

## 05291000 WHETSTONE RIVER NEAR BIG STONE CITY, SD

LOCATION.--Lat 45°17'30", 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 mi<sup>2</sup>.

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 downstream 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 ft<sup>3</sup>/s, from dam break.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	e4.1	e6.8	e4.0	e2.1	e21	24	14	48	5.5	7.7	3.2
2	e2.7	e4.1	e6.9	e3.9	e2.1	e24	21	13	57	4.7	6.1	3.0
3	e2.6	e4.0	e7.0	e3.7	e2.1	e22	18	13	52	4.9	4.9	2.8
4	e2.5	e4.1	e7.5	e3.6	e2.0	e30	17	12	46	8.3	4.4	2.6
5	e2.2	e4.2	e7.6	e3.3	e1.9	e32	15	12	38	7.3	4.1	3.2
6	e2.0	e4.2	e7.4	e3.3	e1.8	e24	15	11	32	9.1	3.9	3.7
7	e2.0	e4.2	e7.3	e3.2	e1.8	e24	13	10	26	10	3.5	3.3
8	e2.1	e4.3	e7.2	e3.1	e1.9	e27	12	10	24	13	3.0	4.6
9	e2.2	e4.4	e6.9	e2.9	e1.9	e25	11	9.8	25	10	4.0	4.4
10	e2.3	e4.4	e6.1	e2.9	e1.9	e25	11	8.8	29	16	3.9	4.6
11	e2.4	e4.8	e5.1	e2.9	e1.8	e26	10	9.6	27	19	4.0	5.5
12	e3.2	e5.4	e4.4	e2.7	e1.8	e26	10	15	34	16	3.6	5.2
13	e3.4	e6.0	e4.1	e2.7	e1.9	e27	9.7	17	30	14	2.5	3.8
14	e3.5	6.3	e4.1	e2.7	e1.9	e25	9.0	21	34	12	2.3	3.1
15	e3.9	6.7	e4.1	e2.7	e1.9	e24	8.9	21	33	10	2.9	6.4
16	e4.4	7.0	e4.4	e2.7	e1.8	e22	8.9	19	28	8.8	3.4	5.2
17	e4.5	6.8	e4.5	e2.7	e1.7	e22	8.6	18	25	7.4	3.3	9.4
18	e4.4	7.1	e4.5	e2.7	e1.8	e22	8.8	15	21	6.3	2.8	13
19	e4.2	6.9	e4.4	e2.6	e1.8	e23	9.9	17	18	5.7	2.4	8.1
20	e3.9	6.6	e4.3	e2.6	e2.1	e25	12	17	15	5.6	2.0	8.9
21	e3.6	6.8	e4.2	e2.6	e2.8	e27	22	16	14	4.9	2.2	13
22	e3.3	6.8	e4.2	e2.6	e4.1	e29	28	14	12	4.0	2.7	17
23	e3.0	6.6	e4.3	e2.4	e5.8	e27	33	13	10	3.9	2.3	33
24	e3.0	e6.4	e4.2	e2.4	e4.4	e26	31	12	9.0	4.3	2.3	27
25	e3.0	e6.5	e4.1	e2.3	e3.7	26	26	12	8.3	3.9	2.8	34
26	e3.0	e6.6	e4.1	e2.2	e3.6	24	22	12	7.5	4.0	4.7	33
27	e3.5	e6.3	e4.3	e2.3	e8.9	24	20	21	7.3	3.2	3.5	26
28	e3.9	e6.4	e4.3	e2.1	e9.7	27	18	21	7.5	4.1	4.3	23
29	e4.1	e6.6	e4.2	e2.1	e14	28	16	18	7.4	4.9	3.3	19
30	e4.2	e6.5	e4.1	e2.1	---	32	14	34	6.4	10	3.0	14
31	e4.1	---	e4.0	e2.1	---	29	---	40	---	7.8	3.8	---
TOTAL	100.0	171.1	160.6	86.1	95.0	795	482.8	496.2	731.4	248.6	109.6	343.0
MEAN	3.23	5.70	5.18	2.78	3.28	25.6	16.1	16.0	24.4	8.02	3.54	11.4
MAX	4.5	7.1	7.6	4.0	14	32	33	40	57	19	7.7	34
MIN	2.0	4.0	4.0	2.1	1.7	21	8.6	8.8	6.4	3.2	2.0	2.6
AC-FT	198	339	319	171	188	1,580	958	984	1,450	493	217	680
CFSM	0.01	0.01	0.01	0.01	0.01	0.06	0.04	0.04	0.06	0.02	0.01	0.03
IN.	0.01	0.02	0.02	0.01	0.01	0.07	0.05	0.05	0.07	0.02	0.01	0.03

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2004, BY WATER YEAR (WY)

MEAN	14.5	14.6	9.94	6.58	15.1	153	219	91.9	78.0	56.2	19.2	10.4
MAX	280	122	56.0	36.3	168	612	1,677	491	478	885	327	77.0
(WY)	(1996)	(1996)	(1999)	(1994)	(1998)	(1978)	(1997)	(1972)	(1984)	(1993)	(1991)	(1995)
MIN	0.60	0.40	0.20	0.00	0.00	2.85	3.63	0.77	1.42	0.04	0.00	0.36
(WY)	(1932)	(1935)	(1935)	(1934)	(1934)	(1969)	(1934)	(1934)	(1936)	(1934)	(1934)	(1935)

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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1910 - 2004	
ANNUAL TOTAL	6,767.4		3,819.4		a59.0	
ANNUAL MEAN	18.5		10.4		232	
HIGHEST ANNUAL MEAN					1.52 1934	
LOWEST ANNUAL MEAN					8,090 Apr 8, 2001	
HIGHEST DAILY MEAN	325	Mar 17	57	Jun 2	b0.00	Sep 13, 1931
LOWEST DAILY MEAN	1.6	Sep 9	1.7	Feb 17	c0.00	Jul 31, 1933
ANNUAL SEVEN-DAY MINIMUM	1.8	Sep 7	1.8	Feb 11	d2.70	Apr 8, 2001
MAXIMUM PEAK FLOW			e58	Jun 2	f0.00	Sep 13, 1931
MAXIMUM PEAK STAGE			d2.70	Mar 4	e15.93	Apr 8, 2001
INSTANTANEOUS LOW FLOW			f1.7	Feb 17	f0.00	Sep 13, 1931
ANNUAL RUNOFF (AC-FT)	13,420		7,580		42,720	
ANNUAL RUNOFF (CFSM)	0.047		0.026		0.148	
ANNUAL RUNOFF (INCHES)	0.63		0.36		2.01	
10 PERCENT EXCEEDS	43		26		109	
50 PERCENT EXCEEDS	6.6		6.3		8.9	
90 PERCENT EXCEEDS	2.5		2.3		1.5	

- a Median of annual mean discharges is 42 ft<sup>3</sup>/s.
- b Many days, several years.
- c Stage, 1.99 ft
- d Backwater from ice.
- e Estimated.
- f Minimum daily, backwater from ice.

