

## UPPER MISSISSIPPI RIVER MAIN STEM--Continued

05345000 VERMILLION RIVER NEAR EMPIRE, MN

LOCATION.--Lat 44°40'00", long 93°03'17", in SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 24, T.114 N., R.19 W., Dakota County, Hydrologic Unit 07040001, on right bank and just downstream from County Road 79, 2 mi west of Empire and 4 mi northeast of Farmington.

DRAINAGE AREA.--129 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1942 to June 1945 (no record during July, August, and September 1944), September 1969 to September 1973 (discharge measurements only), October 1973 to current year. Prior to October 1975 published as "near Empire City".

GAGE.--Water-stage recorder. Datum of gage is 851.99 ft above sea level (NGVD of 1929, levels by U.S. Army Corps of Engineers). April 12, 1942 to June 30, 1944, and October 1, 1944 to July 7, 1945, nonrecording gage at same site and present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation at lower flows by wastewater treatment plant upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1965, reached a stage of 7.5 ft, from information by local resident; discharge 6,200 ft<sup>3</sup>/s, from rating extended above 2,100 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	46	44	37	34	32	107	164	122	67	46	39
2	45	51	44	36	e33	32	137	155	139	65	48	38
3	44	47	43	37	33	33	212	145	128	66	44	37
4	44	46	44	37	33	33	266	144	119	63	43	36
5	45	45	41	37	33	33	354	140	118	59	42	35
6	45	68	42	37	32	32	389	144	118	58	41	36
7	47	127	42	37	32	32	500	169	114	56	40	39
8	47	104	42	36	33	32	637	159	109	54	40	44
9	47	78	42	36	32	32	532	150	104	52	39	41
10	44	66	41	36	e32	32	406	208	104	51	39	41
11	43	59	40	36	32	32	374	188	107	49	38	39
12	43	58	40	36	32	34	518	153	133	49	37	38
13	42	67	40	36	32	33	561	138	172	48	37	37
14	41	66	40	36	32	33	451	131	e267	47	36	36
15	42	60	40	36	31	35	368	119	e320	47	37	36
16	43	55	41	36	31	36	317	114	e275	47	38	36
17	43	51	40	36	e31	35	265	110	204	46	37	36
18	43	48	40	36	31	36	223	106	197	47	40	35
19	42	47	39	35	31	36	195	99	169	46	42	36
20	44	46	39	35	31	36	181	98	143	45	39	36
21	44	45	40	35	e31	43	200	115	127	47	39	37
22	44	45	e38	35	31	50	232	121	116	53	39	40
23	46	45	38	34	30	49	405	137	109	55	38	56
24	44	44	37	34	31	48	583	158	e103	49	37	53
25	41	44	e36	33	32	46	453	162	e98	48	38	46
26	47	44	36	34	31	44	348	215	92	47	37	43
27	46	45	37	33	31	42	277	229	e85	46	36	42
28	44	44	37	34	e31	43	229	178	81	46	36	42
29	44	44	37	34	---	45	200	151	74	45	39	43
30	44	44	37	35	---	50	177	134	71	44	46	43
31	43	---	37	35	---	75	---	124	---	43	41	---
TOTAL	1364	1679	1234	1100	889	1204	10097	4558	4118	1585	1229	1196
MEAN	44.0	56.0	39.8	35.5	31.8	38.8	337	147	137	51.1	39.6	39.9
MAX	47	127	44	37	34	75	637	229	320	67	48	56
MIN	41	44	36	33	30	32	107	98	71	43	36	35
AC-FT	2710	3330	2450	2180	1760	2390	20030	9040	8170	3140	2440	2370
CFSM	.34	.43	.31	.28	.25	.30	2.61	1.14	1.06	.40	.31	.31
IN.	.39	.48	.36	.32	.26	.35	2.91	1.31	1.19	.46	.35	.34

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	55.9	51.5	40.4	32.3	38.4	99.8	117	94.5	93.9	75.5	59.0	70.4
MAX	160	133	79.5	58.6	89.8	199	337	223	290	258	234	313
(WY)	1995	1993	1993	1998	1998	1983	2001	1986	1993	1997	1997	1992
MIN	14.9	15.6	12.4	11.0	13.1	25.4	35.2	29.3	23.0	16.0	14.3	14.6
(WY)	1977	1977	1977	1977	1977	1975	1977	1977	1988	1988	1976	1976

SUMMARY STATISTICS FOR 2000 CALENDAR YEAR FOR 2001 WATER YEAR WATER YEARS 1942 - 2001

ANNUAL TOTAL	25573		30253		69.3		
ANNUAL MEAN	69.9		82.9		147		
HIGHEST ANNUAL MEAN					23.6		
LOWEST ANNUAL MEAN					3000		
HIGHEST DAILY MEAN	843	Jul 10	637	Apr 8	Sep 16 1992		
LOWEST DAILY MEAN	36	Dec 25	30	Feb 23	8.4		
ANNUAL SEVEN-DAY MINIMUM	37	Dec 24	31	Feb 17	9.0		
MAXIMUM PEAK FLOW			681		Apr 8		6570
INSTANTANEOUS LOW FLOW			25a		Feb 27		6.8a
ANNUAL RUNOFF (AC-FT)	50720		60010		50180		
ANNUAL RUNOFF (CFSM)	.54		.64		.54		
ANNUAL RUNOFF (INCHES)	7.37		8.72		7.29		
10 PERCENT EXCEEDS	97		179		133		
50 PERCENT EXCEEDS	54		44		45		
90 PERCENT EXCEEDS	42		33		21		

a Result of regulation.  
e Estimated.

