

## 05345000 VERMILLION RIVER NEAR EMPIRE, MN

LOCATION.--Lat 44°40'00", long 93°03'17", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  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. 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 2004 TO SEPTEMBER 2005  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	61	55	41	34	40	204	70	71	102	48	39
2	63	59	54	41	34	39	132	69	68	94	47	38
3	59	59	53	40	35	39	112	67	66	93	45	37
4	56	60	53	39	36	40	102	65	67	91	64	46
5	55	59	53	36	40	43	96	64	73	86	62	51
6	54	60	53	38	66	59	92	65	75	82	56	46
7	53	56	52	38	55	197	88	64	67	81	48	51
8	55	55	52	38	46	140	84	65	122	80	55	64
9	52	55	53	39	43	74	80	66	218	77	58	67
10	51	57	56	39	41	71	77	66	199	73	77	68
11	49	56	57	38	41	62	79	65	135	70	71	65
12	51	55	57	38	41	54	93	72	122	65	79	62
13	51	55	55	38	44	51	96	126	111	63	67	77
14	52	54	50	37	67	49	88	150	116	63	61	85
15	52	56	52	35	103	46	81	134	118	60	59	73
16	53	55	51	34	81	43	85	120	114	57	57	66
17	54	55	50	33	62	43	119	113	105	55	55	60
18	53	54	49	33	56	43	111	114	98	60	56	58
19	49	58	44	33	52	43	110	140	94	53	57	57
20	51	77	47	33	50	43	143	126	96	55	52	53
21	51	72	45	34	47	44	120	113	114	55	52	49
22	52	65	42	34	44	48	105	109	104	52	49	52
23	54	61	42	35	42	67	93	100	96	50	48	49
24	53	59	41	36	42	91	86	91	117	49	51	46
25	53	57	40	35	42	106	84	89	148	52	49	92
26	51	57	39	36	41	95	82	93	119	69	52	146
27	50	60	40	34	42	92	80	90	102	61	56	117
28	57	60	41	34	43	96	76	88	114	57	50	101
29	82	57	41	34	---	99	74	83	127	54	49	96
30	72	56	42	34	---	120	71	78	110	52	48	87
31	64	---	42	35	---	229	---	75	---	49	43	---
TOTAL	1,711	1,760	1,501	1,122	1,370	2,306	2,943	2,830	3,286	2,060	1,721	1,998
MEAN	55.2	58.7	48.4	36.2	48.9	74.4	98.1	91.3	110	66.5	55.5	66.6
MAX	82	77	57	41	103	229	204	150	218	102	79	146
MIN	49	54	39	33	34	39	71	64	66	49	43	37
AC-FT	3,390	3,490	2,980	2,230	2,720	4,570	5,840	5,610	6,520	4,090	3,410	3,960
CFSM	0.43	0.45	0.38	0.28	0.38	0.58	0.76	0.71	0.85	0.52	0.43	0.52
IN.	0.49	0.51	0.43	0.32	0.40	0.66	0.85	0.82	0.95	0.59	0.50	0.58

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2005, BY WATER YEAR (WY)

MEAN	61.1	52.6	41.4	33.1	38.7	96.4	114	96.1	97.8	74.9	61.6	72.5
MAX	263	133	79.5	58.6	89.8	199	337	223	290	258	234	313
(WY)	(2003)	(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)

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SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1942 - 2005	
ANNUAL TOTAL	23,776		24,608		70.3	
ANNUAL MEAN	65.0		67.4		23.6	
HIGHEST ANNUAL MEAN					147	1998
LOWEST ANNUAL MEAN					23.6	1977
HIGHEST DAILY MEAN	355	Jun 13	229	Mar 31	3,000	Sep 16, 1992
LOWEST DAILY MEAN	28	Jan 6	33	Jan 17-20	8.4	Jan 15, 1975
ANNUAL SEVEN-DAY MINIMUM	28	Jan 23	33	Jan 16	9.0	Jan 13, 1975
MAXIMUM PEAK FLOW			289	Mar 31	6,570	Sep 16, 1992
MAXIMUM PEAK STAGE			5.59	Mar 31	10.00	Sep 16, 1992
INSTANTANEOUS LOW FLOW			a27	Jan 5	b6.8	Aug 15, 1992
ANNUAL RUNOFF (AC-FT)	47,160		48,810		50,910	
ANNUAL RUNOFF (CFSM)	0.504		0.523		0.545	
ANNUAL RUNOFF (INCHES)	6.86		7.10		7.40	
10 PERCENT EXCEEDS	103		111		132	
50 PERCENT EXCEEDS	55		57		47	
90 PERCENT EXCEEDS	29		39		22	

a Due in part to regulation.  
 b Result of regulation.

