

Water-Data Report 2013

**06090300 MISSOURI RIVER NEAR GREAT FALLS, MT**

Upper Missouri Basin  
Upper Missouri-Dearborn Subbasin

LOCATION.--Lat 47°35'04", long 111°03'38" referenced to North American Datum of 1983, in SW ¼ SE ¼ SW ¼ sec.11, T.21 N., R.5 E., Cascade County, MT, Hydrologic Unit 10030102, on left bank 700 ft downstream from Morony Dam, 12.6 mi northeast of Great Falls, and at river mile 2,105.4.

DRAINAGE AREA.--23,292 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--May to July 1953 in Water Supply Paper 1320-B, October 1956 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,807.21 ft, referenced to the National Geodetic Vertical Datum of 1929. Prior to July 27, 1977, nonrecording gage at same site at elevation 2.00 ft higher. July 27, 1977 to May 26, 1987, at site 600 ft upstream at elevation 2.00 ft higher. October 1971 to July 27, 1977, discharges were obtained from the Montana Power Company at Rainbow Dam 7.05 mi upstream. Prior to October 1971, Foxboro meters were used for determining discharge through powerplant. Water-stage recorder on Morony Reservoir was used for determining head on taintor gates with elevation of gage at sea level (level by Montana Power Company).

REMARKS.--Records are good. Flow is regulated by Clark Canyon Reservoir (station number 06015300), Canyon Ferry Lake (station number 06058500), and 18 smaller irrigation reservoirs and powerplants upstream. Diversions for irrigation include about 750,400 acres upstream from the station. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

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**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	4,270	4,500	4,720	4,910	5,460	5,930	5,380	5,460	8,330	4,530	4,300	3,660
2	4,370	4,390	4,620	4,710	6,180	6,250	5,370	5,360	8,210	4,520	4,440	3,750
3	4,490	4,390	4,880	4,710	6,600	6,290	5,300	5,620	9,080	4,450	4,560	4,040
4	4,330	4,390	4,600	4,560	5,900	6,330	5,240	5,510	9,470	3,740	4,570	3,620
5	4,120	4,240	4,730	4,810	5,730	6,320	5,370	5,710	11,300	4,640	4,390	3,720
6	4,730	4,000	4,620	5,130	5,980	5,890	5,450	5,840	10,100	4,250	4,450	3,550
7	4,390	4,010	4,560	5,030	5,270	6,350	5,360	5,960	9,680	4,540	4,270	3,850
8	4,730	4,420	4,610	5,190	5,580	5,990	5,720	5,910	8,880	4,090	4,340	3,610
9	4,570	4,540	4,240	5,390	5,670	5,920	5,790	5,930	9,130	4,630	4,020	3,960
10	4,530	4,420	3,380	5,310	5,570	5,640	5,500	5,900	8,190	4,700	4,120	3,680
11	4,320	4,150	4,230	5,140	5,560	5,280	5,610	6,510	7,970	4,390	4,190	3,850
12	4,470	4,190	5,230	4,450	5,780	5,130	5,360	6,970	6,910	4,170	4,250	3,900
13	4,410	4,260	4,960	4,100	5,980	5,400	5,180	7,160	6,940	4,290	4,250	3,690
14	4,360	4,580	4,540	4,620	6,040	5,310	5,400	7,440	7,070	4,340	4,130	3,820
15	4,280	4,590	4,670	5,080	6,020	5,430	5,550	6,720	7,280	4,150	4,040	3,500
16	4,490	4,700	4,570	5,310	5,900	5,490	5,520	7,120	6,720	4,080	3,910	3,410
17	4,600	4,480	4,590	5,910	5,940	5,600	5,540	7,070	6,080	4,130	3,870	3,270
18	4,220	4,700	4,440	6,080	5,910	5,460	5,860	7,080	6,210	4,090	4,130	3,510
19	4,530	4,680	4,170	6,120	5,730	5,360	5,310	6,660	5,390	4,220	4,000	3,490
20	4,830	4,450	3,650	5,710	5,880	5,250	5,260	6,370	5,860	4,270	3,900	3,450
21	4,530	4,700	3,810	5,870	5,920	5,560	5,500	6,710	7,060	4,320	3,860	3,640
22	4,710	4,590	4,990	5,450	5,800	5,400	5,170	6,840	6,330	4,330	3,730	3,700
23	4,630	4,470	3,750	5,280	5,990	5,350	5,420	6,950	6,070	4,440	3,940	3,840
24	4,400	4,540	3,250	5,370	5,930	5,340	5,160	6,900	5,740	4,620	3,650	3,900
25	4,450	4,650	2,680	5,400	5,950	5,370	5,530	7,010	5,680	4,380	3,920	3,930
26	4,380	4,390	2,980	5,740	5,900	5,330	5,260	7,470	5,310	4,380	3,600	3,570
27	4,430	4,350	4,120	5,780	6,100	5,430	5,480	7,380	5,100	4,170	3,860	4,090
28	4,400	4,390	3,980	5,780	5,760	5,320	5,350	7,470	4,810	4,040	3,830	4,080
29	4,540	4,610	4,510	5,540	---	5,610	5,520	7,120	4,510	4,350	3,620	4,310
30	4,500	4,490	4,890	4,840	---	5,260	5,690	7,880	4,800	4,360	3,550	4,030
31	4,520	---	4,890	4,110	---	5,260	---	7,970	---	4,350	3,750	---
<b>Total</b>	138,530	133,260	133,860	161,430	164,030	173,850	163,150	206,000	214,210	133,960	125,440	112,420
<b>Mean</b>	4,469	4,442	4,318	5,207	5,858	5,608	5,438	6,645	7,140	4,321	4,046	3,747
<b>Max</b>	4,830	4,700	5,230	6,120	6,600	6,350	5,860	7,970	11,300	4,700	4,570	4,310
<b>Min</b>	4,120	4,000	2,680	4,100	5,270	5,130	5,160	5,360	4,510	3,740	3,550	3,270
<b>Ac-ft</b>	274,800	264,300	265,500	320,200	325,400	344,800	323,600	408,600	424,900	265,700	248,800	223,000

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2013, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	5,674	5,998	5,992	6,140	6,323	6,579	7,260	10,710	13,590	8,548	5,834	5,470
<b>Max</b>	11,940	10,430	11,520	8,232	9,252	10,820	13,200	24,780	30,160	23,560	9,946	9,992
<b>(WY)</b>	(1966)	(1966)	(1960)	(1971)	(1997)	(1968)	(1976)	(1976)	(1964)	(1975)	(1993)	(1984)
<b>Min</b>	3,829	3,950	3,773	3,869	4,030	4,021	3,526	4,454	3,758	3,817	3,719	3,109
<b>(WY)</b>	(1989)	(1993)	(2002)	(2002)	(2002)	(1961)	(1961)	(1961)	(1977)	(1977)	(1988)	(1959)

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SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1957 - 2013	
<b>Annual total</b>	2,262,990		1,860,140			
<b>Annual mean</b>	6,183		5,096		7,343	
<b>Highest annual mean</b>					11,490	1975
<b>Lowest annual mean</b>					4,349	2001
<b>Highest daily mean</b>	16,100	Jun 8	11,300	Jun 5	63,400	Jun 10, 1964
<b>Lowest daily mean</b>	2,680	Dec 25	2,680	Dec 25	1,760	Apr 16, 1961
<b>Annual seven-day minimum</b>	3,590	Dec 20	3,470	Sep 15	2,740	Sep 5, 1959
<b>Maximum peak flow</b>			12,200	Jun 5	<sup>a</sup> 72,000	Jun 10, 1964
<b>Maximum peak stage</b>			4.70	Jun 5	<sup>b</sup> 9.02	May 24, 1981
<b>Instantaneous low flow</b>					<sup>c</sup> 1.0	Apr 16, 1962
<b>Annual runoff (ac-ft)</b>	4,489,000		3,690,000		5,320,000	
<b>10 percent exceeds</b>	9,120		6,620		11,500	
<b>50 percent exceeds</b>	5,600		4,730		6,170	
<b>90 percent exceeds</b>	4,300		3,860		4,230	

<sup>a</sup>From hydrographic comparison with nearby stations.

<sup>b</sup>Site and datum then in use.

<sup>c</sup>About, powerplant shutdown.

