

05227500 MISSISSIPPI RIVER AT AITKIN, MN

LOCATION.--Lat 46°32'26", long 93°42'26", in SW¹/₄NW¹/₄ sec. 24, T.47 N., R.27 W., Aitkin County, 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.

DRAINAGE AREA.--6,140 mi² (approximately).

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

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, nonrecording 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, nonrecording 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.--Records good except those for estimated daily discharges, which are fair. 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, 3,570 ft³/s, Apr. 4; gage height, 9.22 ft. Diversion channel: maximum discharge, 1,200 ft³/s, Apr. 4, gage height, 7.55 ft (determined based on change in stage at main gage).

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	695	844	e1,340	e1,240	e950	e1,050	e3,000	2,840	2,960	1,350	754	481
2	698	847	e1,350	e1,210	e950	e1,060	e3,840	2,700	3,550	1,290	770	454
3	700	858	e1,350	e1,160	e950	e1,060	e4,380	2,580	3,870	1,280	731	447
4	682	894	e1,350	e1,110	e950	e1,060	e4,700	2,480	4,050	1,280	688	519
5	682	903	e1,340	e1,140	e940	e1,040	4,590	2,330	4,180	1,200	672	612
6	688	853	e1,330	e1,160	e930	e1,040	4,420	2,190	4,240	1,130	660	830
7	690	829	e1,310	e1,170	e920	e1,030	4,540	2,010	4,260	1,160	651	1,160
8	680	e820	e1,290	e1,160	e920	e1,020	4,720	1,790	4,270	1,220	626	1,660
9	666	e900	e1,270	e1,150	e920	e1,010	4,740	1,670	4,180	1,210	629	1,930
10	646	e980	e1,240	e1,140	e920	e1,000	4,680	1,570	3,970	1,170	689	1,930
11	638	e1,030	e1,220	e1,120	e910	e1,000	4,600	1,470	3,740	1,260	709	1,990
12	649	e1,120	e1,200	e1,100	e910	e1,000	4,510	1,440	3,530	1,420	710	2,040
13	682	e1,100	e1,170	e1,060	e910	e1,010	4,350	1,500	3,390	1,610	738	2,070
14	762	e1,070	e1,160	e1,030	e920	e1,030	4,120	1,590	3,250	1,840	729	2,100
15	858	1,240	e1,180	e1,020	e920	e1,050	3,900	1,630	3,040	1,900	706	2,120
16	854	1,150	e1,210	e1,020	e920	e1,060	3,670	1,650	2,880	1,850	686	2,170
17	786	1,090	e1,230	e1,020	e930	e1,080	3,450	1,690	2,740	1,770	662	2,390
18	753	1,130	e1,250	e1,030	e930	e1,120	3,250	1,830	2,580	1,690	645	2,710
19	746	1,180	e1,250	e1,030	e940	e1,140	3,180	2,090	2,450	1,590	612	2,870
20	756	1,190	e1,250	e1,030	e950	e1,160	3,230	2,260	2,330	1,520	582	2,880
21	780	1,210	e1,240	e1,040	e960	e1,180	3,390	2,360	2,150	1,440	557	2,820
22	802	e1,190	e1,240	e1,040	e970	e1,200	3,440	2,420	2,000	1,350	547	2,780
23	805	e1,100	e1,240	e1,030	e980	e1,200	3,440	2,420	1,930	1,310	520	2,900
24	791	e730	e1,250	e1,030	e990	e1,210	3,410	2,390	1,830	1,250	497	3,110
25	785	e650	e1,260	e1,030	e1,000	e1,260	3,380	2,330	1,710	1,160	485	3,280
26	768	e900	e1,260	e1,020	e1,010	e1,350	3,340	2,280	1,610	1,010	492	3,390
27	754	e1,060	e1,260	e1,010	e1,030	e1,450	3,220	2,330	1,510	915	505	3,460
28	771	e1,180	e1,260	e990	e1,040	e1,650	3,100	2,390	1,440	925	497	3,470
29	792	e1,260	e1,260	e970	e1,050	e1,900	3,050	2,390	1,420	910	481	3,430
30	804	e1,300	e1,250	e960	---	e2,200	2,970	2,400	1,400	832	479	3,330
31	823	---	e1,250	e950	---	e2,600	---	2,490	---	761	482	---
TOTAL	22,986	30,608	39,060	33,170	27,620	38,220	114,610	65,510	86,460	40,603	19,191	65,333
MEAN	741	1,020	1,260	1,070	952	1,233	3,820	2,113	2,882	1,310	619	2,178
MAX	858	1,300	1,350	1,240	1,050	2,600	4,740	2,840	4,270	1,900	770	3,470
MIN	638	650	1,160	950	910	1,000	2,970	1,440	1,400	761	479	447
AC-FT	45,590	60,710	77,480	65,790	54,780	75,810	227,300	129,900	171,500	80,540	38,070	129,600
CFSM	0.12	0.17	0.21	0.17	0.16	0.20	0.62	0.34	0.47	0.21	0.10	0.35
IN.	0.14	0.19	0.24	0.20	0.17	0.23	0.69	0.40	0.52	0.25	0.12	0.40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2004, BY WATER YEAR (WY)

MEAN	2,671	2,797	2,300	1,981	1,878	2,220	5,134	5,186	3,646	3,122	2,329	2,210
MAX	6,534	6,756	4,498	3,525	3,196	5,415	10,830	15,510	8,072	8,201	8,270	6,689
(WY)	(1966)	(1972)	(1997)	(1966)	(1966)	(1945)	(1966)	(1950)	(1965)	(1993)	(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	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1945 - 2004	
ANNUAL TOTAL	508,933		583,371			
ANNUAL MEAN	1,394		1,594		2,949	
HIGHEST ANNUAL MEAN					4,985 1966	
LOWEST ANNUAL MEAN					796 1977	
HIGHEST DAILY MEAN	4,070	Jul 13	4,740	Apr 9	19,900	May 20, 1950
LOWEST DAILY MEAN	531	Sep 9	447	Sep 3	153	Sep 1, 1961
ANNUAL SEVEN-DAY MINIMUM	568	Sep 5	474	Aug 28	195	Aug 26, 1961
MAXIMUM PEAK FLOW			a4,770	Apr 4	20,000	May 20, 1950
MAXIMUM PEAK STAGE			b9.76	Apr 3	c22.49	May 20, 1950
INSTANTANEOUS LOW FLOW			439	Sep 2	151	Sep 1, 1961
ANNUAL RUNOFF (AC-FT)	1,009,000		1,157,000		2,137,000	
ANNUAL RUNOFF (CFSM)	0.227		0.260		0.480	
ANNUAL RUNOFF (INCHES)	3.08		3.53		6.53	
10 PERCENT EXCEEDS	2,420		3,380		5,780	
50 PERCENT EXCEEDS	1,240		1,180		2,350	
90 PERCENT EXCEEDS	713		688		968	

- a Gage height, 9.22 ft.
- b Backwater from ice.
- c Present datum.
- e Estimated.

