Water-Data Report 2013

05227500 MISSISSIPPI RIVER AT AITKIN, MN

Mississippi Headwaters Basin
Prairie-Willow Subbasin

LOCATION.--Lat 46°32′26″, long 93°42′26″ referenced to North American Datum of 1927, in SW ¼ NW ¼ sec.24, T.47 N., R.27 W., Aitkin County, MN, Hydrologic Unit 07010104, on right bank upstream side of highway bridge at north edge of Aitkin, 1 mi downstream from Ripple River and at mile 1,055.9 upstream from Ohio River.

Diversion Gage: Lat 46°35′30″, long 93°41′13″, in NW¼NW¼ sec.6, T.47N., R.26W., Aitkin County, Hydrologic Unit 07010104, on upstream side of bridge 1.2 miles downstream from entrance control structure, 1 mile upstream from Little Willow River and 3.8 miles north of Aitkin.

DRAINAGE AREA.--6,140 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1945 to current year.

REVISED RECORDS.--Unpublished, 2009: 1924(M).

GAGE.--Water-stage recorder. Datum of gage is 1,182.41 ft above sea level (NGVD of 1929, levels by U.S. Army Corps of Engineers). Mar. 1, 1945 to Mar. 14, 1961, non-recording gage, and Mar. 15, 1961 to Sept. 30, 1967, water-stage recorder at same site at datum 3.0 ft higher. Diversion channel: non-recording gage and crest-stage gage. Datum of gage is 1,182.02 ft above sea level (NGVD of 1929). Apr. 9, 1955 to Apr. 10, 1956, non-recording gage at site 4 mi downstream at different datum. Apr. 11, 1956 to Sept. 30, 1967, non-recording gage at same site at datum 3.0 ft higher.

REMARKS.--Record considered good, except for estimated daily discharges, which are poor. Flow regulated by Winnibigoshish Lake, Leech Lake, Pokegama Lake, and Sandy Lake. Water diverted at medium and high stages into Aitkin diversion channel 6.5 mi above station, bypasses station and returns to river 15.5 mi below station. Diversion began Apr. 2, 1955. These records include flow in diversion channel.

EXTREMES FOR CURRENT YEAR.--Main channel: maximum discharge, 4,840 ft^3/s, maximum gage height 13.34 ft, May 7. Diversion channel: maximum discharge, 4,150 ft^3/s, maximum gage height, 13.19 ft, on or around May 7.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	663	840	2,330	e1,440	e1,400	e1,320	e1,830	7,940	6,950	7,020	2,230	884
2	659	842	2,380	e1,430	e1,400	e1,320	e2,000	8,260	6,890	6,690	2,140	922
3	656	840	2,360	e1,410	e1,400	e1,310	e2,170	8,480	6,780	6,320	2,010	908
4	652	810	2,320	e1,400	e1,400	e1,300	e2,350	8,640	6,630	5,890	1,920	864
5	647	749	2,110	e1,390	e1,390	e1,310	e2,540	8,750	6,530	5,460	1,870	823
6	645	700	1,960	e1,370	e1,400	e1,310	e2,740	8,830	6,510	5,140	1,830	837
7	647	669	1,880	e1,360	e1,400	e1,320	e2,970	8,860	6,360	4,900	1,790	900
8	647	654	1,750	e1,350	e1,390	e1,320	e3,180	8,870	6,160	4,650	1,670	924
9	652	659	e1,430	e1,340	e1,390	e1,320	e3,450	8,840	6,070	4,460	1,560	944
10	667	670	e1,270	e1,340	e1,390	e1,330	e3,630	8,780	6,130	4,310	1,470	938
11	678	715	e1,310	e1,340	e1,390	e1,350	e3,800	8,700	6,120	4,150	1,420	925
12	687	729	e1,370	e1,340	e1,380	e1,370	e3,850	8,570	6,020	3,970	1,350	912
13	697	737	e1,420	e1,340	e1,410	e1,400	e4,120	8,390	5,860	3,830	1,280	887
14	702	814	e1,460	e1,340	e1,400	e1,410	e4,180	8,180	5,700	3,750	1,210	890
15	701	831	e1,480	e1,340	e1,390	e1,400	e4,220	7,940	5,480	3,720	1,110	944
16	702	777	e1,510	e1,340	e1,380	e1,390	e4,120	7,660	5,200	3,780	1,000	923
17	714	752	e1,510	e1,350	e1,370	e1,390	e4,100	7,340	4,880	3,910	955	846
18	727	797	e1,510	e1,350	e1,360	e1,390	e3,950	7,080	4,580	3,960	929	784
19	738	877	e1,510	e1,350	e1,360	e1,390	e3,790	6,840	4,300	3,860	904	764
20	741	954	e1,500	e1,350	e1,350	e1,360	e3,930	6,710	4,110	3,640	885	770
21	746	1,000	e1,490	e1,350	e1,340	e1,310	e4,060	6,850	4,450	3,420	873	765
22	751	1,060	e1,490	e1,350	e1,330	e1,300	e4,100	7,100	5,220	3,240	828	756
23	753	1,190	e1,490	e1,350	e1,330	e1,320	4,130	7,360	5,840	3,080	755	747
24	765	1,370	e1,490	e1,350	e1,340	e1,360	4,050	7,500	6,320	2,910	719	740
25	779	1,580	e1,480	e1,350	e1,350	e1,400	4,090	7,510	6,510	2,730	709	734
26	785	1,690	e1,480	e1,350	e1,350	e1,430	4,350	7,460	6,750	2,540	720	710
27	795	1,680	e1,470	e1,370	e1,350	e1,460	5,150	7,330	7,040	2,420	779	665
28	817	1,830	e1,470	e1,380	e1,330	e1,500	6,220	7,160	7,180	2,370	774	629
29	838	1,900	e1,460	e1,390	---	e1,570	7,050	6,940	7,290	2,330	777	605
30	838	2,100	e1,450	e1,400	---	e1,660	7,520	6,840	7,250	2,300	825	585
31	838	---	e1,450	e1,400	---	e1,770	---	6,920	---	2,270	843	---
Total	22,327	30,816	50,590	42,310	38,470	43,090	117,640	242,630	181,110	123,020	38,135	24,525
Mean	720	1,027	1,632	1,365	1,374	1,390	3,921	7,827	6,037	3,968	1,230	818
Max	838	2,100	2,380	1,440	1,410	1,770	7,520	8,870	7,290	7,020	2,230	944
Min	645	654	1,270	1,340	1,330	1,300	1,830	6,710	4,110	2,270	709	585
Ac-ft	44,290	61,120	100,300	83,920	76,310	85,470	233,300	481,300	359,200	244,000	75,640	48,650
Cfsm	0.12	0.17	0.27	0.22	0.22	0.23	0.64	1.27	0.98	0.65	0.20	0.13
In.	0.14	0.19	0.31	0.26	0.23	0.26	0.71	1.47	1.10	0.75	0.23	0.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	2,569	2,742	2,237	1,953	1,848	2,195	5,054	5,169	3,786	3,125	2,216	2,044
Max	6,534	6,756	4,498	3,525	3,196	5,415	10,830	15,510	10,500	9,408	8,270	6,689
(WY)	(1966)	(1972)	(1997)	(1966)	(1966)	(1945)	(1966)	(1950)	(2012)	(2012)	(1953)	(1986)
Min	313	328	324	345	398	638	1,074	669	540	346	273	321
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1958)	(1988)	(1961)	(1961)	(1976)

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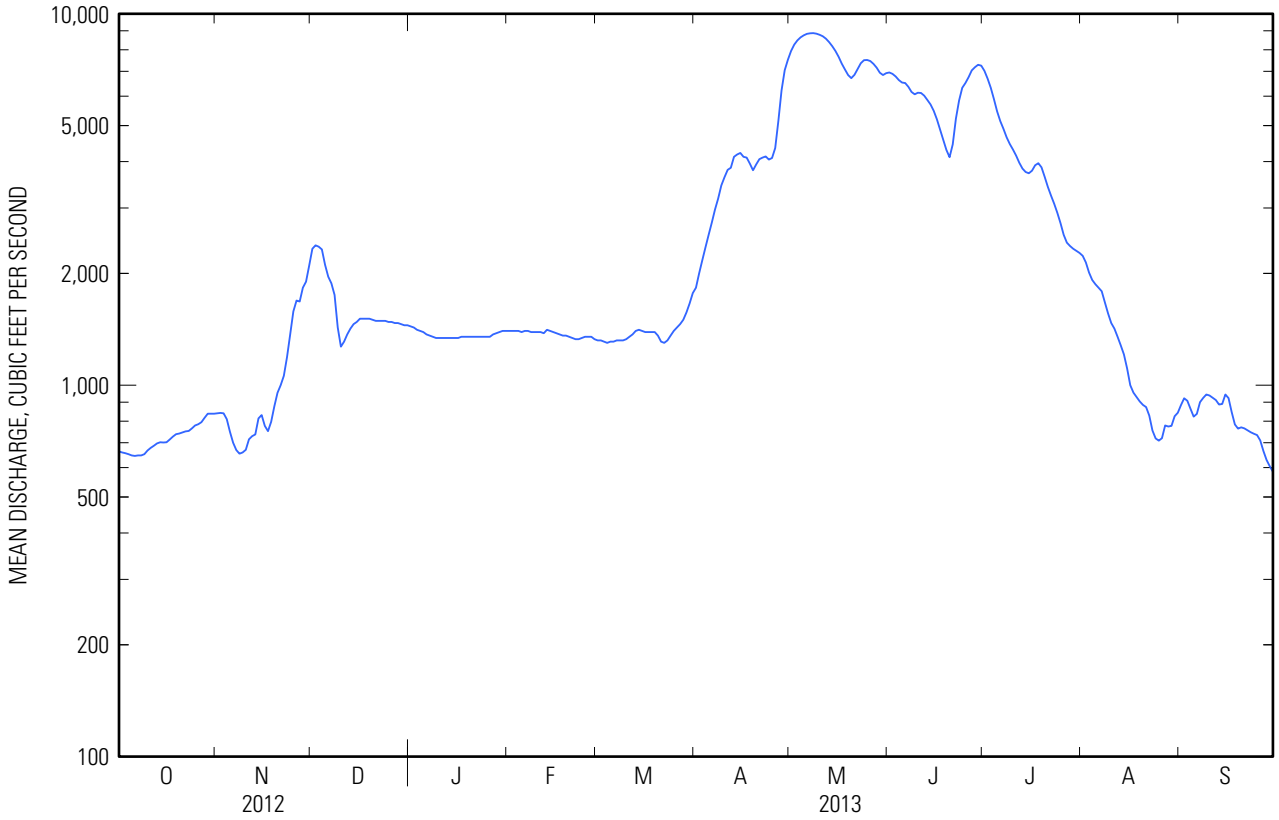
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1945 - 2013	
Annual total	1,157,410		954,663			
Annual mean	3,162		2,616		2,905	
Highest annual mean					4,985	1966
Lowest annual mean					796	1977
Highest daily mean	14,900	Jun 27	8,870	May 8	19,900	May 20, 1950
Lowest daily mean	645	Oct 6	585	Sep 30	153	Sep 1, 1961
Annual seven-day minimum	649	Oct 3	649	Oct 3	195	Aug 26, 1961
Maximum peak flow			8,880	May 7	20,000	May 20, 1950
Maximum peak stage			13.34	May 7	[a]22.49	May 20, 1950
Instantaneous low flow			578	Sep 30	151	Sep 1, 1961
Annual runoff (ac-ft)	2,296,000		1,894,000		2,105,000	
Annual runoff (cfsm)	0.515		0.426		0.473	
Annual runoff (inches)	7.01		5.78		6.43	
10 percent exceeds	9,460		6,870		5,870	
50 percent exceeds	1,460		1,400		2,300	
90 percent exceeds	713		739		920	

[a] Present datum.