27, 1941, staff gage at same site and datum.

REMARKS.--No diversion above station. Natural flow is supplemented by stored water from Bear Lake, capacity, 375 acre-ft (462,000 m^3), during irrigation season.

AVERAGE DISCHARGE.--18 years (1938-54, 1957-59), 66.0 ft^3/s (1.869 m^3/s), 47,780 acre-ft/yr (58.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft^3/s (37.9 m^3/s) June 16, 1950, gage height, 5.04 ft (1.536 m), from rating curve extended above 710 ft^3/s (20.1 m^3/s); minimum, 0.6 ft^3/s (0.017 m^3/s) Dec. 1, 1952; minimum gage height, 0.36 ft (0.110 m) Sept. 17, 1957.

MONTHLY AND ANNUAL MEAN DISCHARGES 1939-54, 1958-59

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	70	2.5	23	23	1.0	2.9
NOVEMBER	61	3.6	23	17	.73	2.9
DECEMBER	44	3.5	20	14	.69	2.5
JANUARY	31	4.1	13	6.6	.52	1.6
FEBRUARY	26	3.7	12	5.3	.44	1.5
MARCH	31	5.5	16	6.8	.44	2.0
APRIL	142	27	81	35	.43	10.3
MAY	385	146	252	77	.30	31.9
JUNE	407	116	241	89	.37	30.5
JULY	192	15	86	56	.65	10.9
AUGUST	34	2.8	13	7.6	.59	1.6
SEPTEMBER	44	3.3	11	11	.98	1.4
ANNUAL	87	40	66	15	.22	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1940-54, 1959

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	2.7	1.5	1.1	0.83	-----	-----
3	2.8	1.6	1.2	.90	-----	-----
7	3.1	1.8	1.4	1.1	-----	-----
14	3.5	2.2	1.8	1.5	-----	-----
30	4.3	2.8	2.2	1.8	-----	-----
60	6.1	3.8	3.0	2.4	-----	-----
90	7.7	4.8	3.8	3.2	-----	-----
120	9.8	5.9	4.5	3.7	-----	-----
183	13	7.7	5.9	4.7	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1938-59

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
538	686	870	977	1100	1190	1270

WEIGHTED SKEW = -0.270

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1939-54, 1958-59

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	544	675	758	860	-----	-----
3	483	612	696	804	-----	-----
7	429	551	628	722	-----	-----
15	364	464	524	597	-----	-----
30	316	396	445	503	-----	-----
60	263	314	341	369	-----	-----
90	211	249	266	283	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1939-54, 1958-59

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
512	313	213	144	101	48	26	18	14	11	7.7	5.1	3.6	2.6	2.1	1.8	1.2

12351000 BURNT FORK CREEK NEAR STEVENSVILLE, MT

LOCATION.--Lat 46°27'50", long 113°56'40", in NW¼SW¼ sec. 11, T.8 N., R.19 W., Ravalli County, Hydrologic Unit 17010205, on right bank 150 ft (46 m) upstream from county road bridge and 8 mi (13 km) southeast of Stevensville.

DRAINAGE AREA.--74.0 mi^2 (191.7 km^2).

PERIOD OF RECORD.--May to November 1920, April 1922 to September 1924 (no winter records), April to June 1938, October 1938 to September 1962. Annual maximums, water years 1963-65. Monthly discharge only for some periods, published in WSP 1316. Records for December 1922, published in WSP 572 and 916, have been found to be unreliable and should not be used.

GAGE.--Crest-stage gage since July 20, 1959. Altitude of gage is 4,270 ft (1,301 m), from topographic map. May 8, 1920, to Aug. 23, 1924, staff gage at site 150 ft (46 m) downstream at different datum. April 1938 to Mar. 18, 1953, staff gage and Mar. 19, 1953, to Mar. 15, 1955, wire-weight gage, at site 150 ft (46 m) downstream at datum 2.00 ft (0.610 m) lower. Mar. 16, 1955, to Sept. 30, 1962, staff gage at present site and datum.

REMARKS.--Figures of daily discharge do not include diversion by Sunset Highline ditch which diverts 0.5 mi (0.8 km) above station for irrigation of about 2,000 acres (8.09 km^2) below. During irrigation season, natural flow of stream is augmented by release from Burnt Fork Lake, capacity, 510 acre-ft (629,000 hm^3)

AVERAGE DISCHARGE.--24 years (1938-62), 48.3 ft^3/s (1.368 m^3/s), 34,970 acre-ft/yr (43.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 720 ft^3/s (20.4 m^3/s) June 8, 1964, gage height, 4.73 ft (1.442 m); maximum gage height observed, 5.10 ft (1.554 m) Jan. 15, 16, 1960 (backwater from ice); minimum daily discharge, 2.0 ft^3/s (0.057 m^3/s) Mar. 11, 1948.

MONTHLY AND ANNUAL MEAN DISCHARGES 1939-62

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	36	14	21	5.5	0.26	3.6
NOVEMBER	36	15	21	5.1	.24	3.7
DECEMBER	30	13	20	4.3	.22	3.4
JANUARY	26	13	17	3.7	.22	2.9
FEBRUARY	27	12	16	3.6	.22	2.8
MARCH	27	10	17	4.0	.24	2.9
APRIL	108	15	42	23	.54	7.3
MAY	296	43	136	66	.49	23.5
JUNE	311	53	171	64	.37	29.5
JULY	146	26	66	33	.50	11.5
AUGUST	43	19	30	7.1	.24	5.2
SEPTEMBER	26	17	22	2.8	.13	3.7
ANNUAL	79	25	48	14	.29	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1940-62

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	10	6.6	4.9	3.7	-----	-----
3	11	7.1	5.4	4.2	-----	-----
7	11	8.5	7.2	6.2	-----	-----
14	12	10	9.1	8.3	-----	-----
30	14	12	11	11	-----	-----
60	15	13	12	12	-----	-----
90	16	14	13	13	-----	-----
120	16	14	14	13	-----	-----
183	18	16	15	14	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1920-73

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
208	338	506	619	763	869	980

WEIGHTED SKEW = -0.217

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1939-62

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	288	392	448	507	-----	-----
3	272	373	428	485	-----	-----
7	255	348	398	451	-----	-----
15	231	316	361	409	-----	-----
30	202	273	312	352	-----	-----
60	158	212	242	273	-----	-----
90	125	168	191	217	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1939-62

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
322	199	126	85	59	36	27	23	20	18	17	14	13	11	9.3	8.2	6.0

12353000 CLARK FORK BELOW MISSOULA, MT

LOCATION.--Lat 46°52'09", long 114°07'33", in NW¼NE¼SE¼ sec.21, T.13 N., R.20 W., Missoula County, Hydrologic Unit 17010204, on right bank 1.0 mi (1.6 km) downstream from Bitterroot River, 4.5 mi (7.2 km) west of Missoula, and at mile 349.5 (562.3 km).

DRAINAGE AREA.--9,003 mi^2 (23,318 km^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 (939.967 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Some diurnal fluctuation at low flow caused by powerplant at Bonner 14.9 mi (24.0 km) upstream. Diversion for irrigation of about 235,000 acres (951 km^2) above station.

AVERAGE DISCHARGE.--50 years, 5,496 ft^3/s (155.6 m^3/s), 3,982,000 acre-ft/yr (4.91 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,800 ft^3/s (1,500 m^3/s) May 23, 1948, gage height, 12.08 ft (3.682 m); minimum, 388 ft^3/s (11.0 m^3/s) Jan. 18, 1933; minimum gage height, 0.30 ft (0.091 m) about Jan. 16, 1954, Mar. 24, 1964.

MONTHLY AND ANNUAL MEAN DISCHARGES 1930-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	6620	1390	2800	957	0.34	4.2
NOVEMBER	5110	1470	2800	790	.28	4.3
DECEMBER	5760	1480	2570	891	.35	3.9
JANUARY	4400	871	2270	718	.32	3.4
FEBRUARY	5770	1110	2490	880	.35	3.8
MARCH	7010	1740	3060	1050	.34	4.6
APRIL	16500	2300	6430	3340	.52	9.8
MAY	29800	5110	15400	5760	.38	23.3
JUNE	34000	5180	17500	7890	.45	26.6
JULY	16300	1360	6030	3250	.54	9.1
AUGUST	5530	810	2300	957	.42	3.5
SEPTEMBER	5160	909	2290	842	.37	3.5
ANNUAL	8830	2580	5500	1610	.29	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1931-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	1140	888	776	691	604	551
3	1220	946	821	727	630	570
7	1380	1050	897	774	647	569
14	1520	1170	993	858	719	634
30	1700	1280	1080	931	777	684
60	1880	1440	1230	1080	921	825
90	2040	1610	1410	1260	1100	1010
120	2180	1740	1540	1400	1250	1160
183	2330	1850	1640	1490	1330	1240

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1930-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
19300	28400	40200	47500	56200	62200	67900

WEIGHTED SKEW = 0.377

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1930-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	28700	39600	45400	51400	55200	58400
3	27800	38300	44000	49900	53600	56700
7	25900	35800	41200	46900	50400	53500
15	23600	32600	37500	42700	46000	48800
30	20900	28400	32300	36400	38800	40800
60	17100	22600	25400	28100	29600	30900
90	13900	18300	20500	22600	23800	24700

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1930-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
32600	20500	14100	9920	7250	4310	3330	2830	2500	2240	1980	1640	1380	1090	949	819	679

12354000 ST. REGIS RIVER NEAR ST. REGIS, MT

LOCATION.--Lat 47°17'49", long 115°07'18", near center of NW¼NE¼ sec.26, T.18 N., R.28 W., Mineral County, Hydrologic Unit 17010204, on left bank 50 ft (15 m) downstream from road bridge, 500 ft (150 m) upstream from Little Joe Creek, 1.2 mi (1.9 km) west of St. Regis, and 1.7 mi (2.7 km) upstream from mouth.

DRAINAGE AREA.--303 mi^2 (785 km^2).

PERIOD OF RECORD.--September 1910 to September 1917 (no winter records), annual maximum, water year 1948, published in WSP 1080, September 1958 to September 1975. Monthly discharge only for some periods, published in WSP 1316, 1736.

GAGE.--Water-stage recorder. Datum of gage is 2,645.00 ft (806.196 m) National Geodetic Vertical Datum of 1929. September 1910 to September 1917, nonrecording gage at site 2 mi (3 km) upstream at different datum.

REMARKS.--Minor diversion for irrigation of hay meadows above station.

AVERAGE DISCHARGE.--17 years, 580 ft^3/s (16.43 m^3/s), 26.00 in/yr (660 mm/yr), 420,000 acre-ft/yr (518 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft^3/s (273 m^3/s) Jan. 16, 1974, gage height, 7.38 ft (2.249 m); minimum, 41 ft^3/s (1.16 m^3/s) Dec. 30, 1968, result of freezeup, but may have been less during period of ice effect Dec. 9-14, 1961.

MONTHLY AND ANNUAL MEAN DISCHARGES 1959-75

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	350	86	143	65	0.46	2.1
NOVEMBER	463	101	206	120	.58	3.0
DECEMBER	555	92	220	152	.69	3.2
JANUARY	1360	89	282	300	1.07	4.0
FEBRUARY	759	87	313	190	.61	4.5
MARCH	1370	94	408	299	.73	5.9
APRIL	1750	349	1090	495	.46	15.6
MAY	3400	886	2100	640	.30	30.2
JUNE	3370	420	1540	734	.48	22.2
JULY	685	155	372	146	.39	5.3
AUGUST	215	83	158	37	.23	2.3
SEPTEMBER	181	77	127	29	.23	1.8
ANNUAL	938	256	580	164	.28	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1960-75

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	73	57	50	45	-----	-----
3	82	64	57	52	-----	-----
7	87	71	65	60	-----	-----
14	93	78	72	67	-----	-----
30	99	84	78	73	-----	-----
60	108	92	85	81	-----	-----
90	117	97	89	83	-----	-----
120	124	101	93	88	-----	-----
183	148	115	103	95	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1911-75

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
2790	4100	5850	6900	8210	9100	9770

WEIGHTED SKEW = -0.258

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1959-75

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	3780	5270	6170	7190	-----	-----
3	3540	4760	5440	6170	-----	-----
7	3140	4100	4590	5090	-----	-----
15	2740	3580	4010	4420	-----	-----
30	2430	3180	3550	3910	-----	-----
60	2010	2530	2750	2940	-----	-----
90	1660	2050	2210	2340	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1959-75

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
3800	2360	1620	1210	881	493	322	225	174	143	120	101	90	80	74	67	56

12354500 CLARK FORK AT ST. REGIS, MT

LOCATION.--Lat 47°18'07", long 115°05'11", near center of SW¼ sec.19, T.18 N., R.27 W., Mineral County, Hydrologic Unit 17010204, on left bank at St. Regis, 0.4 mi (0.6 km) downstream from St. Regis River, and at mile 270.3 (434.9 km).

DRAINAGE AREA.--10,709 mi^2 (27,736 km^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. WSP 1316: 1916-17, 1920, 1929-31(M), 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 2,600.37 ft (792.593 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Nov. 29, 1933, nonrecording gage at same site and datum.

REMARKS.--Diversions for irrigation of about 244,000 acres (987 km^2) above station.

AVERAGE DISCHARGE.--69 years, 7,565 ft^3/s (214.2 m^3/s), 5,481,000 acre-ft/yr (6.76 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,900 ft^3/s (1,950 m^3/s) May 24, 1948, gage height, 19.96 ft (6.084 m), from graph based on gage readings; minimum, 1,000 ft^3/s (28.3 m^3/s) Dec. 17, 1940, gage height, 3.36 ft (1.024 m); but may have been less during periods of ice effect in several years.

MONTHLY AND ANNUAL MEAN DISCHARGES 1912-23, 1929-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	8040	1850	3600	1100	0.31	3.9
NOVEMBER	7050	1940	3650	1100	.30	4.0
DECEMBER	10700	1910	3550	1600	.45	3.9
JANUARY	10500	1450	3230	1510	.47	3.6
FEBRUARY	8260	1590	3400	1270	.37	3.7
MARCH	11500	2200	4220	1760	.42	4.6
APRIL	24900	3330	9470	4520	.48	10.4
MAY	38400	7190	21600	7470	.35	23.7
JUNE	42400	6400	23500	10100	.43	25.8
JULY	25500	2000	8400	4510	.54	9.2
AUGUST	6750	1450	3380	1250	.37	3.7
SEPTEMBER	6250	1350	3090	978	.32	3.4
ANNUAL	11400	3420	7600	2190	.29	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1912-23, 1930-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NONEXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1720	1360	1210	1090	977	907
3	1810	1450	1290	1170	1050	974
7	2000	1620	1440	1300	1160	1080
14	2200	1780	1570	1410	1230	1120
30	2410	1930	1700	1530	1340	1220
60	2590	2110	1890	1710	1530	1420
90	2740	2260	2040	1870	1700	1590
120	2900	2380	2150	1980	1810	1700
183	3110	2510	2250	2070	1890	1780

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1911-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
25500	37300	51500	59600	68600	74500	79800

WEIGHTED SKEW = 0.580

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1912-23, 1929-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	37700	51000	57900	64900	69100	72600
3	36800	49900	56700	63600	67800	71300
7	34600	47200	53900	60700	64900	68400
15	31700	43100	49100	55200	58900	62100
30	28200	38000	43000	48000	51000	53500
60	23300	30700	34300	37800	39800	41500
90	19200	25100	28000	30800	32300	33600

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1912-23, 1929-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
43000	28200	19700	14100	10500	6150	4590	3790	3350	3000	2660	2290	1980	1690	1500	1370	1200

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT

LOCATION.--Lat 48°29'44", long 114°07'36", in NE¼SW¼NW¼ sec.35, T.32 N., R.20 W., Flathead County, Hydrologic Unit 17010206, on right bank 1.5 mi (2.4 km) downstream from Canyon Creek, 3.8 mi (6.1 km) upstream from Middle Fork, 8.8 mi (14.2 km) northeast of Columbia Falls, and at mile 162.1 (260.8 km).

DRAINAGE AREA.--1,548 mi^2 (4,009 km^2).

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 (958.776 m), National Geodetic Vertical Datum of 1929. 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 (4.3 km) downstream at different datums.

REMARKS.--A few small diversions from tributaries for irrigation of hay meadows above station.

AVERAGE DISCHARGE.--48 years (1910-12, 1913-15, 1935-79), 2,990 ft^3/s (84.68 m^3/s), 26.23 in/yr (666 mm/yr), 2,166,000 acre-ft/yr (2.67 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,100 ft^3/s (1,960 m^3/s) June 9, 1964, gage height, 18.60 ft (5.669 m), from floodmark, from rating curve extended above 37,000 ft^3/s (1,050 m^3/s) on basis of slope-area measurement of peak flow; minimum, 198 ft^3/s (5.61 m^3/s) Jan. 8, 1953, gage height, 0.86 ft (0.262 m), site and datum then in use.

MONTHLY AND ANNUAL MEAN DISCHARGES 1911-15, 1936-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	3650	518	1250	699	0.56	3.5
NOVEMBER	2940	420	1140	535	.47	3.2
DECEMBER	2290	394	895	413	.46	2.5
JANUARY	2130	325	732	296	.40	2.0
FEBRUARY	1810	370	712	270	.38	2.0
MARCH	2350	406	775	305	.39	2.2
APRIL	6880	833	3140	1490	.47	8.7
MAY	15200	4990	10100	2670	.27	28.1
JUNE	20800	3350	10300	3900	.38	28.6
JULY	9260	1440	4090	1680	.41	11.4
AUGUST	3230	747	1640	530	.32	4.6
SEPTEMBER	2650	668	1190	414	.35	3.3
ANNUAL	4720	1380	3000	693	.23	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1912-15, 1937-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	373	313	290	273	258	249
3	399	338	313	296	280	271
7	448	377	348	326	305	292
14	500	417	382	355	329	313
30	562	468	425	392	358	337
60	598	498	457	427	398	380
90	645	531	483	449	414	394
120	704	566	510	470	431	408
183	839	654	580	528	478	448

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1911-17; 1929-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
17000	20200	25600	29000	33900	37200	43000

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1911-15, 1936-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	18800	25800	30200	35600	39400	43000
3	18100	24100	27400	31000	33400	35500
7	16500	21500	24100	26900	28600	30000
15	14700	19000	21400	23800	25400	26700
30	13100	16400	18000	19600	20500	21300
60	10700	13100	14100	15100	15700	16100
90	8690	10600	11400	12200	12600	13000

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1911-15, 1936-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
19100	12400	8660	6380	4510	2380	1560	1180	954	809	688	562	477	395	365	350	308

12357000 MIDDLE FORK FLATHEAD RIVER AT ESSEX, MT

LOCATION.--Lat 48°16'30", long 113°36'10", in NE¼SW¼ sec.14, T.16 N., R.16 W., Flathead County, Hydrologic Unit 17010207, on right bank 0.7 mi (1.0 km) upstream from Ole Creek, 0.7 mi (1.0 km) southeast of Essex, 4.4 mi (7.1 km) downstream from Bear Creek, and at mile 40.0 (64.4 km).

DRAINAGE AREA.--510 mi^2 (1,321 km^2).

PERIOD OF RECORD.--October 1939 to September 1953, June 1956 to September 1964. Monthly discharge only for October 1939, published in WSP 1316.

REVISED RECORD.--WSP 1216: Drainage area. WSP 1246: 1940, 1941(M)

GAGE.--Nonrecording gage. Datum of gage is 3,721.93 ft (1,134.444 m) National Geodetic Vertical Datum of 1929, supplementary adjustment of 1947. Prior to May 14, 1964, water-stage recorder at same site and datum.

REMARKS.--No regulation or diversion above station.

AVERAGE DISCHARGE.--22 years, 1,067 ft^3/s (30.22 m^3/s), 772,500 acre-ft/yr (952 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,300 ft^3/s (2,076 m^3/s) June 8, 1964, gage height, 26.7 ft (8.14 m), from floodmark, result of slope-area measurement of peak flow; minimum daily, 30 ft^3/s (0.85 m^3/s) Jan. 22, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1954 reached a stage of 12.7 ft (3.87 m), discharge 18,000 ft^3/s (510 m^3/s), from rating curve extended above 12,000 ft^3/s (340 m^3/s). Flood of May 21 or 22, 1956, reached a stage of 11.7 ft (3.57 m), from floodmark, discharge, 15,400 ft^3/s (436 m^3/s), from rating curve extended above 12,000 ft^3/s (340 m^3/s).

MONTHLY AND ANNUAL MEAN DISCHARGES 1940-53, 1957-64

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	1080	137	348	237	0.68	2.7
NOVEMBER	812	108	355	223	.63	2.8
DECEMBER	884	103	333	224	.67	2.6
JANUARY	489	93	223	103	.46	1.7
FEBRUARY	602	100	238	133	.56	1.9
MARCH	490	127	251	98	.39	2.0
APRIL	2850	389	1320	656	.50	10.4
MAY	6720	1970	4350	1110	.26	34.1
JUNE	7540	1000	3740	1960	.52	29.3
JULY	2590	309	1040	643	.62	8.1
AUGUST	557	164	324	105	.32	2.5
SEPTEMBER	427	148	244	72	.30	1.9
ANNUAL	1580	465	1070	300	.28	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1941-53, 1958-64

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	111	81	67	58	-----	-----
3	118	87	74	64	-----	-----
7	133	100	85	74	-----	-----
14	146	113	98	87	-----	-----
30	157	124	109	98	-----	-----
60	171	130	114	101	-----	-----
90	185	138	120	108	-----	-----
120	211	149	126	111	-----	-----
183	252	173	143	123	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1940-64

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
7600	9650	13500	16200	20500	24000	31700

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1940-53, 1957-64

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	7950	12300	16200	22500	-----	-----
3	7650	11100	13600	17200	-----	-----
7	7130	9570	11000	12500	-----	-----
15	6300	8270	9280	10300	-----	-----
30	5510	7010	7720	8390	-----	-----
60	4300	5380	5870	6320	-----	-----
90	3360	4200	4580	4930	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1940-53, 1957-64

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
8280	5120	3330	2180	1430	664	434	326	261	216	182	143	124	107	97	83	55

12357500 MIDDLE FORK FLATHEAD RIVER AT WEST GLACIER, MT

LOCATION.--Lat 48°30'00", long 113°58'30", in NW¼NW¼ sec.36, T.32 N., R.19 W., Flathead County, Hydrologic Unit 17010207, on left bank at West Glacier, 0.5 mi (0.8 km) upstream from highway bridge, and 2 mi (3 km) upstream from outlet of Lake McDonald.

DRAINAGE AREA.--943 mi^2 (2,443 km^2).

PERIOD OF RECORD.--October 1910 to September 1923, March 1929 to September 1933, August 1943 to November 1947. No winter records some years. Published as Middle Fork Flathead River near Belton in WSP 1316.

REVISED RECORDS.--WSP 1316: Drainage area.

GAGE.--Nonrecording gage. Altitude of gage is 3,170 ft (966 m), from river profile map.

REMARKS.--No significant diversion or regulation above station.

AVERAGE DISCHARGE.--13 years. (1910-12, 1915-16, 1918-19, 1920-21, 1929-33, 1943-47), 2,294 ft^3/s (64.97 m^3/s), 1,662,000 acre-ft/yr (2.05 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft^3/s (1,274 m^3/s) June 21, 1916, gage height, 17.5 ft (5.33 m), from floodmark, from rating curve extended above 23,000 ft^3/s (651 m^3/s); minimum observed, 115 ft^3/s (3.26 m^3/s) Mar. 1, 1929.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 23, 1948, reached a stage of 14.3 ft (4.36 m), from floodmarks, discharge, 30,000 ft^3/s (850 m^3/s).

MONTHLY AND ANNUAL MEAN DISCHARGES 1911-12, 1916, 1919, 1921, 1930-33, 1944

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	1760	299	850	424	0.50	3.1
NOVEMBER	1960	240	860	470	.55	3.1
DECEMBER	1070	218	588	268	.46	2.1
JANUARY	668	211	444	140	.31	1.6
FEBRUARY	862	207	477	161	.34	1.7
MARCH	1460	257	731	392	.54	2.7
APRIL	6240	1090	3310	1340	.41	12
MAY	11000	5650	8170	1710	.21	29.7
JUNE	15200	3190	7690	4000	.52	28
JULY	6440	1010	2640	1480	.56	9.6
AUGUST	1470	547	940	290	.31	3.4
SEPTEMBER	1920	424	782	401	.51	2.8
ANNUAL	3380	1260	2290	643	.28	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1912, 1916, 1919, 1921, 1930-33, 1945-47

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	267	203	180	164	-----	-----
3	273	210	187	172	-----	-----
7	295	229	203	184	-----	-----
14	329	256	225	201	-----	-----
30	360	281	245	218	-----	-----
60	397	308	268	238	-----	-----
90	446	338	286	246	-----	-----
120	504	371	308	260	-----	-----
183	599	440	366	311	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
--	--	--	--	--	--	--

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1911-12, 1916, 1919, 1921, 1930-33, 1945-47

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	15900	23400	29400	-----	-----	-----
3	14600	19800	23600	-----	-----	-----
7	12700	17000	20100	-----	-----	-----
15	11300	15000	17500	-----	-----	-----
30	9660	12600	14500	-----	-----	-----
60	8120	10200	11500	-----	-----	-----
90	6700	8510	9540	-----	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1911-12, 1916, 1919, 1921, 1930-33, 1944

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
15300	9520	6980	5230	3610	1640	1130	848	673	535	441	359	287	229	200	184	164

12358500 MIDDLE FORK FLATHEAD RIVER NEAR WEST GLACIER, MT

LOCATION.--Lat 48°29'43", long 114°00'33", in S½SW¼NE¼ sec.34, T.32 N., R.19 W., Flathead County, Hydrologic Unit 17010207, on left bank 0.8 mi (1.3 km) downstream from McDonald Creek, 1.3 mi (2.1 km) west of West Glacier, and 3.8 mi (6.1 km) upstream from mouth.

DRAINAGE AREA.--1,128 mi^2 (2,922 km^2).

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 (953.634 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 22, 1950, nonrecording gage at present site and datum.

REMARKS.--A few small diversions for irrigation of hay meadows above station.

AVERAGE DISCHARGE.--40 years, 2,948 ft^3/s (83.49 m^3/s), 35.49 in/yr (901 mm/yr), 2,136,000 acre-ft/yr (2.63 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 140,000 ft^3/s (3,960 m^3/s) June 9, 1964, gage height, 36.46 ft (11.113 m), from floodmarks, from rating curve extended above 31,000 ft^3/s (878 m^3/s), on basis of contracted opening measurement at gage height, 19.42 ft (5.919 m) and flood volume-hydrographic comparison; minimum, less than 173 ft^3/s (4.90 m^3/s) Nov. 27, 1952 (stage below intake pipe).

MONTHLY AND ANNUAL MEAN DISCHARGES 1940-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	3000	367	1090	689	0.63	3.1
NOVEMBER	2190	279	1020	543	.53	2.9
DECEMBER	2600	262	911	564	.62	2.6
JANUARY	2420	319	695	379	.55	2.0
FEBRUARY	2690	300	700	444	.63	2.0
MARCH	2640	307	766	412	.54	2.2
APRIL	7090	664	3020	1420	.47	8.5
MAY	14700	5260	9940	2390	.24	28.2
JUNE	19900	3580	10700	4070	.38	30.3
JULY	8160	1250	4120	1830	.44	11.7
AUGUST	2360	576	1390	449	.32	3.9
SEPTEMBER	2510	551	962	412	.43	2.7
ANNUAL	4070	1440	2950	662	.22	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1941-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	361	281	246	219	192	-----
3	376	295	259	231	203	-----
7	403	318	279	249	219	-----
14	427	342	303	274	245	-----
30	469	374	330	298	264	-----
60	510	394	345	310	276	-----
90	560	424	369	329	290	-----
120	633	463	396	349	304	-----
183	770	555	468	408	350	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1939-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
17800	21900	28500	34000	41200	48300	62700

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1940-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	18800	28100	36000	48700	60300	-----
3	18400	25600	30700	37400	42600	-----
7	16900	22200	25300	28800	31100	-----
15	15100	19400	21700	24100	25600	-----
30	13400	16600	18100	19600	20400	-----
60	10900	13100	14100	15000	15500	-----
90	8850	10600	11300	12000	12300	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1940-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
19000	12600	8850	6370	4540	2240	1470	1090	851	689	560	447	384	325	293	275	225

12359000 SOUTH FORK FLATHEAD RIVER AT SPOTTED BEAR RANGER STATION NEAR HUNGRY HORSE, MT

LOCATION.--Lat 47°55'20", long 113°13'25", in SE¼SW¼ sec.17, T.26 N., R.15 W., Flathead County, Hydrologic Unit 17010209, on left bank 1,000 ft (305 m) upstream from Spotted Bear River and 40 mi (64 km) southeast of Hungry Horse.

DRAINAGE AREA.--958 mi^2 (2,481 km^2).

PERIOD OF RECORD.--August 1948 to September 1957, August 1959 to September 1967.

GAGE.--Water-stage recorder. Altitude of gage is 3,670 ft (1,119 m), from river profile map.

REMARKS.--No diversion or regulation above station.

AVERAGE DISCHARGE.--17 years, 1,935 ft^3/s (54.80 m^3/s), 1,401,000 acre-ft/yr (1.73 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,600 ft^3/s (442 m^3/s) June 21, 1950, gage height, 10.54 ft (3.212 m); minimum daily, 160 ft^3/s (4.53 m^3/s) Feb. 5-8, 1949.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May-June 1948 reached a stage of 14.00 ft (4.267 m) about May 22, discharge, 22,000 ft^3/s (623 m^3/s), by slope-area determination of peak flow.

MONTHLY AND ANNUAL MEAN DISCHARGES 1949-57, 1960-67

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	2220	237	623	479	0.77	2.7
NOVEMBER	1370	197	529	313	.59	2.3
DECEMBER	1010	202	452	223	.49	2.0
JANUARY	672	205	349	115	.33	1.5
FEBRUARY	883	210	386	191	.50	1.7
MARCH	760	180	395	135	.34	1.7
APRIL	3330	610	1760	843	.48	7.6
MAY	9170	4270	6800	1500	.22	29.3
JUNE	11500	4460	7950	2290	.29	34.3
JULY	5890	1080	2720	1380	.51	11.7
AUGUST	1430	418	730	244	.33	3.2
SEPTEMBER	1250	294	484	230	.47	2.1
ANNUAL	2360	1470	1940	284	.15	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1950-57, 1961-67

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	200	161	143	129	-----	-----
3	213	171	150	134	-----	-----
7	232	186	164	147	-----	-----
14	252	203	181	164	-----	-----
30	273	219	197	180	-----	-----
60	290	234	214	201	-----	-----
90	312	249	227	212	-----	-----
120	333	263	238	222	-----	-----
183	391	306	274	252	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1948-67

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
13100	15100	18400	20400	23500	27300	34900

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1949-57, 1960-67

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	14600	18700	21600	25700	-----	-----
3	13800	17200	19300	22200	-----	-----
7	12400	14700	16100	17600	-----	-----
15	10900	13100	14400	16100	-----	-----
30	9550	11200	12200	13300	-----	-----
60	7690	8920	9610	10400	-----	-----
90	6070	7000	7500	8050	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1949-57, 1960-67

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
13700	9260	6410	4190	2730	1250	751	553	443	370	317	267	232	200	182	165	148

12359800 SOUTH FORK FLATHEAD RIVER ABOVE TWIN CREEK, NEAR HUNGRY HORSE, MT

LOCATION.--Lat 47°58'45", long 113°33'36", in NE¼NW¼NE¼ sec.36, T.26 N., R.16 W., Flathead County, Hydrologic Unit 17010209, Flathead National Forest, on left bank 0.1 mi (0.2 km) downstream from Tin Creek, 0.4 mi (0.6 km) upstream from Twin Creek, 36.3 mi (58.4 km) southeast of Hungry Horse, and at mile 46.7 (75.1 km).

DRAINAGE AREA.--1,160 mi^2 (3,004 km^2).

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,575 ft (1,090 m), from river-profile map.

REMARKS.--No known diversions above station.

AVERAGE DISCHARGE.--15 years, 2,333 ft^3/s (66.07 m^3/s), 27.32 in/yr (694 mm/yr), 1,690,000 acre-ft/yr (2.08 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,200 ft^3/s (855 m^3/s) June 16, 1974, gage height, 15.20 ft (4.633 m); minimum, 156 ft^3/s (4.42 m^3/s) Dec. 8, 1971, and Dec. 21, 1976 (result of freezeups); minimum gage height, 4.30 ft (1.311 m) Dec. 21, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 8, 1964, reached a stage of 20.87 ft (6.361 m), from high-water profile; discharge, 50,900 ft^3/s (1,440 m^3/s), by slope-area measurement of peak flow.

MONTHLY AND ANNUAL MEAN DISCHARGES 1965-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	1320	314	580	293	0.51	2.1
NOVEMBER	1160	328	580	266	.46	2.1
DECEMBER	1320	249	507	278	.55	1.8
JANUARY	1200	226	477	254	.53	1.7
FEBRUARY	2290	271	532	504	.95	1.9
MARCH	1340	270	597	320	.54	2.1
APRIL	4100	464	2020	1120	.55	7.2
MAY	12100	4740	7930	2120	.27	28.4
JUNE	15900	3810	9990	3530	.35	35.7
JULY	5900	844	3220	1360	.42	11.5
AUGUST	1330	425	877	284	.32	3.1
SEPTEMBER	1580	323	637	361	.57	2.3
ANNUAL	2990	1180	2330	537	.23	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1966-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	225	191	175	164	-----	-----
3	240	202	185	172	-----	-----
7	258	214	195	180	-----	-----
14	279	232	211	194	-----	-----
30	309	256	233	216	-----	-----
60	330	271	246	228	-----	-----
90	353	284	257	237	-----	-----
120	384	301	269	247	-----	-----
183	440	341	303	276	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1964-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
15100	18100	23600	27200	32000	36000	45800

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1965-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	18600	23300	25700	28100	-----	-----
3	17500	22100	24500	27000	-----	-----
7	15600	19800	22000	24300	-----	-----
15	13500	17200	19100	21100	-----	-----
30	12000	14700	15900	16900	-----	-----
60	9470	11400	12200	13000	-----	-----
90	7520	8980	9580	10100	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1965-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
17400	10900	7470	5160	3450	1410	917	657	529	432	368	305	267	234	222	205	183

12360000 TWIN CREEK NEAR HUNGRY HORSE, MT

LOCATION.--Lat 47°59'06", long 113°33'38", in E½ sec.25, T.26 N., R.16 W., Flathead County, Hydrologic Unit 17010209, Flathead National Forest, on left bank 300 ft (91 m) upstream from road bridge, 0.1 mi (0.2 km) upstream from mouth, and 35.9 mi (57.8 km) southeast of Hungry Horse.

DRAINAGE AREA.--47.0 mi^2 (121.7 km^2).

PERIOD OF RECORD.--August 1948 to September 1956, October 1964 to September 1967.

REVISED RECORD.--WSP 1316: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,585 ft (1,093 m), from river-profile map.

REMARKS.--No regulation or diversion above station.

AVERAGE DISCHARGE.--11 years, 121 ft^3/s (3.427 m^3/s), 34.96 in/yr (888 mm/yr), 87,600 acre-ft/yr (108 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,790 ft^3/s (79.0 m^3/s) May 19, 1954, gage height, 8.33 ft (2.539 m), from rating curve extended above 1,000 ft^3/s (28.3 m^3/s) on basis of slope-area measurement at gage height 8.1 ft (2.47 m); minimum, 3.9 ft^3/s (0.11 m^3/s) Mar. 8, 1952, Nov. 26, 1952, gage height, 1.77 ft (0.539 m), but may have been less during periods of ice effect.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 8, 1964, reached a stage of 12.34 ft (3.761 m), from high water-mark in well, 13.1 ft (3.99 m), from high-water profile, backwater from channel obstructions, discharge, 5,830 ft^3/s (165 m^3/s), by slope-area measurement of peak flow.

MONTHLY AND ANNUAL MEAN DISCHARGES 1949-56, 1965-67

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	65	8.1	29	19	0.66	2.0
NOVEMBER	76	7.0	35	22	.63	2.4
DECEMBER	112	6.7	36	28	.78	2.5
JANUARY	45	7.1	23	11	.48	1.6
FEBRUARY	80	7.8	27	20	.74	1.8
MARCH	45	15	31	9.6	.32	2.1
APRIL	347	82	205	79	.39	14.2
MAY	744	429	545	98	.18	37.8
JUNE	622	139	385	157	.41	26.7
JULY	152	31	87	37	.43	6.0
AUGUST	34	13	23	6.0	.26	1.6
SEPTEMBER	63	11	18	15	.82	1.3
ANNUAL	143	91	121	18	.15	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1950-56, 1966-67

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	9.7	6.9	5.5	-----	-----	-----
3	10	7.5	5.9	-----	-----	-----
7	11	8.1	6.5	-----	-----	-----
14	12	8.6	7.1	-----	-----	-----
30	12	9.1	7.7	-----	-----	-----
60	14	9.9	8.1	-----	-----	-----
90	16	11	8.7	-----	-----	-----
120	19	12	9.3	-----	-----	-----
183	24	16	12	-----	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1948-56; 1964-67

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1080	1320	1770	2060	2540	2820	4040

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1949-56, 1965-67

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	1080	1360	1560	-----	-----	-----
3	978	1230	1400	-----	-----	-----
7	851	1060	1200	-----	-----	-----
15	697	864	983	-----	-----	-----
30	611	722	799	-----	-----	-----
60	493	572	624	-----	-----	-----
90	389	443	475	-----	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1949-56, 1965-67

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
925	592	411	278	168	68	43	33	26	20	16	12	9.6	7.3	6.2	5.4	4.8

12361000 SULLIVAN CREEK NEAR HUNGRY HORSE, MT

LOCATION.--Lat 48°01'45", long 113°42'12", in NW¼SW¼ sec.12, T.26 N., R.17 W., Flathead County, Hydrologic Unit 17010209, Flathead National Forest, on left bank 0.3 mi (0.5 km) downstream from Quintonkon Creek, 1.7 mi (2.7 km) upstream from Hungry Horse Reservoir flowline, and 29.5 mi (47.5 km) southeast of Hungry Horse.

DRAINAGE AREA.--71.3 mi^2 (184.7 km^2).

PERIOD OF RECORD.--September 1948 to September 1956, August 1959 to September 1976.

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,630 ft (1,106 m), from topographic map.

REMARKS.--No known diversions above station.

AVERAGE DISCHARGE.--25 years, 225 ft^3/s (6.372 m^3/s), 42.86 in/yr (1,089 mm/yr), 163,000 acre-ft/yr (201 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,020 ft^3/s (142 m^3/s) June 8, 1964, gage height, 7.21 ft (2.198 m), in gage well, 8.3 ft (2.53 m), from outside floodmarks, from rating curve extended above 1,800 ft^3/s (51 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 10 ft^3/s (0.28 m^3/s) Nov. 26, 1952.

MONTHLY AND ANNUAL MEAN DISCHARGES 1949-56, 1960-76

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	406	20	89	85	0.95	3.3
NOVEMBER	224	18	96	58	.60	3.6
DECEMBER	236	17	80	55	.69	3.0
JANUARY	234	18	64	45	.71	2.4
FEBRUARY	250	21	69	54	.79	2.6
MARCH	263	24	75	51	.68	2.8
APRIL	537	75	272	123	.45	10.1
MAY	1190	612	837	146	.17	31.1
JUNE	1480	426	797	270	.34	29.6
JULY	423	71	197	81	.41	7.3
AUGUST	110	32	60	19	.32	2.2
SEPTEMBER	216	27	57	50	.87	2.1
ANNUAL	319	162	225	36	.16	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1950-56, 1961-76

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	24	19	16	13	-----	-----
3	25	20	16	14	-----	-----
7	27	21	18	16	-----	-----
14	28	22	19	17	-----	-----
30	31	24	21	19	-----	-----
60	35	26	22	20	-----	-----
90	41	29	24	20	-----	-----
120	47	32	26	22	-----	-----
183	60	40	31	26	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1948-56; 1960-76

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1450	1780	2270	2600	2990	3340	4170

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1949-56, 1960-76

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	1680	2150	2440	2800	-----	-----
3	1530	1900	2120	2390	-----	-----
7	1360	1640	1810	2000	-----	-----
15	1200	1440	1580	1740	-----	-----
30	1050	1240	1350	1480	-----	-----
60	846	981	1050	1130	-----	-----
90	665	761	812	866	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1949-56, 1960-76

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
1560	1000	695	487	336	170	109	78	60	46	37	29	24	20	18	17	14

12361500 GRAVES CREEK NEAR HUNGRY HORSE, MT

LOCATION.--Lat 48°07'36", long 113°48'33", in SE¼ sec.1, T.27 N., R.18 W., Flathead County, Hydrologic Unit 17010209, Flathead National Forest, on left bank 300 ft (91 m) upstream from bridge on west shore road, 500 ft (152 m) upstream from Hungry Horse Reservoir flow line, and 21.0 mi (33.8 km) southeast of Hungry Horse.

DRAINAGE AREA.--27.0 mi^2 (69.9 km^2).

PERIOD OF RECORD.--August 1948 to September 1956, October 1964 to September 1967.

GAGE.--Water-stage recorder. Altitude of gage is 3,600 ft (1,097 m), from topographic map. Prior to Oct. 1, 1951, at site 2.5 mi (4.0 km) downstream at different datum.

REMARKS.--No known regulation or diversion above station.

AVERAGE DISCHARGE.--11 years, 135 ft^3/s (3.823 m^3/s), 67.91 in/yr (1,725 mm/yr), 97,740 acre-ft (121 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,780 ft^3/s (107 m^3/s) June 18, 1965, gage height, 6.27 ft (1.911 m), from rating curve extended above 1,300 ft^3/s (36.8 m^3/s) on basis of slope-area measurement at gage height 5.83 ft (1.777 m); minimum daily, 4.5 ft^3/s (0.13 m^3/s) Nov. 26, 1952.

MONTHLY AND ANNUAL MEAN DISCHARGES 1949-56, 1965-67

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	168	8.9	63	53	0.83	3.9
NOVEMBER	100	8.4	60	33	.55	3.7
DECEMBER	133	9.0	54	38	.70	3.4
JANUARY	59	11	31	14	.44	1.9
FEBRUARY	95	11	31	23	.72	1.9
MARCH	54	18	29	10	.35	1.8
APRIL	187	36	117	52	.44	7.2
MAY	615	248	429	103	.24	26.6
JUNE	736	358	532	126	.24	33
JULY	390	70	193	96	.50	12
AUGUST	81	24	41	18	.44	2.5
SEPTEMBER	101	13	34	26	.78	2.1
ANNUAL	167	105	135	21	.15	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1950-56, 1966-67

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	14	8.9	6.7	-----	-----	-----
3	15	9.5	7.2	-----	-----	-----
7	15	10	8.0	-----	-----	-----
14	16	11	8.6	-----	-----	-----
30	17	12	9.6	-----	-----	-----
60	20	13	10	-----	-----	-----
90	23	15	12	-----	-----	-----
120	28	17	13	-----	-----	-----
183	41	25	19	-----	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1948-56; 1965-67

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
960	1220	1700	2020	2440	2780	3730

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1949-56, 1965-67

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	1000	1290	1530	-----	-----	-----
3	933	1110	1230	-----	-----	-----
7	833	935	990	-----	-----	-----
15	727	822	871	-----	-----	-----
30	628	721	771	-----	-----	-----
60	505	577	621	-----	-----	-----
90	401	450	479	-----	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1949-56, 1965-67

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
882	615	422	296	202	103	62	46	36	28	22	17	13	9.6	8.7	7.9	6.1

12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT

LOCATION.--Lat 48°21'24", long 114°02'12", in SW¼SE¼SW¼ sec.16, T.30 N., R.19 W., Flathead County, Hydrologic Unit 17010209, on right bank 1.7 mi (2.7 km) downstream from Hungry Horse Dam, 3.5 mi (5.6 km) upstream from mouth, and 6.8 mi (10.9 km) east of Columbia Falls and at mile 152.2 (244.9 km).

DRAINAGE AREA.--1,663 mi^2 (4,307 km^2).

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. Datum of gage is 3,040 ft (926.6 m) National Geodetic Vertical Datum of 1929 (levels by the U.S. Water and Power Resources Service). September 1910 to September 1916, nonrecording gage, and Apr. 23, 1923, to Sept. 30, 1928, water-stage recorder at site 3 mi (5 km) downstream at different datum. Oct. 1, 1928, to Sept. 30, 1952, water-stage recorder at site 1.5 mi (2.4 km) downstream at different datum.

REMARKS.--Flow regulated by Hungry Horse Reservoir since Sept. 21, 1951.

AVERAGE DISCHARGE.--51 years (water years, 1929-79), 3,571 ft^3/s (101.1 m^3/s), 29.16 in/yr (741 mm/yr), 2,587,000 acre-ft/yr (3.19 km^3/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 (1,310 m^3/s) June 19, 1916, gage height, 16.6 ft (5.06 m), site and datum then in use, from rating curve extended above 20,000 ft^3/s (566 m^3/s); minimum observed, 7.3 ft^3/s (0.21 m^3/s) Sept. 24, 1951, gage height, 0.52 ft (0.158 m), dam closure, site and datum then in use; minimum daily, 7.3 ft^3/s (0.21 m^3/s) Sept. 24, 1951.

MONTHLY AND ANNUAL MEAN DISCHARGES 1929-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	8800	387	2260	1980	0.88	5.4
NOVEMBER	9090	204	2520	2260	.90	6.0
DECEMBER	8990	313	3290	2710	.82	7.9
JANUARY	10000	266	3250	3040	.94	7.8
FEBRUARY	9450	208	2570	2630	1.02	6.1
MARCH	14800	259	2620	2960	1.13	6.3
APRIL	13300	202	5440	3520	.65	13
MAY	18100	211	7200	5600	.78	17.2
JUNE	25000	156	6350	5200	.82	15.2
JULY	9720	292	3210	1930	.60	7.7
AUGUST	6040	213	1520	1310	.86	3.6
SEPTEMBER	7480	355	1630	1700	1.04	3.9
ANNUAL	5330	1010	3490	910	.26	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1930-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	296	153	93	56	28	17
3	309	162	100	61	32	20
7	358	192	116	70	35	21
14	388	203	129	83	47	31
30	452	279	216	175	137	116
60	634	393	308	253	203	175
90	850	531	421	351	288	253
120	1080	642	487	386	297	248
183	1400	769	547	407	287	225

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1929-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	16000	23400	28500	35200	40300	45600
3	15200	21900	26500	32400	37000	41700
7	14000	19700	23600	28700	32600	36700
15	12700	17400	20700	24900	28200	31600
30	11400	15400	18000	21500	24100	26700
60	9530	12600	14600	16800	18500	20000
90	8080	10500	11900	13400	14400	15300

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1929-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
19600	11400	9680	8270	6800	4140	2480	1460	944	665	483	357	194	154	142	135	34

12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

PERIOD OF RECORD.--1930-51.

REMARKS.--Data below based on period of record prior to regulation by Hungry Horse Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1930-51

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	2900	432	958	693	0.72	2.4
NOVEMBER	4130	361	1210	919	.76	3.0
DECEMBER	3500	313	1150	838	.73	2.9
JANUARY	2730	266	861	550	.64	2.2
FEBRUARY	2210	302	861	536	.62	2.2
MARCH	2950	402	1080	615	.57	2.7
APRIL	11800	1840	5360	2550	.48	13.5
MAY	18100	6610	12900	3130	.24	32.3
JUNE	25000	3970	10500	5030	.48	26.3
JULY	9720	1150	3350	2220	.66	8.4
AUGUST	2280	557	1030	416	.41	2.6
SEPTEMBER	978	498	675	141	.21	1.7
ANNUAL	4650	1650	3330	930	.28	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1931-51

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	433	328	280	243	-----	-----
3	444	335	285	247	-----	-----
7	463	353	303	265	-----	-----
14	487	376	324	284	-----	-----
30	526	401	344	300	-----	-----
60	569	427	366	321	-----	-----
90	619	450	386	343	-----	-----
120	709	485	406	354	-----	-----
183	795	529	435	373	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1930-51; 1964

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
19200	24600	33400	38500	45000	49100	58100

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1930-51

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	23400	30300	34200	38500	-----	-----
3	22000	28200	31600	35200	-----	-----
7	19600	25200	28400	31900	-----	-----
15	17000	22100	25000	28400	-----	-----
30	15000	19200	21600	24200	-----	-----
60	12500	15400	16900	18400	-----	-----
90	10100	12500	13600	14700	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1930-51

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
23400	14600	10400	7530	5210	2470	1500	1080	858	693	565	464	384	315	285	247	21

12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

PERIOD OF RECORD.--1953-79.

REMARKS.--Data below based on period of record after completion of Hungry Horse Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1953-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	8800	387	3440	2030	0.59	7.7
NOVEMBER	9090	204	3650	2500	.69	8.2
DECEMBER	8990	532	5220	2320	.44	11.7
JANUARY	10000	525	5400	2720	.50	12.1
FEBRUARY	9450	208	4120	2790	.68	9.2
MARCH	14800	259	4020	3490	.87	9.0
APRIL	13300	202	5640	4250	.75	12.7
MAY	5000	211	2470	1280	.52	5.5
JUNE	7350	156	2980	2000	.67	6.7
JULY	6910	292	3160	1760	.56	7.1
AUGUST	6040	213	1970	1640	.84	4.4
SEPTEMBER	7480	355	2490	1970	.79	5.6
ANNUAL	5330	1010	3710	844	.23	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1954-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	155	140	137	135	134	-----
3	167	143	137	133	131	-----
7	208	155	138	126	117	-----
14	247	162	137	122	109	-----
30	406	225	168	133	103	-----
60	775	414	290	213	148	-----
90	1240	768	586	464	353	-----
120	1640	1060	812	639	478	-----
183	2410	1570	1130	817	529	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1953-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	12300	15700	17600	19700	21100	-----
3	11900	14900	16500	18300	19400	-----
7	11400	13800	15100	16300	17100	-----
15	10800	13100	14300	15600	16400	-----
30	9620	11600	12600	13700	14300	-----
60	8160	9740	10500	11100	11500	-----
90	7080	8530	9150	9680	9960	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1953-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
13700	10400	9350	8540	7430	5460	3550	2410	1350	615	399	199	167	148	141	138	135

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT

LOCATION.--Lat 48°21'43", long 114°11'02", in NW¼NW¼SE¼ sec.17, T.30 N., R.20 W., Flathead County, Hydrologic Unit 17010208, on right bank 200 ft (61 m) downstream from county road bridge at Columbia Falls, 5.7 mi (9.2 km) downstream from South Fork, and at mile 143.0 (230.1 km).

DRAINAGE AREA.--4,464 mi^2 (11,562 km^2).

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 (907.594 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Nov. 12, 1928, nonrecording gage on bridge 200 ft (61 m) upstream at datum 0.18 ft (0.058 m) higher.

REMARKS.--South Fork Flathead River, which contributes about one-third of flow, completely regulated by Hungry Horse Reservoir 10.9 mi (17.5 km) upstream since Sept. 21, 1951.

AVERAGE DISCHARGE.--51 years, 9,753 ft^3/s (276.2 m^3/s), 29.67 in/yr (754 mm/yr), 7,066,000 acre-ft/yr (8.71 km^3/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 (4,980 m^3/s) June 9, 1964, gage height, 25.58 ft (7.797 m), from floodmarks, from rating curve extended above 75,000 ft^3/s (2,120 m^3/s) on basis of slope-area measurement of peak flow; minimum, 798 ft^3/s (22.6 m^3/s) Dec. 8, 1929, gage height, -0.08 ft (-0.024 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a stage of 22.7 ft (6.92 m), from floodmarks, discharge, 142,000 ft^3/s (4,020 m^3/s), from rating curve extended above 75,000 ft^3/s (2,120 m^3/s) on basis of slope-area measurment of peak flow in 1964.

MONTHLY AND ANNUAL MEAN DISCHARGES 1929-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	11200	1430	4610	2520	0.55	4.0
NOVEMBER	11100	1180	4790	2680	.56	4.1
DECEMBER	10600	1110	5180	2910	.56	4.5
JANUARY	11200	928	4800	3250	.68	4.1
FEBRUARY	11100	905	4080	2840	.70	3.5
MARCH	16000	1080	4290	3200	.75	3.7
APRIL	32200	3830	12300	6390	.52	10.6
MAY	46500	11900	28400	8460	.30	24.5
JUNE	61900	11200	27700	10200	.37	23.9
JULY	25100	4180	11400	5030	.44	9.9
AUGUST	8560	1980	4590	1660	.36	4.0
SEPTEMBER	9030	1790	3780	1920	.51	3.3
ANNUAL	13700	4820	9670	2160	.22	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1930-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	1340	1090	980	902	823	775
3	1420	1140	1020	938	858	810
7	1520	1210	1090	1010	929	885
14	1690	1290	1140	1030	935	880
30	1960	1410	1200	1060	921	843
60	2400	1630	1330	1130	937	829
90	2830	1830	1440	1180	941	807
120	3280	2080	1610	1290	996	833
183	3950	2430	1830	1420	1050	849

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1929-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	51500	70100	82600	98500	110000	123000
3	49500	64800	73600	83600	90400	96600
7	44600	57300	64200	71700	76500	80900
15	39500	50600	56800	63600	68200	72300
30	35400	44400	49100	54100	57200	59800
60	29400	36100	39400	42800	44900	46700
90	24400	29700	32500	35300	37100	38600

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1929-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
52100	34100	25300	19200	14400	10300	7600	5340	3740	2780	2160	1700	1420	1200	1090	1000	883

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT--Continued

PERIOD OF RECORD.--1930-51.

REMARKS.--Data below based on period of record prior to regulation by Hungry Horse Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1930-51

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	8550	1430	3070	2060	0.67	2.8
NOVEMBER	11100	1180	3500	2410	.69	3.2
DECEMBER	9040	1110	3090	2160	.70	2.8
JANUARY	7260	928	2360	1410	.60	2.1
FEBRUARY	5960	905	2280	1260	.55	2.1
MARCH	6700	1080	2730	1350	.50	2.5
APRIL	32200	3960	13400	6740	.50	12.2
MAY	46500	18100	34200	8300	.24	31.1
JUNE	61900	11300	28600	12300	.43	26.1
JULY	25100	4180	10400	5650	.54	9.5
AUGUST	6890	1980	3710	1290	.35	3.4
SEPTEMBER	5090	1790	2590	744	.29	2.4
ANNUAL	12900	4820	9180	2490	.27	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1931-51

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1310	1030	922	846	-----	-----
3	1360	1070	956	877	-----	-----
7	1420	1110	991	904	-----	-----
14	1520	1180	1040	944	-----	-----
30	1610	1240	1090	978	-----	-----
60	1740	1320	1150	1040	-----	-----
90	1920	1410	1210	1080	-----	-----
120	2120	1490	1260	1120	-----	-----
183	2360	1650	1390	1220	-----	-----

[5]MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1922-23; 1929-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
45800	70000	90000	101000	114000	123000	130000

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1930-51

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	61400	77400	85300	93100	-----	-----
3	57900	72700	79800	86600	-----	-----
7	51900	65400	72200	78900	-----	-----
15	45300	58100	64900	72200	-----	-----
30	40200	50500	55900	61500	-----	-----
60	33500	41000	44600	47900	-----	-----
90	27400	33500	36300	39000	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1930-51

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
59700	38000	28100	20500	14400	6900	4420	3240	2580	2160	1840	1480	1260	1080	989	922	864

[5]Annual peak discharges after 1951 adjusted to natural flow conditions

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT--Continued

PERIOD OF RECORD.--1953-79.

REMARKS.--Data below based on period of record after completion of Hungry Horse Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1953-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	11200	1560	5780	2230	0.39	4.7
NOVEMBER	10300	1560	5860	2520	.43	4.8
DECEMBER	10600	2280	7060	2160	.31	5.8
JANUARY	11200	1550	6980	2850	.41	5.7
FEBRUARY	11100	1300	5720	2870	.50	4.7
MARCH	16000	1600	5740	3680	.64	4.7
APRIL	21800	3830	11400	6120	.54	9.4
MAY	33700	11900	23600	5450	.23	19.3
JUNE	45500	11200	27300	8480	.31	22.4
JULY	24500	5930	12500	4510	.36	10.2
AUGUST	8560	2770	5400	1580	.29	4.4
SEPTEMBER	9030	2200	4880	2000	.41	4.0
ANNUAL	13700	6750	10200	1810	.18	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1953-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NONEXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1370	1160	1050	976	895	-----
3	1460	1210	1100	1030	960	-----
7	1590	1320	1220	1160	1110	-----
14	1910	1460	1290	1170	1070	-----
30	2450	1750	1470	1270	1070	-----
60	3330	2380	1960	1660	1350	-----
90	4150	2950	2380	1950	1530	-----
120	4590	3510	3000	2610	2220	-----
183	5770	4660	4030	3510	2930	-----

[4]MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1922-23; 1929-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
40000	47000	57000	66000	74000	79000	84000

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1953-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	44100	62100	76500	98000	116000	-----
3	43700	57100	65500	75600	82700	-----
7	40100	49800	54500	59200	62000	-----
15	36400	44300	47900	51300	53200	-----
30	32800	38800	41200	43200	44100	-----
60	27400	31500	33000	34100	34600	-----
90	22900	26600	28200	29500	30200	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1953-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
43600	31000	23700	18800	14600	11100	9470	7690	5800	4220	3000	2030	1640	1380	1280	1170	1050

[4]Annual peak discharges prior to 1953 adjusted to reflect normal operation of Hungry Horse reservoir

12365000 STILLWATER RIVER NEAR WHITEFISH, MT

LOCATION.--Lat 48°19'08", long 114°23'11", in NE¼SW¼ sec.34, T.30 N., R.22 W., Flathead County, Hydrologic Unit 17010210, on right bank 600 ft (180 m) downstream from road bridge, 6.2 mi (10.0 km) southwest of Whitefish, 10.6 mi (17.1 km) upstream from Whitefish River, and 13.6 mi (21.9 km) upstream from mouth.

DRAINAGE AREA.--524 mi^2 (1,357 km^2).

PERIOD OF RECORD.--October and November 1930 (monthly discharge only, published in WSP 1316), December 1930 to September 1950, October 1972 to current year.

REVISED RECORDS.--WSP 1736: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,953.26 ft (900.154 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Diversions for irrigation of about 200 acres (809,000 m^2) above station.

AVERAGE DISCHARGE.--27 years (water years 1931-50, 1973-1979), 336 ft^3/s (9.516 m^3/s), 8.71 in/yr (221 mm/yr), 243,400 acre-ft/yr (300 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,330 ft^3/s (123 m^3/s) May 26, 1948, gage height, 20.90 ft (6.370 m), from floodmark; minimum daily, 40 ft^3/s (1.13 m^3/s) Dec. 24, 1944.

MONTHLY AND ANNUAL MEAN DISCHARGES 1931-50, 1973-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	271	53	109	43	0.40	2.7
NOVEMBER	291	54	121	54	.44	3.0
DECEMBER	295	51	110	49	.45	2.7
JANUARY	495	59	109	83	.76	2.7
FEBRUARY	274	64	99	43	.44	2.5
MARCH	513	77	133	81	.61	3.3
APRIL	1860	138	602	403	.67	14.9
MAY	2490	265	1240	570	.46	30.9
JUNE	1920	235	870	459	.53	21.6
JULY	728	95	353	178	.50	8.8
AUGUST	328	56	162	76	.47	4.0
SEPTEMBER	206	55	116	43	.37	2.9
ANNUAL	558	124	336	136	.40	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1932-50, 1974-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NONEXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	62	51	46	44	41	-----
3	63	52	48	45	42	-----
7	65	54	49	46	43	-----
14	68	56	51	48	45	-----
30	73	60	55	51	48	-----
60	76	63	58	55	51	-----
90	81	66	61	57	53	-----
120	87	70	64	60	56	-----
183	94	75	69	65	62	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1931-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
861	1540	2520	3180	4010	4620	5220

WEIGHTED SKEW = -0.382

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1931-50, 1973-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	1640	2600	3170	3790	4190	-----
3	1620	2580	3140	3740	4130	-----
7	1560	2470	2990	3550	3910	-----
15	1450	2250	2700	3180	3470	-----
30	1310	1980	2340	2710	2930	-----
60	1100	1640	1940	2240	2430	-----
90	906	1350	1590	1840	2000	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1931-50, 1973-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
2180	1450	981	674	467	250	166	132	113	97	83	71	62	55	53	50	46

12366000 WHITEFISH RIVER NEAR KALISPELL, MT

LOCATION.--Lat 48°19'13", long 114°16'39", in SW¼SE¼NW¼ sec.34, T.30 N., R.21 W., Flathead County, Hydrologic Unit 17010210, on right bank 160 ft (49 m) upstream from road bridge, 8.0 mi (12.9 km) north of Kalispell and 8.3 mi (13.4 km) upstream from mouth.

DRAINAGE AREA.--170 mi^2 (440 km^2).

PERIOD OF RECORD.--July to November 1928, April 1929 to September 1950, annual maximum, water year 1964, October 1972 to current year. Prior to 1964, published as Whitefish Creek near Kalispell.

GAGE.--Water-stage recorder. Datum of gage is 2,969.83 ft (905.204 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 16, 1930, nonrecording gage at site 200 ft (61 m) downstream at datum 10.00 ft (3.048 m) lower. Oct. 16, 1930, to Sept. 30, 1950, water-stage recorder on left bank at same datum.

REMARKS.--Some regulation by Whitefish Lake. Diversions for irrigation of about 650 acres (2.6 km^2) above station.

AVERAGE DISCHARGE.--28 years (1929-50, 1972-79), 192 ft^3/s (5.437 m^3/s), 139,100 acre-ft/yr (172 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,580 ft^3/s (44.7 m^3/s) June 24, 1974, gage height, 4.91 ft (1.497 m); minimum, 4.5 ft^3/s (0.13 m^3/s) Oct. 18, 1934, gage height, 0.83 ft (0.253 m).

MONTHLY AND ANNUAL MEAN DISCHARGES 1930-50, 1973-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	150	10	72	33	0.46	3.1
NOVEMBER	177	20	75	36	.48	3.3
DECEMBER	231	23	74	41	.56	3.2
JANUARY	209	14	69	39	.57	3.0
FEBRUARY	157	16	68	33	.48	2.9
MARCH	212	49	96	42	.44	4.2
APRIL	549	85	226	107	.47	9.8
MAY	887	214	553	183	.33	24
JUNE	1190	211	617	243	.39	26.8
JULY	695	89	267	146	.55	11.6
AUGUST	200	30	104	46	.44	4.5
SEPTEMBER	149	24	84	32	.38	3.6
ANNUAL	320	102	192	60	.31	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1930-50, 1974-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	24	12	8.1	5.6	3.6	-----
3	25	13	8.7	6.0	3.9	-----
7	27	14	9.3	6.5	4.2	-----
14	30	16	11	7.7	5.1	-----
30	36	21	15	11	7.7	-----
60	45	29	22	18	13	-----
90	51	35	28	23	18	-----
120	55	40	34	29	25	-----
183	63	47	42	37	34	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1929-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
605	820	1100	1270	1490	1640	1830

WEIGHTED SKEW = -0.200

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1930-50, 1973-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	824	1090	1250	1430	1560	-----
3	816	1080	1240	1430	1560	-----
7	792	1050	1200	1390	1520	-----
15	752	999	1150	1330	1460	-----
30	698	919	1050	1200	1300	-----
60	593	775	877	988	1060	-----
90	494	651	739	836	899	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1930-50, 1973-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
1030	731	528	405	299	170	123	96	79	65	54	41	24	15	11	8.7	5.7

12367500 ASHLEY CREEK NEAR KALISPELL, MT

LOCATION.--Lat 48°08'58", long 114°25'55", near center of NW¼ sec.32, T.28 N., R.22 W., Flathead County, Hydrologic Unit 17010208, near center of span on downstream side of road bridge, 1.0 mi (1.6 km) downstream from Smith Lake, 3.0 mi (4.8 km) upstream from headgate of Ashley Irrigation District Canal, 5.6 mi (9.0 km) west of Kalispell, and at mile 26.2 (42.2 km).

DRAINAGE AREA.--195 mi^2 (505 km^2).

PERIOD OF RECORD.--April 1931 to March 1933, April 1934 to September 1950, July 1969 to January 1970 (discharge measurements only), October 1972 to September 1974.

GAGE.--Nonrecording gage and crest-stage gage. Datum of gage is 3,141.43 ft (957.508 m) National Geodetic Vertical Datum of 1929. Prior to July 1969, nonrecording gages at sites 1.5 mi (2.4 km) downstream at different datums.

REMARKS.--Diversions for irrigation of about 100 acres (405,000 m^2). Floodwater stores in Ashley Lake, usable capacity, 20,000 acre-ft (24.7 hm^3) for release during irrigation season.

AVERAGE DISCHARGE.--19 years (1932, 1935-50, 1972-74), 30.8 ft^3/s (0.872 m^3/s), 22,310 acre-ft/yr (27.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 749 ft^3/s (21.2 m^3/s) May 27, 1948, gage height, 7.58 ft (2.310 m), from graph based on gage readings, site and datum then in use; no flow at times.

MONTHLY AND ANNUAL MEAN DISCHARGES 1932, 1935-50, 1973-74

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	19	0.00	6.4	6.1	0.95	1.7
NOVEMBER	22	.00	7.3	6.9	.95	2.0
DECEMBER	19	.00	5.8	5.4	.92	1.6
JANUARY	29	.00	6.8	8.1	1.19	1.8
FEBRUARY	27	.00	6.7	8.3	1.24	1.8
MARCH	66	1.7	17	14	.84	4.6
APRIL	171	5.7	67	56	.85	18.1
MAY	484	3.9	113	117	1.04	30.6
JUNE	368	1.3	82	89	1.08	22.2
JULY	115	.22	38	33	.88	10.2
AUGUST	52	.00	13	13	.97	3.6
SEPTEMBER	17	.00	6.6	5.8	.88	1.8
ANNUAL	109	1.5	31	27	.87	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1936-50, 1974

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.43	0.00	0.00	0.00	-----	-----
3	.58	.00	.00	.00	-----	-----
7	.74	.00	.00	.00	-----	-----
14	1.0	.00	.00	.00	-----	-----
30	1.5	.00	.00	.00	-----	-----
60	2.1	.52	.00	.00	-----	-----
90	2.6	.86	.14	.00	-----	-----
120	3.3	1.1	.28	.00	-----	-----
183	4.2	1.2	.34	.00	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
--	--	--	--	--	--	--

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1932, 1935-50, 1973-74

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	96	220	345	565	-----	-----
3	95	218	342	559	-----	-----
7	92	214	336	546	-----	-----
15	88	206	320	511	-----	-----
30	82	189	290	456	-----	-----
60	70	159	241	369	-----	-----
90	61	137	204	305	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1932, 1935-50, 1973-74

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
274	158	82	47	36	24	17	12	6.2	3.6	1.9	.17	.10	.10	.10	.10	.10

12370000 SWAN RIVER NEAR BIGFORK, MT

LOCATION.--Lat 48°01'28", long 113°58'44", near center of S½SW¼ sec.11, T.26 N., R.19 W., Lake County, Hydrologic Unit 17010211, on left bank 0.2 mi (0.3 km) downstream from Johnson Creek, 0.4 mi (0.6 km) downstream from Swan Lake, 5.1 mi (8.2 km) southeast of Bigfork, and at mile 14.0 (22.5 km).

DRAINAGE AREA.--671 mi^2 (1,738 km^2).

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 (933.48 m) National Geodetic Vertical Datum of 1929 (from river-profile survey). Oct. 10, 1910, to May 22, 1911, nonrecording gage at site 10 mi (16 km) upstream at different datum. Apr. 28, 1922, to Oct. 14, 1930, nonrecording gage at site 800 ft (240 m) upstream at datum 1.9 ft (0.58 m) higher.

REMARKS.--Diversions for irrigation of about 360 acres (1.46 km^2) above station.

AVERAGE DISCHARGE.--57 years, 1,166 ft^3/s (33.02 m^3/s), 23.60 in/yr (599 mm/yr), 844,800 acre-ft/yr (1.04 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,890 ft^3/s (252 m^3/s) June 20, 1974, gage height, 7.34 ft (2.237 m); minimum observed, 193 ft^3/s (5.47 m^3/s) Jan. 26-29, 1930, gage height, 0.04 ft (0.012 m), site and datum then in use.

MONTHLY AND ANNUAL MEAN DISCHARGES 1923-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	1680	308	563	246	0.44	4.0
NOVEMBER	1510	290	584	238	.41	4.2
DECEMBER	1800	307	572	270	.47	4.1
JANUARY	1300	271	494	174	.35	3.5
FEBRUARY	1630	236	485	210	.43	3.5
MARCH	1620	244	573	236	.41	4.1
APRIL	3230	675	1520	610	.40	10.9
MAY	5470	1670	2910	746	.26	20.8
JUNE	5800	1430	3380	1070	.32	24.2
JULY	3310	609	1650	665	.40	11.8
AUGUST	1230	322	698	225	.32	5.0
SEPTEMBER	1100	290	540	184	.34	3.9
ANNUAL	1860	607	1170	270	.23	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1924-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	347	293	266	246	224	210
3	352	297	270	249	226	212
7	361	302	274	252	228	213
14	373	311	282	259	235	220
30	390	324	293	269	244	228
60	412	342	309	284	258	242
90	434	357	324	299	274	258
120	455	372	339	315	292	279
183	484	389	352	327	303	290

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1922-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
4070	5170	6510	7320	8280	8950	9590

WEIGHTED SKEW = 0.133

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1923-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	5160	6440	7150	7950	8470	8950
3	5020	6250	6950	7720	8230	8700
7	4640	5830	6520	7310	7840	8350
15	4210	5310	5980	6760	7300	7820
30	3810	4700	5220	5800	6200	6560
60	3290	3920	4250	4580	4790	4970
90	2800	3360	3640	3930	4110	4270

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1923-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
5410	3750	2950	2330	1850	1110	776	627	540	472	415	360	330	294	275	255	219

12371100 HELL ROARING CREEK NEAR POLSON, MT

LOCATION.--Lat 47°42'10", long 114°02'50", in NW¼NW¼ sec.4, T.22 N., R.19 W., Lake County, Hydrologic Unit 17010212, on left bank just downstream from power plant, 0.75 mi (1.21 km) upstream from mouth, and 7 mi (11 km) east of Polson.

DRAINAGE AREA.--6.41 mi^2 (16.60 km^2).

PERIOD OF RECORD.--June 1917 to September 1932. Published as "Big Creek near Polson, MT" in WSP 1316.

REVISED RECORDS.--WSP 1316: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,150 ft (960 m), by barometer.

REMARKS.--Records include water diverted by the Flathead irrigation project canal for irrigation of lands downstream, and the Polson municipal water-supply pipeline. Flow regulated by power plant and two reservoirs with a combined capacity of about 200 acre-ft (809,000 m^2).

AVERAGE DISCHARGE.-- 15 years (1917-32), 6.64 ft^3/s (0.188 m^3/s), 4,810 acre-ft/yr (5.93 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 104 ft^3/s (2.95 m^3/s) June 9, 1917, gage height, 2.4 ft (0.732 m); no flow at times during November and December 1922, when power plant was shut down.

MONTHLY AND ANNUAL MEAN DISCHARGES 1918-32

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	8.5	3.0	5.0	1.5	0.29	6.3
NOVEMBER	6.8	3.9	5.2	.86	.17	6.5
DECEMBER	8.2	4.1	5.2	1.1	.22	6.6
JANUARY	7.1	3.4	4.7	1.0	.21	5.9
FEBRUARY	5.8	3.5	4.5	.65	.15	5.6
MARCH	6.4	3.2	4.3	.87	.20	5.4
APRIL	15	2.9	7.2	3.4	.47	9.0
MAY	32	5.2	13	7.7	.59	16.5
JUNE	32	4.1	13	8.4	.64	16.5
JULY	18	3.3	6.8	3.7	.54	8.6
AUGUST	7.5	3.5	5.4	1.1	.20	6.8
SEPTEMBER	7.6	3.1	5.1	1.1	.21	6.4
ANNUAL	10	4.4	6.7	1.7	.25	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1919-32

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	2.3	1.9	1.7	1.5	-----	-----
3	2.8	2.4	2.2	2.0	-----	-----
7	3.0	2.6	2.4	2.2	-----	-----
14	3.3	2.8	2.5	2.3	-----	-----
30	3.5	3.1	2.9	2.7	-----	-----
60	3.9	3.5	3.4	3.3	-----	-----
90	4.1	3.7	3.6	3.4	-----	-----
120	4.2	3.9	3.7	3.6	-----	-----
183	4.5	4.1	3.9	3.7	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1917-67

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
13	29	59	87	128	163	203

WEIGHTED SKEW = -0.006

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1918-32

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	29	46	55	65	-----	-----
3	24	39	49	62	-----	-----
7	21	35	45	58	-----	-----
15	18	29	37	48	-----	-----
30	15	24	31	41	-----	-----
60	12	19	24	31	-----	-----
90	10	16	21	27	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1918-32

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
33	19	11	7.8	6.9	6.1	5.5	5.1	4.7	4.4	4.0	3.4	3.1	2.8	2.5	2.2	1.8

12372000 FLATHEAD RIVER NEAR POLSON, MT

LOCATION.--Lat 47°40'49", long 114°14'45", in SW¼NE¼SE¼ sec. 11, T.22 N., R.21 W., Lake County, Hydrologic Unit 17010212, on left bank 0.5 mi (0.8 km) downstream from Kerr Dam, 4.0 mi (6.4 km) west of Polson, 5.0 mi (8.0 km) downstream from Flathead Lake, and at mile 71.5 (115.0 km).

DRAINAGE AREA.--7,096 mi^2 (18,379 km^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 (820.735 m) National Geodetic Vertical Datum of 1929 (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 (10 km) downstream from present site, all at datum 2,629.20 ft (801.380 m) National Geodetic Vertical Datum of 1929 (from river-profile survey).

REMARKS.--Flow regulated by Flathead Lake (Kerr Dam) since April 1938 and Hungry Horse Reservoir since September 1951. Diversions above station for irrigation of about 10,000 acres (40 km^2). Flathead project pumps can divert up to 12,000 acre-ft (15 hm^3) per month when required for irrigation of lands downstream from station.

AVERAGE DISCHARGE.--72 years, 11,740 ft^3/s (332.5 m^3/s), 22.47 in/yr (571 mm/yr), 8,506,000 acre-ft/yr (10.5 km^3/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 (2,340 m^3/s) May 29, 1928, gage height, 17.2 ft (5.24 m), site and datum then in use; minimum probably less than 5.0 ft^3/s (0.14 m^3/s) Apr. 13, 1938; minimum daily, 32 ft^3/s (0.91 m^3/s) Apr. 12, 1938.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a stage of about 21 ft (6.4 m), present datum; discharge, about 110,000 ft^3/s (3,120 m^3/s), from lake elevation-discharge study.

MONTHLY AND ANNUAL MEAN DISCHARGES 1908-27, 1929-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	14000	2280	5900	2610	0.44	4.2
NOVEMBER	13400	1900	6280	3040	.48	4.5
DECEMBER	13600	1670	7090	3680	.52	5.1
JANUARY	16500	1570	7430	4250	.57	5.3
FEBRUARY	17300	1600	6960	4380	.63	5.0
MARCH	21300	1520	6290	3980	.63	4.5
APRIL	22300	2630	9420	5110	.54	6.8
MAY	49200	5960	25000	9410	.38	17.9
JUNE	64400	6400	34500	13100	.38	24.7
JULY	55600	4760	18000	9180	.51	12.9
AUGUST	17500	2340	7030	2710	.39	5.0
SEPTEMBER	11100	2690	5520	1860	.34	4.0
ANNUAL	17200	5200	11600	2680	.23	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1909-27, 1929-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	2400	1720	1420	1200	985	857
3	2510	1830	1540	1330	1130	710
7	2620	1950	1660	1460	1270	1150
14	2870	2150	1860	1650	1450	1340
30	3290	2450	2110	1860	1630	1490
60	3860	2760	2310	2000	1690	1510
90	4290	2960	2430	2050	1700	1490
120	4680	3160	2550	2130	1720	1490
183	5430	3610	2870	2350	1860	1590

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1908-27, 1929-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	47900	59500	64200	68100	70000	71400
3	47200	59100	64000	68100	70100	71500
7	45400	57800	63200	68000	70400	72200
15	42400	55200	61300	67100	70300	72900
30	38600	50200	55900	61300	64400	66900
60	32100	41500	46000	50400	52800	54800
90	26700	34300	38000	41600	43700	45400

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1908-27, 1929-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
57100	38800	28100	20900	15900	12000	9380	7470	5970	4630	3770	2880	2430	1960	1700	1510	1160

12372000 FLATHEAD RIVER NEAR POLSON, MT--Continued

PERIOD OF RECORD.--1909-27, 1929-37.

REMARKS.--Data below based on period of record before regulation by Kerr Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1909-27, 1929-37

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	7690	2280	4060	1320	0.32	3.0
NOVEMBER	13400	1900	4490	2490	.56	3.3
DECEMBER	10900	1670	4140	2230	.54	3.0
JANUARY	12100	1570	3680	2180	.59	2.7
FEBRUARY	7920	1600	3110	1200	.39	2.3
MARCH	7320	1520	3340	1320	.39	2.5
APRIL	22300	2630	7820	5190	.66	5.8
MAY	49200	11000	27800	8410	.30	20.4
JUNE	64400	17300	40900	12500	.31	30.1
JULY	55600	9060	22900	10300	.45	16.8
AUGUST	17500	4230	8720	2980	.34	6.4
SEPTEMBER	11100	3000	5000	1790	.36	3.7
ANNUAL	17200	7500	11400	2720	.24	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1910-27, 1929-37

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	2340	1890	1670	1490	1300	-----
3	2380	1930	1700	1520	1320	-----
7	2410	1950	1720	1530	1340	-----
14	2450	1990	1760	1590	1400	-----
30	2550	2090	1880	1730	1570	-----
60	2730	2190	1960	1790	1620	-----
90	2860	2240	2000	1830	1670	-----
120	3080	2330	2050	1850	1670	-----
183	3460	2610	2270	2040	1820	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1909-37

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
40100	51700	66900	76600	88700	97500	106000

WEIGHTED SKEW = 0.053

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1909-27, 1929-37

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	50300	63500	70400	77600	82100	-----
3	50000	63200	70200	77500	82100	-----
7	49200	62300	69400	76800	81400	-----
15	47500	60200	67100	74300	78800	-----
30	44700	55800	61600	67600	71400	-----
60	37600	46100	50600	55200	58100	-----
90	30900	37800	41700	46000	48900	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1909-27, 1929-37

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
61300	44200	33000	25100	18100	10000	6410	4730	3970	3370	2910	2450	2160	1780	1620	1540	1420

12372000 FLATHEAD RIVER NEAR POLSON, MT--Continued

PERIOD OF RECORD.--1939-79.

REMARKS.--Data below based on period of record after the completion of Kerr Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1939-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	14000	3560	7240	2500	0.35	5.1
NOVEMBER	12900	2650	7640	2710	.35	5.4
DECEMBER	13600	2860	9290	2910	.31	6.5
JANUARY	16500	3520	10200	3080	.30	7.2
FEBRUARY	17300	3270	9800	3610	.37	6.9
MARCH	21300	2820	8490	3860	.45	6.0
APRIL	22100	4000	10600	4900	.46	7.5
MAY	45600	5960	22900	9840	.43	16.1
JUNE	58200	6400	29500	11500	.39	20.8
JULY	34000	4760	14500	6530	.45	10.2
AUGUST	9500	2340	5900	1760	.30	4.2
SEPTEMBER	10400	2690	5860	1890	.32	4.1
ANNUAL	16400	5200	11800	2720	.23	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1940-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	2280	1210	722	427	210	-----
3	2470	1640	1300	1060	829	-----
7	2950	2060	1680	1410	1150	-----
14	3420	2480	2070	1780	1480	-----
30	4130	3140	2680	2340	2000	-----
60	5010	3950	3470	3110	2740	-----
90	5670	4430	3860	3440	3010	-----
120	6200	4750	4090	3590	3080	-----
183	7400	5750	4930	4290	3620	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25	2	5	10	25	50	100
80%	50%	20%	10%	4%	2%	1%
--	--	--	--	--	--	--

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1939-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	45500	55800	59500	62200	63300	-----
3	44400	55200	59200	62200	63600	-----
7	41800	53300	58100	62000	63900	-----
15	38100	50000	55700	61000	64000	-----
30	34000	44500	49600	54600	57400	-----
60	27800	36300	40500	44600	47000	-----
90	23200	30100	33500	36800	38800	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1939-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
51700	33900	24500	18700	15300	12600	10700	8890	7480	6380	5150	4070	3410	2490	2050	1700	1040

PERIOD OF RECORD.--1939-51.

REMARKS.--Data below based on period of record after completion of Kerr Dam, but before regulation by Hungry Horse Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1939-51

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	10900	3560	5250	2000	0.38	4.0
NOVEMBER	9720	2650	5230	1960	.37	4.0
DECEMBER	11600	2860	6700	2950	.44	5.1
JANUARY	14800	3520	8480	3600	.42	6.5
FEBRUARY	12000	3270	7070	2620	.37	5.4
MARCH	8960	2820	5360	1840	.34	4.1
APRIL	17400	4000	9080	3680	.40	6.9
MAY	45600	5960	28100	12200	.44	21.5
JUNE	58200	11300	31900	14300	.45	24.4
JULY	34000	4760	13500	8770	.65	10.3
AUGUST	9280	3900	5610	1620	.29	4.3
SEPTEMBER	6670	2690	4510	1030	.23	3.4
ANNUAL	15900	5200	10900	3530	.32	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1940-51

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	2100	1140	758	516	-----	-----
3	2570	1670	1270	989	-----	-----
7	2860	2050	1670	1390	-----	-----
14	3130	2500	2190	1960	-----	-----
30	3590	2940	2610	2340	-----	-----
60	3940	3430	3170	2960	-----	-----
90	4120	3570	3360	3220	-----	-----
120	4390	3670	3400	3220	-----	-----
183	----	----	----	----	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1939-51

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	46900	60400	66900	-----	-----	-----
3	46200	60400	67100	-----	-----	-----
7	44800	59700	66600	-----	-----	-----
15	42200	57700	65000	-----	-----	-----
30	38000	52500	59500	-----	-----	-----
60	31600	43700	49100	-----	-----	-----
90	25600	35300	39600	-----	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1939-51

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
56900	40800	27500	18600	13800	9270	7520	6260	5270	4650	4160	3700	3160	2460	2160	1850	1270

12372000 FLATHEAD RIVER NEAR POLSON, MT--Continued

PERIOD OF RECORD.--1952-79.

REMARKS.--Data below based on period of record after completion of Hungry Horse Dam and reflects regulation by Hungry Horse and Kerr Dams.

MONTHLY AND ANNUAL MEAN DISCHARGES 1952-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	14000	4800	8160	2170	0.27	5.5
NOVEMBER	12900	4540	8760	2260	.26	6.0
DECEMBER	13600	7020	10500	1990	.19	7.1
JANUARY	16500	6120	11000	2490	.23	7.5
FEBRUARY	17300	5530	11100	3320	.30	7.5
MARCH	21300	4570	9940	3700	.37	6.8
APRIL	22100	4320	11300	5280	.47	7.7
MAY	31800	7810	20500	7620	.37	13.9
JUNE	49800	6400	28400	10100	.36	19.3
JULY	29900	6750	15000	5320	.36	10.2
AUGUST	9500	2340	6030	1830	.30	4.1
SEPTEMBER	10400	3010	6490	1880	.29	4.4
ANNUAL	16400	7560	12300	2200	.18	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1953-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	2370	1230	702	388	172	-----
3	2460	1630	1300	1060	838	-----
7	2950	2030	1650	1390	1130	-----
14	3540	2470	2010	1680	1360	-----
30	4430	3290	2760	2350	1930	-----
60	5650	4480	3890	3430	2940	-----
90	6430	5230	4630	4160	3660	-----
120	7020	5700	5040	4520	3960	-----
183	8160	6930	6300	5780	5220	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1952-79

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
40900	48800	57000	62000	66500	69700	72600

WEIGHTED SKEW = -0.344

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1952-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	45000	53400	55800	57100	57500	-----
3	43900	52500	55000	56500	57000	-----
7	41100	50200	53300	55500	56300	-----
15	36900	46500	50400	53800	55400	-----
30	32900	40700	44000	46600	47900	-----
60	26500	32800	35700	38400	39900	-----
90	22200	27600	30400	33400	35300	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1952-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
47600	31600	23600	18600	15500	12900	11400	10000	8680	7510	6330	4900	3760	2540	2000	1570	1030

12389000 CLARK FORK NEAR PLAINS, MT

LOCATION.--Lat 47°25'47", long 114°51'18", in E½SW¼ sec.1, T.19 N., R.26 W., Sanders County, Hydrologic Unit 17010213, on right bank 2.4 mi (3.9 km) southeast of Plains, 6.0 mi (9.7 km) downstream from Flathead River, and at mile 239.0 (384.6 km).

DRAINAGE AREA.--19,958 mi^2 (51,691 km^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 (746.489 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Nov. 28, 1911, nonrecording gage at site 50 ft (15 m) upstream at same datum.

REMARKS.--Flow partly regulated by Hungry Horse Reservoir and by Flathead Lake. Diversions for irrigation of about 335,000 acres (1,360 km^2) above station.

AVERAGE DISCHARGE.--69 years, 20,000 ft^3/s (566.4 m^3/s) 14,490,000 acre-ft/yr (17.9 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 134,000 ft^3/s (3,790 m^3/s) June 5, 1948, gage height, 19.17 ft (5.843 m); minimum, 3,200 ft^3/s (90.6 m^3/s) Feb. 8, 1936, Dec. 10, 1940; minimum gage height, 2.70 ft (0.823 m), from partly estimated gage-height record, Sept. 2, 1958.

MONTHLY AND ANNUAL MEAN DISCHARGES 1911-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	23600	4760	10100	3460	0.34	4.2
NOVEMBER	21200	4590	10700	3960	.37	4.4
DECEMBER	21400	4080	11300	4590	.41	4.7
JANUARY	22300	3340	11400	4990	.44	4.8
FEBRUARY	22000	3940	11300	5020	.44	4.7
MARCH	25700	4640	11400	4850	.43	4.7
APRIL	47800	6110	19400	8910	.46	8.1
MAY	89800	13000	47800	15600	.33	19.9
JUNE	102000	13600	58700	21100	.36	24.5
JULY	76900	7840	27300	12400	.45	11.4
AUGUST	24800	5850	11100	3650	.33	4.6
SEPTEMBER	15600	4770	9260	2570	.28	3.9
ANNUAL	29400	8850	20000	4870	.24	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1912-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	5660	4580	4070	3680	3270	3020
3	5920	4790	4260	3860	3440	3190
7	6230	5010	4440	4020	3570	3300
14	6530	5220	4610	4150	3680	3390
30	6990	5520	4850	4340	3820	3500
60	7600	5890	5150	4590	4040	3700
90	8150	6200	5360	4740	4130	3760
120	8620	6480	5560	4890	4220	3830
183	9600	7120	6020	5220	4410	3940

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1911-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	83400	105000	114000	122000	126000	129000
3	82300	104000	113000	121000	125000	127000
7	79300	101000	110000	117000	121000	124000
15	74700	95500	104000	112000	116000	119000
30	68100	86500	94400	101000	105000	107000
60	57400	71300	76700	81000	83000	84400
90	47500	59000	63800	67700	69700	71100

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1911-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
95100	66100	48200	36200	27100	18100	15100	12700	10600	8950	7580	6310	5490	4730	4400	4080	3390

12389000 CLARK FORK NEAR PLAINS, MT--Continued

PERIOD OF RECORD.--1911-37.

REMARKS.--Data below based on period of record before regulation by Kerr Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1911-37

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	15100	4760	8230	2480	0.30	3.5
NOVEMBER	21200	4590	8900	4170	.47	3.8
DECEMBER	21400	4080	8380	4020	.48	3.6
JANUARY	22300	3340	7840	4500	.57	3.3
FEBRUARY	16400	3940	7370	2860	.39	3.1
MARCH	17900	4640	8380	3250	.39	3.6
APRIL	47800	6110	17900	9050	.51	7.6
MAY	89800	31200	50700	13500	.27	21.6
JUNE	101000	22800	63500	21400	.34	27.1
JULY	76900	12200	31800	14500	.46	13.6
AUGUST	24800	6150	12800	4250	.33	5.4
SEPTEMBER	15300	4770	8570	2580	.30	3.7
ANNUAL	29400	11400	19600	5000	.26	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1912-37

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	5410	4380	3880	3500	3090	-----
3	5490	4450	3950	3560	3150	-----
7	5630	4540	4000	3590	3150	-----
14	5750	4610	4060	3630	3180	-----
30	5890	4730	4190	3790	3380	-----
60	6100	4950	4460	4110	3750	-----
90	6360	5120	4610	4250	3890	-----
120	6620	5280	4760	4410	4070	-----
183	7210	5650	5070	4680	4320	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1912-37

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
60900	82400	107000	121000	137000	148000	157000

WEIGHTED SKEW = -0.470

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1911-37

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	81400	105000	119000	133000	143000	-----
3	80500	104000	118000	132000	142000	-----
7	78500	102000	115000	129000	139000	-----
15	75200	97200	110000	123000	133000	-----
30	70200	89500	100000	112000	120000	-----
60	59600	74500	82600	91300	97000	-----
90	49500	61700	68500	75900	80700	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1911-37

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
103000	69100	52600	39600	30000	17500	12300	9630	8340	7250	6430	5480	4800	4300	4020	3620	3260

12389000 CLARK FORK NEAR PLAINS, MT--Continued

PERIOD OF RECORD.--1939-79.

REMARKS.--Data below based on period of record after completion of Kerr Dam.

MONTHLY AND ANNUAL MEAN DISCHARGES 1939-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	23600	7140	11500	3380	0.29	4.7
NOVEMBER	20100	6070	11900	3280	.27	4.9
DECEMBER	20700	6000	13400	3780	.28	5.5
JANUARY	21200	6030	13900	3640	.26	5.7
FEBRUARY	22000	6270	14000	4320	.31	5.7
MARCH	25700	6960	13400	4700	.35	5.5
APRIL	39500	8010	20500	8880	.43	8.4
MAY	79900	13000	45800	16900	.37	18.8
JUNE	102000	13600	55400	20800	.38	22.7
JULY	51300	7840	24500	10100	.41	10
AUGUST	16000	5850	10100	2730	.27	4.1
SEPTEMBER	15600	5750	9700	2520	.26	4.0
ANNUAL	27400	8850	20400	4870	.24	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1940-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	5910	4770	4230	3810	3370	-----
3	6320	5140	4580	4150	3710	-----
7	6730	5530	4980	4550	4120	-----
14	7140	5920	5370	4970	4540	-----
30	7810	6510	5910	5460	4990	-----
60	8790	7230	6530	5990	5450	-----
90	9590	7780	6970	6360	5720	-----
120	10200	8200	7270	6570	5840	-----
183	11500	9260	8150	7280	6350	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
--	--	--	--	--	--	--

WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1939-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	83700	105000	113000	119000	121000	-----
3	82300	104000	112000	118000	120000	-----
7	78500	99800	108000	114000	117000	-----
15	72700	93900	103000	110000	113000	-----
30	65200	84000	91900	98300	102000	-----
60	54500	68500	73900	78000	79800	-----
90	45100	56600	61200	65000	66700	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1939-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
91300	63000	45800	33900	25700	18200	16000	14000	12300	10700	9130	7450	6600	5840	5510	5180	4270

12389500 THOMPSON RIVER NEAR THOMPSON FALLS, MT

LOCATION.--Lat 47°35'31", long 115°13'43", in NW¼NE¼SE¼ sec.7, T.21 N., R.28 W., Sanders County, Hydrologic Unit 17010213, Lolo National Forest, on right bank 1.3 mi (2.1 km) upstream from mouth and 5.5 mi (8.8 km) east of Thompson Falls.

DRAINAGE AREA.--642 mi^2 (1,663 km^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 (740.655 m) National Geodetic Vertical Datum of 1929 (Bureau of Public Roads bench mark). October 1911 to September 1916, nonrecording gage at site 0.2 mi (0.3 km) upstream at different datum.

REMARKS.--Minor diversions above station for irrigation, acreage unknown. Diversion from headwaters of Alder Creek in SW¼ sec.16 T.23 N., R.25 W., to supplement water supply for storage in Upper Dry Fork Reservoir in Little Bitterroot River basin.

AVERAGE DISCHARGE.--23 years, 482 ft^3/s (13.65 m^3/s), 10.19 in/yr (259 mm/yr), 349,200 acre-ft/yr (431 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,080 ft^3/s (172 m^3/s) June 9, 1964, gage height, 8.53 ft (2.600 m); minimum, 60 ft^3/s (1.70 m^3/s) Nov. 20, 1977, gage height, 1.96 ft (0.597 m), result of freezeup; minimum gage height, 1.01 ft (0.308 m) Dec. 17, 1964, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May to June 1948 reached a discharge of 6,190 ft^3/s (175 m^3/s), by slope-area measurement of peak flow at site 0.2 mi (0.3 km) downstream.

MONTHLY AND ANNUAL MEAN DISCHARGES 1957-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	343	116	197	45	0.23	3.4
NOVEMBER	358	131	201	48	.24	3.5
DECEMBER	450	128	212	75	.36	3.7
JANUARY	719	126	221	124	.56	3.8
FEBRUARY	665	128	248	116	.47	4.3
MARCH	1340	120	343	241	.70	5.9
APRIL	1560	238	762	381	.50	13.2
MAY	2640	374	1490	541	.36	25.8
JUNE	2370	244	1200	561	.47	20.8
JULY	724	140	441	152	.34	7.6
AUGUST	356	113	256	62	.24	4.4
SEPTEMBER	271	115	207	42	.20	3.6
ANNUAL	766	176	482	148	.31	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1957-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	103	84	75	69	-----	-----
3	116	99	91	86	-----	-----
7	133	114	106	99	-----	-----
14	144	125	115	108	-----	-----
30	155	134	124	116	-----	-----
60	165	141	129	120	-----	-----
90	171	146	133	123	-----	-----
120	178	150	137	127	-----	-----
183	194	166	153	143	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1948-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1590	2760	4380	5500	6870	7890	8870

WEIGHTED SKEW = -0.308

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1957-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	2650	3730	4230	4680	-----	-----
3	2520	3420	3790	4090	-----	-----
7	2290	3010	3270	3460	-----	-----
15	2020	2650	2890	3070	-----	-----
30	1770	2350	2590	2770	-----	-----
60	1450	1900	2080	2230	-----	-----
90	1210	1580	1730	1850	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1957-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
2740	1690	1240	913	656	398	303	250	218	196	176	153	132	117	108	103	86

12390700 PROSPECT CREEK AT THOMPSON FALLS, MT

LOCATION.--Lat 47°35'10", long 115°21'15", in lot 12, SE¼SE¼SE¼ sec.7, T.21 N., R.29 W., Sanders County, Hydrologic Unit 17010213, on right bank 500 ft (150 m) downstream from Dry Creek, 0.5 mi (0.8 km) upstream from mouth, and 0.7 mi (1.1 km) south of Thompson Falls.

DRAINAGE AREA.--182 mi^2 (471 km^2).

PERIOD OF RECORD.--April 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,382.40 ft (726.156 m) National Geodetic Vertical Datum of 1929.

REMARKS.--No known regulation or diversions above station.

AVERAGE DISCHARGE.--23 years, 260 ft^3/s (7.363 m^3/s), 19.40 in/yr (493 mm/yr), 188,400 acre-ft/yr (232 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,490 ft^3/s (155 m^3/s) Jan. 16, 1977, gage height, 9.86 ft (3.005 m); minimum, 29 ft^3/s (0.82 m^3/s) Jan. 5, 1970 (result of freezeup), Jan. 2, 1977, Dec. 29, 1978 (result of freezeup); minimum gage height, 0.25 ft (0.076 m) Dec. 29, 1978.

MONTHLY AND ANNUAL MEAN DISCHARGES 1957-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	168	34	61	26	0.42	2.0
NOVEMBER	262	40	75	52	.69	2.4
DECEMBER	383	41	117	98	.84	3.8
JANUARY	735	37	133	148	1.11	4.3
FEBRUARY	480	36	158	115	.73	5.1
MARCH	828	44	216	163	.76	6.9
APRIL	877	148	486	224	.46	15.6
MAY	1420	297	916	272	.30	29.4
JUNE	1470	154	628	313	.50	20.2
JULY	295	74	170	57	.33	5.5
AUGUST	108	49	88	15	.17	2.8
SEPTEMBER	80	39	65	10	.16	2.1
ANNUAL	441	86	260	79	.31	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1957-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	44	36	33	30	-----	-----
3	45	37	34	31	-----	-----
7	46	38	35	32	-----	-----
14	47	39	35	33	-----	-----
30	48	40	37	34	-----	-----
60	50	42	38	36	-----	-----
90	52	43	40	37	-----	-----
120	56	46	42	39	-----	-----
183	70	53	47	43	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1956-78

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1160	1790	2650	3220	3910	4400	4840

WEIGHTED SKEW = -0.262

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1957-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	1680	2410	2860	3390	-----	-----
3	1580	2130	2400	2670	-----	-----
7	1400	1770	1920	2050	-----	-----
15	1200	1530	1680	1800	-----	-----
30	1060	1360	1480	1580	-----	-----
60	869	1080	1160	1210	-----	-----
90	728	899	958	998	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1957-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
1620	1030	741	541	391	225	150	110	83	68	57	47	42	39	36	34	31

12391400 CLARK FORK BELOW NOXON RAPIDS DAM, NEAR NOXON, MT

LOCATION.--Lat 47°57'40", long 115°43'58", in SW1/4 sec.33, T.26 N., R.32 W., Sanders County, Hydrologic Unit 17010213, at Noxon Rapids Dam 1 mi (2 km) upstream from Rock Creek, 3 mi (5 km) southeast of Noxon, and at mile 169.7 (273.0 km).

DRAINAGE AREA.--21,833 mi^2 (56,547 km^2).

PERIOD OF RECORD.--May 1960 to current year.

GAGE.--Plant generator rating for discharge through powerplant. Water-stage recorder on reservoir determines head on taintor gates. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by The Washington Water Power Co.).

REMARKS.--Flow regulated by Hungry Horse Reservoir and Flathead Lake. Diversions for irrigation of about 350,000 acres (1,420 km^2) above station. Some sub-surface flow is indicated by comparison with records for adjacent gaging stations. Figures of discharge given herein are combined flows through turbines and spillway.

COOPERATION.--Records collected by The Washington Water Power Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

AVERAGE DISCHARGE.--19 years, 21,470 ft^3/s (608.0 m^3/s), 15,560,000 acre-ft/yr (19.2 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 124,900 ft^3/s (3,540 m^3/s) June 12, 1964; minimum daily, 80 ft^3/s (2.27 m^3/s) Oct. 16, 1960, Aug. 26, 1962, Aug. 18, 25, 31, Sept. 1, 1963, Sept. 11, 1977.

MONTHLY AND ANNUAL MEAN DISCHARGES 1961-79

MONTH	MAXIMUM (CFS)	MINIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	16200	6170	11600	2610	0.22	4.5
NOVEMBER	16100	7110	12100	2590	.21	4.7
DECEMBER	22100	9540	14000	2770	.20	5.4
JANUARY	22200	8950	14900	2810	.19	5.8
FEBRUARY	23500	9480	16200	4330	.27	6.3
MARCH	32400	10200	18100	5500	.30	7.0
APRIL	44100	4870	24200	9960	.41	9.4
MAY	70800	14500	44600	17100	.38	17.3
JUNE	92600	13400	57000	22800	.40	22.1
JULY	40700	8330	24700	8550	.35	9.6
AUGUST	15000	6130	10300	2640	.26	4.0
SEPTEMBER	14400	4840	9840	2800	.28	3.8
ANNUAL	29200	11200	21500	4800	.22	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1962-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	1250	366	168	82	-----	-----
3	4640	2030	955	423	-----	-----
7	5720	3880	3100	2540	-----	-----
14	6660	4780	3950	3350	-----	-----
30	7770	5810	4910	4230	-----	-----
60	9120	7230	6310	5600	-----	-----
90	10100	8320	7440	6750	-----	-----
120	10800	8940	8020	7290	-----	-----
183	11800	10300	9510	8900	-----	-----

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
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WEIGHTED SKEW = --

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1961-79

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	84300	111000	122000	131000	-----	-----
3	82700	109000	120000	129000	-----	-----
7	78300	105000	117000	127000	-----	-----
15	72200	97900	109000	119000	-----	-----
30	65100	86500	95400	103000	-----	-----
60	54800	70500	76400	80900	-----	-----
90	46100	58500	63100	66600	-----	-----

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1961-79

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME															
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
94600	63500	46000	35600	28300	20600	17500	15600	13800	12100	10100	7550	5730	4030	2990	2130	100