

UPPER MISSISSIPPI RIVER MAIN STEM--Continued

05287890 ELM CREEK NEAR CHAMPLIN, MN

LOCATION.--Lat 45°09'48", long 93°26'11", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 35, T.120 N., R.22 W., Hennepin County, Hydrologic Unit 07010206, on left bank, 33 ft downstream from bridge on Elm Creek Road, 2.5 mi southwest of Champlin.

DRAINAGE AREA.--86.0 mi².

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 850.70 ft above sea level. Prior to March 16, 1979, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

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	2.8	5.3	10	e2.7	1.1	e6.8	68	37	58	121	29	32
2	2.4	4.7	7.8	e2.5	1.2	e7.4	66	34	53	104	27	26
3	2.3	4.4	7.8	e2.3	1.2	e7.7	63	30	48	96	25	23
4	2.4	4.3	7.0	e2.0	1.4	e7.7	62	26	46	91	23	21
5	2.7	4.0	9.9	e1.8	1.5	e7.8	62	26	57	84	21	20
6	2.8	3.8	10	e1.6	3.4	e8.0	87	25	63	78	19	17
7	2.6	5.5	9.9	e1.5	4.3	e9.4	103	26	59	71	17	15
8	2.4	3.9	10	e1.4	4.3	e8.8	115	28	54	69	15	15
9	2.3	4.1	8.5	e1.4	3.8	e10	123	27	49	67	16	12
10	2.5	11	8.5	e1.4	3.1	e14	124	28	46	63	16	12
11	2.6	22	8.4	e1.4	e3.5	e13	129	80	48	58	15	11
12	2.9	24	8.0	e1.4	e3.4	e11	126	186	48	53	14	14
13	3.0	25	7.8	e1.4	e3.6	e10	118	385	46	48	14	15
14	3.2	26	7.6	e1.5	3.5	e10	108	464	44	45	13	15
15	3.5	26	7.5	e1.6	3.5	11	105	492	41	41	12	13
16	6.6	25	7.3	1.7	3.9	16	105	481	39	39	11	10
17	12	25	6.9	1.5	5.4	25	100	464	36	36	10	8.5
18	9.3	28	7.0	1.4	4.5	37	94	424	33	33	9.9	8.0
19	7.7	28	e6.0	1.4	5.2	40	90	386	30	31	9.8	e7.6
20	6.9	25	e5.5	1.4	e4.5	50	86	359	28	28	9.3	e7.2
21	6.1	26	e4.3	1.2	e4.0	65	81	335	26	26	9.4	e6.6
22	5.6	23	e3.6	1.2	e3.5	79	76	296	25	24	39	e6.2
23	5.3	20	e3.5	1.2	3.3	83	68	264	68	23	75	e5.6
24	5.2	18	e3.7	1.2	3.5	78	61	229	135	22	84	e5.2
25	5.1	17	e3.9	1.1	3.8	68	57	194	164	20	84	e5.0
26	4.4	16	e4.0	1.2	4.1	59	53	163	172	33	80	e4.9
27	4.5	14	e4.1	1.2	5.2	52	50	137	179	37	70	e4.7
28	14	13	e3.8	1.1	6.2	58	47	115	177	35	59	e4.4
29	12	12	e3.6	1.1	---	59	43	95	164	32	49	e4.3
30	9.1	11	e3.3	1.1	---	61	40	78	143	29	41	e4.1
31	7.0	---	e3.0	1.1	---	65	---	65	---	30	37	---
TOTAL	161.2	475.0	202.2	46.0	99.9	1037.6	2510	5979	2179	1567	953.4	353.3
MEAN	5.20	15.8	6.52	1.48	3.57	33.5	83.7	193	72.6	50.5	30.8	11.8
MAX	14	28	10	2.7	6.2	83	129	492	179	121	84	32
MIN	2.3	3.8	3.0	1.1	1.1	6.8	40	25	25	20	9.3	4.1
AC-FT	320	942	401	91	198	2060	4980	11860	4320	3110	1890	701
CFSM	.06	.18	.08	.02	.04	.39	.97	2.24	.84	.59	.36	.14
IN.	.07	.21	.09	.02	.04	.45	1.09	2.59	.94	.68	.41	.15

e Estimated

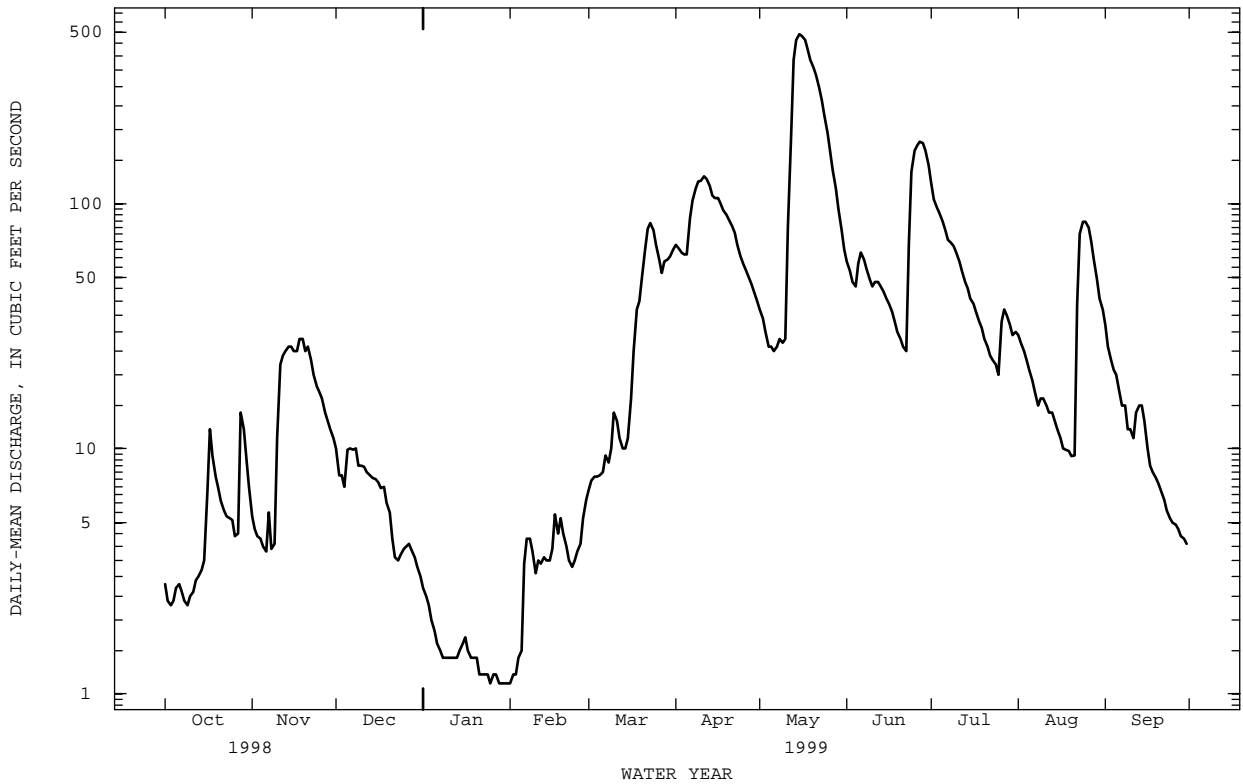
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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	30.1	22.7	11.8	5.67	10.5	69.9	96.7	63.2	40.6	33.9	31.0	27.0
MAX	229	67.4	41.3	22.0	99.1	182	221	193	140	157	143	170
(WY)	1986	1994	1992	1992	1984	1992	1986	1999	1991	1993	1993	1991
MIN	1.13	1.03	.92	.74	.91	5.51	5.31	4.95	1.34	.76	1.44	1.08
(WY)	1990	1990	1990	1991	1990	1981	1987	1987	1988	1988	1989	1988

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1979 - 1999
ANNUAL TOTAL	8819.8	15563.6	
ANNUAL MEAN	24.2	42.6	37.0
HIGHEST ANNUAL MEAN			75.1 1986
LOWEST ANNUAL MEAN			4.54 1988
HIGHEST DAILY MEAN	302	Apr 5	545 Mar 27 1986
LOWEST DAILY MEAN	1.8	Feb 14	.31 Jun 30 1988
ANNUAL SEVEN-DAY MINIMUM	2.0	Feb 8	.35 Jun 26 1988
INSTANTANEOUS PEAK FLOW			597 Mar 27 1986
INSTANTANEOUS PEAK STAGE			9.40 May 15 Mar 27 1986
INSTANTANEOUS LOW FLOW			1.0 Jan 29 .29 Jul 9 1989
ANNUAL RUNOFF (AC-FT)	17490	30870	26820
ANNUAL RUNOFF (CFSM)	.28	.50	.43
ANNUAL RUNOFF (INCHES)	3.82	6.73	5.85
10 PERCENT EXCEEDS	50	101	104
50 PERCENT EXCEEDS	9.9	15	13
90 PERCENT EXCEEDS	2.6	2.4	1.9

a Also occurred Jan. 28-31 and Feb. 1.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	NITRO- GEN, DIS- SOLVED AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 08...	1615	2.5	653	8.0	10.1	--	11.2	101	.041
NOV a10-19	1700	--	--	--	--	--	--	--	.221
19...	1545	27	538	7.8	2.4	739	11.5	87	.122
NOV a21-29	1700	--	--	--	--	--	--	--	.122
DEC 31...	1040	2.0	695	7.2	.0	745	9.2	64	.278
JAN 21...	1145	.71	696	7.6	1.0	740	9.9	72	.419
FEB 19...	1130	7.6	775	7.2	.1	747	9.3	66	.555
MAR 10...	1135	22	662	7.3	.0	751	10.2	71	.120
MAR a19-28	2225	--	--	--	--	--	--	--	.218
APR a06-17	0100	--	--	--	--	--	--	--	.036
08...	1130	116	534	7.7	8.7	738	9.0	80	<.020
MAY a10-20	2050	--	--	--	--	--	--	--	.044
14...	1145	466	464	7.5	12.2	743	6.8	66	.036
MAY a20-30	2030	--	--	--	--	--	--	--	.042
JUL 23...	1200	21	505	7.7	24.9	740	5.5	68	.084
JUL 26- aAUG 04	0230	--	--	--	--	--	--	--	.061
AUG a22-31	0258	--	--	--	--	--	--	--	.058
SEP 02...	1040	26	477	7.6	21.3	740	6.0	70	.058
10...	1200	12	548	7.8	14.5	--	7.8	79	.048
16...	1130	9.2	548	7.9	12.3	749	8.6	82	.040

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, NITRITE DIS- SOLVED AS N) (00613)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED AS N) (00631)	PHOS- PHORUS DIS- TOTAL AS P) (00665)	PHOS- PHORUS DIS- SOLVED AS P) (00666)	CHLO- RIDE, DIS- SOLVED AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)
OCT 08...	.013	.54	.205	.085	.068	23	1	9
NOV a10-19	.012	1.3	.333	.132	.084	54	10	9
NOV 19...	.014	1.2	.271	.107	.062	52	7	7
NOV a21-29	.011	1.5	.242	.106	.037	51	8	10
DEC 31...	.012	.90	.190	.067	<.050	24	1	3
JAN 21...	<.010	.70	.094	.065	E.034	9.7	4	2
FEB 19...	<.010	1.4	.294	.134	E.042	83	<1	<1
MAR 10...	<.010	1.2	.152	.090	E.036	70	9	<1
MAR a19-28	.020	1.6	.567	.210	.090	54	15	8
APR a06-17	<.010	1.8	.296	.106	<.050	63	14	6
APR 08...	<.010	1.4	.409	.162	.242	67	<1	10
MAY a10-20	.028	1.1	.910	.198	.139	44	22	7
MAY 14...	.032	1.3	.950	.189	.146	50	17	6
MAY a20-30	<.010	1.3	.064	.222	.166	36	14	7
JUL 23...	.025	1.3	.180	.315	.239	26	6	1
JUL 26-aAUG 04	.036	1.3	.213	.303	.196	26	6	4
AUG a22-31	.017	1.4	.160	.339	.176	31	14	3
SEP 02...	.015	1.1	.143	.243	.176	30	6	2
SEP 10...	.015	1.0	.143	.204	.124	28	1	<1
SEP 16...	.010	.93	.114	.160	.093	32	2	<1

QUALITY ASSURANCE SAMPLES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	NITRO- GEN, AMMONIA DIS- SOLVED AS N) (00608)	NITRO- GEN, NITRITE DIS- SOLVED AS N) (00613)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED AS N) (00631)	PHOS- PHORUS TOTAL AS P) (00665)	PHOS- PHORUS DIS- SOLVED AS P) (00666)	CHLO- RIDE, DIS- SOLVED AS CL) (00940)	RESI TOTAE AT 1 DEG. SUS PEND (MG) (005)
APR 08...	1220	--	<.020	<.010	1.3	.437	.153	.055	--	-
APR 08...	1221	--	.103	<.010	1.3	.446	.134	.060	--	-
JUL 26-aAUG 04	0231	--	.058	.036	1.3	.216	.312	.210	26	4

a Samples collected by automatic sampler.