

Water-Data Report 2012

06090300 MISSOURI RIVER NEAR GREAT FALLS, MT

Upper Missouri Basin
Upper Missouri-Dearbon 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 mi².

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 except for estimated daily discharges, which are fair. 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 Several unpublished observations of water temperature and specific conductance were made during the year.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 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6,020	6,420	6,990	6,080	7,010	6,480	6,820	11,100	7,630	6,120	5,430	4,590
2	5,560	6,440	7,140	6,380	7,210	6,340	6,900	10,500	7,400	5,800	5,360	4,570
3	5,710	6,290	7,070	6,520	6,860	6,480	6,780	9,690	7,460	5,520	5,230	4,350
4	5,890	6,460	6,950	6,460	6,880	6,280	7,000	9,460	8,570	5,160	5,220	4,580
5	6,290	6,390	6,490	6,490	6,680	6,380	6,810	9,440	9,480	5,600	5,130	4,560
6	7,330	6,720	6,260	6,420	6,770	6,530	6,910	9,140	11,200	5,470	5,100	4,640
7	6,640	6,820	6,600	6,100	6,630	6,560	6,990	8,890	13,400	5,510	5,020	4,500
8	6,730	6,880	6,660	5,910	6,130	6,730	6,910	9,120	16,100	5,390	5,060	4,640
9	6,230	6,600	7,190	6,570	6,680	6,420	6,770	8,780	15,700	5,270	4,960	4,440
10	5,900	6,650	6,700	6,440	6,710	6,520	6,730	8,310	14,500	5,080	4,780	4,800
11	6,030	6,820	6,880	6,280	6,400	6,450	6,700	8,040	13,100	5,210	5,380	5,110
12	5,920	6,650	6,970	5,720	5,420	6,510	7,110	7,750	12,600	5,220	5,160	5,270
13	5,750	6,650	6,750	5,410	6,560	6,730	6,850	7,570	11,300	5,020	5,240	4,570
14	5,810	6,970	6,370	6,600	7,090	6,550	6,860	7,200	10,100	5,190	4,960	4,450
15	5,780	7,250	6,730	6,850	6,540	6,240	7,040	7,490	11,200	5,600	5,390	4,470
16	6,230	6,850	6,680	5,220	6,450	6,330	6,960	7,560	11,100	5,740	5,240	4,470
17	5,980	6,740	6,800	3,800	6,400	5,880	7,130	7,860	10,200	5,550	5,530	4,310
18	6,070	6,900	6,710	3,060	6,440	6,180	7,190	8,990	10,200	5,610	4,920	4,430
19	5,940	6,760	6,660	4,100	6,440	6,200	8,140	9,930	10,700	5,870	5,020	4,250
20	5,850	6,790	6,310	4,440	6,250	6,450	8,550	9,710	10,600	5,830	4,930	4,220
21	5,990	6,530	6,290	4,950	6,420	e6,300	8,720	8,200	9,380	5,850	5,100	4,040
22	6,200	6,820	6,080	6,360	6,360	e6,500	8,430	8,170	8,730	6,000	4,930	4,110
23	6,300	7,020	6,050	7,380	6,500	6,760	8,520	8,340	8,940	5,800	4,970	3,970
24	6,300	7,150	4,800	7,960	6,400	6,720	8,650	10,200	9,160	5,560	4,980	4,140
25	6,540	7,250	7,310	7,400	6,460	6,660	8,820	9,660	9,120	5,440	4,530	4,130
26	6,440	6,730	6,790	7,380	6,320	6,700	9,530	8,820	9,580	5,130	4,640	4,190
27	6,770	6,990	6,180	7,150	6,440	6,700	10,100	8,890	9,610	5,230	4,500	4,290
28	6,420	7,190	6,260	6,950	6,340	6,660	9,880	8,130	8,460	5,260	4,580	4,230
29	6,760	7,180	6,560	6,670	6,320	6,700	11,200	8,070	7,550	5,240	4,710	4,240
30	6,640	7,240	6,530	6,910	---	6,760	11,600	7,930	7,160	5,110	4,580	4,380
31	6,810	---	6,830	7,190	---	6,600	---	8,120	---	5,450	4,540	---
Total	192,830	204,150	204,590	191,150	189,110	201,300	236,600	271,060	310,230	169,830	155,120	132,940
Mean	6,220	6,805	6,600	6,166	6,521	6,494	7,887	8,744	10,340	5,478	5,004	4,431
Max	7,330	7,250	7,310	7,960	7,210	6,760	11,600	11,100	16,100	6,120	5,530	5,270
Min	5,560	6,290	4,800	3,060	5,420	5,880	6,700	7,200	7,160	5,020	4,500	3,970
Ac-ft	382,500	404,900	405,800	379,100	375,100	399,300	469,300	537,600	615,300	336,900	307,700	263,700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	5,696	6,026	6,022	6,156	6,331	6,596	7,293	10,780	13,710	8,623	5,866	5,501
Max	11,940	10,430	11,520	8,232	9,252	10,820	13,200	24,780	30,160	23,560	9,946	9,992
(WY)	(1966)	(1966)	(1960)	(1971)	(1997)	(1968)	(1976)	(1976)	(1964)	(1975)	(1993)	(1984)
Min	3,829	3,950	3,773	3,869	4,030	4,021	3,526	4,454	3,758	3,817	3,719	3,109
(WY)	(1989)	(1993)	(2002)	(2002)	(2002)	(1961)	(1961)	(1961)	(1977)	(1977)	(1988)	(1959)

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SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1957 - 2012	
Annual total	3,978,610		2,458,910			
Annual mean	10,900		6,718		7,383	
Highest annual mean					11,490	1975
Lowest annual mean					4,349	2001
Highest daily mean	37,900	Jun 11	16,100	Jun 8	63,400	Jun 10, 1964
Lowest daily mean	4,160	Feb 1	3,060	Jan 18	1,760	Apr 16, 1961
Annual seven-day minimum	5,920	Oct 9	4,110	Sep 20	2,740	Sep 5, 1959
Maximum peak flow			19,400	Apr 28	^b 72,000	Jun 10, 1964
Maximum peak stage			^a 5.83	Apr 28	^c 9.02	May 24, 1981
Instantaneous low flow					^d 1.0	Apr 16, 1962
Annual runoff (ac-ft)	7,892,000		4,877,000		5,349,000	
10 percent exceeds	27,200		9,120		11,600	
50 percent exceeds	7,240		6,520		6,220	
90 percent exceeds	6,190		4,640		4,240	

^aResult of regulation.

^bFrom hydrographic comparison with nearby stations.

^cSite and datum then in use.

^dAbout, powerplant shutdown.

