

MINNESOTA RIVER BASIN--Continued

05291000 WHETSTONE RIVER NEAR BIG STONE CITY, SD

LOCATION.--Lat 45°17'32", long 96°29'14", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ 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, S.D., 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 in sea level (NGVD 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 and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 8	0500	*9,930	*15.93	May 7	2200	844	5.98
Apr 12	2000	4,640	11.77	Jun 11	0900	1,340	7.19
Apr 24	1700	1,990	8.42	Jun 15	0400	2,780	9.60

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	3.7	40	e7.7	e5.2	e7.3	e7.0	e23	333	120	70	56	11
2	3.4	33	e7.5	e5.3	e7.1	e7.0	40	296	140	66	39	12
3	3.3	26	e7.3	e5.4	e7.0	e6.9	151	264	133	66	32	11
4	3.3	24	e7.1	e5.9	e7.0	e6.9	554	237	114	61	29	11
5	3.5	21	e6.9	e6.4	e7.0	e6.9	e440	224	104	56	26	11
6	3.5	23	e6.8	e6.7	e6.9	e6.9	493	281	96	52	24	10
7	3.3	25	e6.7	e7.0	e6.9	e6.9	3050	637	95	50	23	11
8	3.3	24	e6.6	e7.3	e6.9	e6.9	8090	668	95	47	21	11
9	3.4	24	e6.5	e7.4	e6.9	e6.9	3630	426	90	43	20	11
10	3.4	23	e6.4	e7.6	e6.9	e6.9	1960	321	481	40	19	11
11	3.3	23	e6.2	e7.8	e6.9	e7.0	1840	283	1110	37	19	10
12	3.3	26	e6.1	e7.8	e6.9	e7.7	3710	252	564	36	19	9.7
13	3.9	28	e5.9	e7.9	e7.0	e8.1	3100	228	382	35	18	9.4
14	4.0	23	e5.8	e7.9	e7.0	e8.5	1450	206	1070	35	18	11
15	3.9	e18	e5.7	e8.0	e7.0	e8.8	1000	181	2050	32	19	13
16	4.3	e16	e5.6	e7.9	e7.0	e9.1	741	158	766	30	19	16
17	3.9	e14	e5.5	e7.8	e7.0	e9.3	541	151	461	30	18	16
18	4.9	e12	e5.5	e7.8	e7.0	e9.3	453	136	358	28	17	15
19	5.3	e10	e5.4	e7.8	e7.0	e10	421	126	324	28	17	14
20	5.5	e8.5	e5.4	e7.8	e7.0	e11	475	122	297	32	16	16
21	6.9	e8.3	e5.4	e7.7	e7.0	e11	509	133	257	34	16	20
22	8.1	e8.0	e5.4	e7.7	e7.0	e12	558	136	213	30	16	19
23	11	e7.9	e5.3	e7.7	e7.0	e12	1350	141	174	31	16	16
24	12	e7.8	e5.3	e7.7	e7.0	e11	1910	134	144	31	16	15
25	13	e7.8	e5.3	e7.6	e7.0	e11	1270	125	121	29	16	14
26	16	e7.8	e5.3	e7.6	e7.0	e10	892	113	104	28	16	13
27	15	e7.8	e5.2	e7.6	e7.0	e11	641	116	96	29	14	12
28	17	e7.8	e5.1	e7.6	e7.0	e12	484	114	88	34	13	12
29	17	e7.7	e5.1	e7.6	---	e13	395	101	81	42	13	11
30	19	e7.7	e5.0	e7.5	---	e15	367	92	76	80	12	10
31	20	---	e5.1	e7.4	---	e18	---	88	---	83	12	---
TOTAL	231.4	520.1	184.1	226.4	195.7	294.0	40538	6823	10204	1325	629	382.1
MEAN	7.46	17.3	5.94	7.30	6.99	9.48	1351	220	340	42.7	20.3	12.7
MAX	20	40	7.7	8.0	7.3	18	8090	668	2050	83	56	20
MIN	3.3	7.7	5.0	5.2	6.9	6.9	23	88	76	28	12	9.4
AC-FT	459	1030	365	449	388	583	80410	13530	20240	2630	1250	758
CFSM	.02	.04	.01	.02	.02	.02	3.40	.55	.85	.11	.05	.03
IN.	.02	.05	.02	.02	.02	.03	3.79	.64	.95	.12	.06	.04

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	14.8	14.8	9.79	6.42	15.0	157	226	93.5	79.5	57.9	19.7	10.5
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 2000 CALENDAR YEAR FOR 2001 WATER YEAR WATER YEARS 1910 - 2001

ANNUAL TOTAL	4719.9		61552.8		60.5a		
ANNUAL MEAN	12.9		169		232		
HIGHEST ANNUAL MEAN					1.52		
LOWEST ANNUAL MEAN					1997		
HIGHEST DAILY MEAN	57	Apr 22	8090	Apr 8	8090	Apr 8	2001
LOWEST DAILY MEAN	2.1	Sep 13	3.3	Oct 3c	.00b	Sep 13	1931
ANNUAL SEVEN-DAY MINIMUM	2.2	Sep 13	3.4	Oct 6	.00	Jul 31	1933
MAXIMUM PEAK FLOW			9930		Apr 8		2001
MAXIMUM PEAK STAGE			15.93		Apr 8		2001
INSTANTANEOUS LOW FLOW			2.9		Oct 3		1931
ANNUAL RUNOFF (AC-FT)	9360		122100		43800		
ANNUAL RUNOFF (CFMS)	.032		.42		.15		
ANNUAL RUNOFF (INCHES)	.44		5.75		2.06		
10 PERCENT EXCEEDS	28		387		110		
50 PERCENT EXCEEDS	8.8		14		8.5		
90 PERCENT EXCEEDS	3.4		5.5		1.4		

- a Median of annual mean discharges is 47 ft³/s.
- b Many days, several years.
- c Also occurred Oct. 4,7,8,11,and 12.
- e Estimated.

