

UPPER MISSISSIPPI RIVER MAIN STEM-Continued

05211000 MISSISSIPPI RIVER AT GRAND RAPIDS, MN

LOCATION.--Lat 47°13'56", long 93°31'48", in SW¹/₄NW¹/₄ sec. 21, T.55 N., R.25 W., Itasca County, Hydrologic Unit 07010103, on left bank, in super-calendar room of Blandin Paper Mill in Grand Rapids, 400 ft downstream from Blandin Dam, 400 ft upstream from bridge on U.S. Highway 169, 2.5 mi upstream from Prairie River, and at mile 1,182 upstream from Ohio River.

DRAINAGE AREA.--3,370 mi² (approximately).

PERIOD OF RECORD.--October 1883 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as "at Pokegama Dam near Grand Rapids" 1942-44.

GAGE.--Water-stage recorder. Datum of gage is 1,242.03 ft above sea level. See WSP 1914 for history of changes prior to Jan. 17, 1951.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Winnibigoshish Lake, Leech Lake, Pokegama Lake, and occasionally at low flow by power plant at Blandin Dam. Backwater from Prairie River occurs at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	375	2330	2610	e1980	1780	1900	573	1470	2550	2550	2750	2650
2	544	2290	2590	e1990	1700	1880	919	1490	2480	2370	2640	2700
3	431	2270	2600	e2000	1710	1910	1150	1490	2500	2180	2670	2740
4	568	2190	2600	e2010	1880	2030	1350	1360	2470	2030	2660	2900
5	548	2160	2600	e2020	2130	2150	1450	1570	2580	2360	2640	2990
6	868	2080	2610	e2040	2110	2140	1730	1730	2530	2440	2610	3020
7	742	2100	2650	e2060	2020	2110	2020	1910	2650	2300	2540	3020
8	747	2050	2790	e2060	1990	2120	2050	2170	2780	2480	2450	3000
9	779	2030	2740	e2060	1920	2120	2010	2170	2850	3010	2640	2960
10	777	2050	2710	e2060	1880	2110	2000	2330	2870	3420	2650	3020
11	764	2130	2660	e2060	1840	2110	2020	2730	2930	3600	2740	3030
12	767	2000	2640	e2060	1930	2100	1960	2850	2870	3640	2880	3030
13	739	2070	2600	e2060	e1940	2110	1880	2500	2860	3540	3120	3010
14	741	2120	2580	e2060	e1950	2080	1880	1450	2790	3430	3410	2970
15	810	2080	2500	e2060	1960	1940	1810	1050	2720	3180	3450	2900
16	938	2090	e2050	e2060	1860	1800	1800	1370	2660	3150	3450	2870
17	1280	2110	e1730	e2060	1890	1750	1740	2320	2540	2980	3590	2730
18	1190	2250	e1760	e2060	1890	1530	1720	2770	2540	2830	3710	2780
19	1260	2480	e1800	e2050	1790	1310	1710	2910	2510	2680	3720	2760
20	1400	2400	e1810	e2060	1610	1320	1730	3360	2480	2400	3710	2640
21	1770	2350	e1840	2090	1490	1310	1710	3650	2490	2170	3700	2630
22	1910	2330	e1870	2080	1350	1170	1720	3730	2520	2290	3590	2590
23	2030	2440	e1900	2020	1240	939	1700	3660	2460	2410	3630	2540
24	2120	2580	e1920	1960	1250	786	1750	3330	2280	2620	3600	2440
25	2100	2540	e1940	1900	1260	636	1720	3130	2170	2690	3600	2430
26	2070	2530	e1950	1850	1380	511	1700	3150	2170	2940	3390	2500
27	2150	2540	e1950	1860	1730	500	1560	2980	2200	3030	3210	2610
28	2120	2520	e1980	1850	1910	541	1500	2860	2150	3000	3150	2570
29	2100	2490	e1970	1860	---	561	1450	2770	2200	2960	3050	2570
30	2200	2520	e1960	1860	---	501	1420	2670	2430	2910	2860	2510
31	2380	---	e1960	1830	---	456	---	2600	---	2800	2710	---
TOTAL	39218	68120	69870	62030	49390	46431	49732	75530	76230	86390	96520	83110
MEAN	1265	2271	2254	2001	1764	1498	1658	2436	2541	2787	3114	2770
MAX	2380	2580	2790	2090	2130	2150	2050	3730	2930	3640	3720	3030
MIN	375	2000	1730	1830	1240	456	573	1050	2150	2030	2450	2430
AC-FT	77790	135100	138600	123000	97970	92100	98640	149800	151200	171400	191400	164800
CFSM	.38	.67	.67	.59	.52	.44	.49	.72	.75	.83	.92	.82
IN.	.43	.75	.77	.68	.55	.51	.55	.83	.84	.95	1.07	.92

e Estimated

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1445	1612	1515	1507	1505	1401	1226	1326	1354	1449	1296	1264
MAX	2865	2528	2595	2410	2729	2762	3442	3026	3271	3363	3711	3542
(WY)	1986	1997	1997	1952	1945	1945	1945	1979	1962	1962	1950	1950
MIN	187	174	186	168	177	198	247	32.5	206	125	98.3	195
(WY)	1977	1977	1977	1977	1977	1977	1959	1949	1988	1961	1961	1976

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1942 - 1999
ANNUAL TOTAL	465100	802571	
ANNUAL MEAN	1274	2199	1408 ^a
HIGHEST ANNUAL MEAN			2269
LOWEST ANNUAL MEAN			277
HIGHEST DAILY MEAN	2790	Dec 8	3730
LOWEST DAILY MEAN	223	Aug 17	375
ANNUAL SEVEN-DAY MINIMUM	313	Sep 15	520
INSTANTANEOUS PEAK FLOW			4060
INSTANTANEOUS PEAK STAGE			12.29
INSTANTANEOUS LOW FLOW			313 ^e
ANNUAL RUNOFF (AC-FT)	922500	1592000	1020000
ANNUAL RUNOFF (CFSM)	.38	.65	.42
ANNUAL RUNOFF (INCHES)	5.13	8.86	5.68
10 PERCENT EXCEEDS	2140	3020	2390
50 PERCENT EXCEEDS	1300	2120	1420
90 PERCENT EXCEEDS	394	1300	371

- a Average based on 116 years of record is 1220 ft³/s; median of annual mean discharges is 1160 ft³/s.
- b Many days, several years.
- c From rating curve extended above 4500 ft³/s.
- d From floodmark; caused by dam failure.
- e Result of regulation.

