

MINNESOTA RIVER BASIN--Continued

05291000 WHETSTONE RIVER NEAR BIG STONE CITY, SD

LOCATION.--Lat 45°17'32", long 96°29'14", in SE¹/₄NW¹/₄ sec. 18, T.121 N., R.46 W., Grant County, Hydrologic Unit 07020001, on right bank 20 ft downstream from former highway bridge site, 1.5 mi west of Big Stone City, and 4.5 mi upstream from Big Stone Lake.

DRAINAGE AREA.--398 mi².

PERIOD OF RECORD.--March 1910 to November 1912 (no winter records), and March 1931 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 895: Drainage area. WSP 1308: 1932(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 996.96 ft above sea level, adjustment of 1912. Mar. 8, 1910 to Nov. 30, 1912, nonrecording gage 2 mi downstream at different datum. Mar. 18, 1931 to May 3, 1939, nonrecording gage, at site 20 ft upstream at present datum. May 4, 1939 to Nov. 8, 1952, water-stage recorder at site 80 ft down-stream at present datum.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 26 ft in June 1919, present site and datum, from information by local resident, discharge 29,000 ft³/s, from dam break.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 230 ft³/s (revised) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct 19	0300	271	3.36	Apr 7	1800	314	3.55
Nov 26	1800	202	3.00	Apr 13	1300	279	3.36
Mar 1	(daily)	e215	--	May 8	2300	241	3.16
Mar 17	1500	*325	3.62				

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	8.2	66	129	e24	e12	e215	114	76	30	23	10	12
2	8.0	61	122	e23	e12	e180	112	70	30	22	10	11
3	8.5	57	110	e21	e12	e166	116	65	29	23	9.9	11
4	14	51	102	e19	e12	e148	133	64	27	24	9.7	46
5	23	47	97	e18	e12	e125	147	72	30	21	8.9	71
6	23	45	90	e17	e13	e115	193	87	33	19	8.6	71
7	21	42	79	e16	e14	e105	269	146	34	17	8.1	48
8	20	41	e67	e15	e16	e100	269	237	56	25	8.1	32
9	16	41	e63	e14	e23	e115	205	226	105	29	9.2	23
10	14	43	e62	e13	e30	e103	163	179	123	25	9.8	17
11	13	51	71	e12	e45	e96	168	144	106	22	8.8	14
12	13	48	62	e11	e56	e87	192	121	83	20	7.9	12
13	12	44	66	e11	e80	e80	259	110	63	18	8.0	11
14	13	48	64	e10	e110	e77	225	101	51	17	7.7	12
15	15	57	62	e10	e100	e79	185	96	43	16	7.5	11
16	38	68	60	e11	e80	82	169	105	38	25	7.2	11
17	161	78	59	e11	e70	251	147	128	34	21	6.4	9.8
18	197	95	50	e12	e64	277	134	169	33	17	7.7	9.1
19	215	93	e35	e12	e60	197	123	135	36	25	7.0	9.1
20	128	96	e28	e12	e58	172	113	107	35	24	6.2	8.9
21	91	129	e24	e12	e58	148	105	91	35	20	6.1	8.7
22	72	112	e23	e12	e60	136	99	79	37	19	6.4	8.5
23	60	111	e22	e12	e63	116	95	69	42	18	6.1	8.5
24	53	129	e22	e12	e66	103	92	62	36	17	5.5	8.6
25	47	158	e21	e12	e73	95	86	58	29	15	5.5	8.3
26	45	187	e21	e12	e81	88	82	52	25	13	5.7	14
27	47	195	e23	e12	e96	83	84	48	25	12	5.2	12
28	45	171	e25	e12	e140	98	83	43	24	13	7.2	11
29	53	154	e26	e12	---	113	85	38	27	12	10	9.8
30	61	136	e25	e12	---	136	82	34	24	12	13	8.9
31	63	---	e25	e12	---	126	---	34	---	11	13	---
TOTAL	1597.7	2654	1735	424	1516	4012	4329	3046	1323	595	250.4	548.2
MEAN	51.5	88.5	56.0	13.7	54.1	129	144	98.3	44.1	19.2	8.08	18.3
MAX	215	195	129	24	140	277	269	237	123	29	13	71
MIN	8.0	41	21	10	12	77	82	34	24	11	5.2	8.3
AC-FT	3170	5260	3440	841	3010	7960	8590	6040	2620	1180	497	1090
CFSM	.13	.22	.14	.03	.14	.33	.36	.25	.11	.05	.02	.05
IN.	.15	.25	.16	.04	.14	.37	.40	.28	.12	.06	.02	.05

e Estimated

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	14.9	14.7	9.80	6.38	15.2	161	213	92.8	76.8	58.8	19.9	10.6
MAX	280	122	56.0	36.3	168	612	1677	491	478	885	327	77.0
(WY)	1996	1996	1999	1994	1998	1978	1997	1972	1984	1993	1991	1995
MIN	.60	.40	.20	.000	.000	2.85	3.63	.77	1.42	.035	.000	.36
(WY)	1932	1935	1935	1934	1934	1969	1934	1934	1936	1934	1934	1935

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1910 - 1999
ANNUAL TOTAL	36614.7	22030.3	
ANNUAL MEAN	100	60.4	59.6 ^a
HIGHEST ANNUAL MEAN			232
LOWEST ANNUAL MEAN			1.52
HIGHEST DAILY MEAN	1000	Apr 8	6600
LOWEST DAILY MEAN	7.5	Sep 21	.00 ^b
ANNUAL SEVEN-DAY MINIMUM	8.0	Sep 17	5.8
INSTANTANEOUS PEAK FLOW			325
INSTANTANEOUS PEAK STAGE			4.44 ^c
INSTANTANEOUS LOW FLOW			4.9
ANNUAL RUNOFF (AC-FT)	72630	43700	43150
ANNUAL RUNOFF (CFSM)	.25	.15	.15
ANNUAL RUNOFF (INCHES)	3.42	2.06	2.03
10 PERCENT EXCEEDS	217	142	110
50 PERCENT EXCEEDS	48	41	8.4
90 PERCENT EXCEEDS	11	9.8	1.4

a Median of annual mean discharges is 47 ft³/s.
 b Many days, several years.
 c Backwater from ice.

