05049995 MUD LAKE ABOVE WHITE ROCK DAM NEAR WHITE ROCK, SD

LOCATION.--Lat 45° 51'41", long 96° 34'20", in NW$^1/_4$ NW$^1/_4$ sec. 34, T.128 N., R.47 W., Roberts County, Hydrologic Unit 09020101, on Sisseton Indian Reservation, on left bank, 10 ft west of White Rock Dam, 4 mi south of White Rock and 5 mi northwest of Wheaton, MN.

DRAINAGE AREA.--

PERIOD OF RECORD.--October 2000 to current year. Gage height record prior to October 2000 can be obtained from Corp of Engineers.

GAGE.--Water-stage recorder. Datum of gage is 960.00 ft, adjustment of 1912 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records poor. Lake regulated by Lake Traverse-Boise de Sioux Flood Control and Water Conservation project.

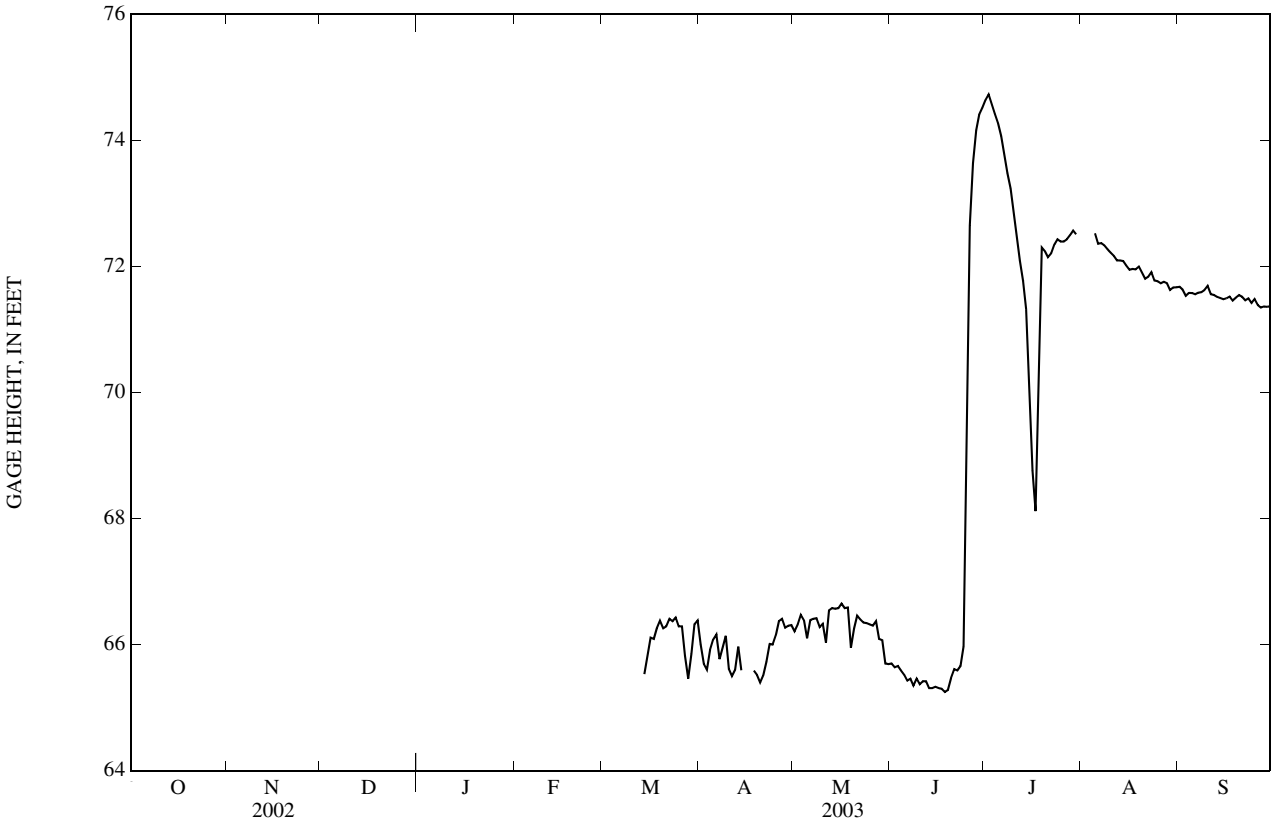
EXTREMES FOR PERIOD OF RECORD.---Maximum gage-height, 80.90 ft, Apr. 29, 2001; maximum daily, 80.76 ft, Apr. 19, 2001; minimum gage-height recorded, 65.14 ft, many days, several years (due in part to regulation), stage was observed lower than the detection limits of gage but precise stage readings were not determined; minimum daily recorded, 65.22 ft, June 14, 2002.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height, 74.76 ft, July 2; maximum daily, 74.73 ft, July 2; minimum gage-height recorded, 65.14 ft (minimum detection limit), but was observed lower at times between Oct. 1 and Mar. 13 but precise stage readings were not determined.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	66.00	66.21	65.70	74.64	---	71.68
2	---	---	---	---	---	---	65.69	66.32	65.64	74.73	---	71.63
3	---	---	---	---	---	---	65.60	66.47	65.66	74.58	---	71.53
4	---	---	---	---	---	---	65.92	66.38	65.59	74.42	---	71.58
5	---	---	---	---	---	---	66.08	66.10	65.52	74.28	72.52	71.58
6	---	---	---	---	---	---	66.16	66.39	65.43	74.07	72.36	71.56
7	---	---	---	---	---	---	65.77	66.41	65.46	73.78	72.37	71.58
8	---	---	---	---	---	---	65.95	66.42	65.35	73.48	72.33	71.59
9	---	---	---	---	---	---	66.14	66.28	65.46	73.24	72.27	71.63
10	---	---	---	---	---	---	65.62	66.33	65.37	72.84	72.22	71.69
11	---	---	---	---	---	---	65.50	66.03	65.42	72.45	72.17	71.56
12	---	---	---	---	---	---	65.60	66.54	65.42	72.09	72.10	71.55
13	---	---	---	---	---	---	65.97	66.58	65.31	71.77	72.10	71.52
14	---	---	---	---	---	65.53	65.59	66.57	65.31	71.32	72.08	71.50
15	---	---	---	---	---	65.84	---	66.58	65.33	70.14	72.02	71.48
16	---	---	---	---	---	66.11	---	66.65	65.31	68.76	71.95	71.49
17	---	---	---	---	---	66.09	---	66.58	65.30	68.12	71.96	71.52
18	---	---	---	---	---	66.26	65.59	66.59	65.25	70.44	71.95	71.46
19	---	---	---	---	---	66.38	65.52	65.95	65.28	72.30	72.00	71.50
20	---	---	---	---	---	66.26	65.40	66.26	65.47	72.24	71.90	71.54
21	---	---	---	---	---	66.29	65.51	66.46	65.61	72.15	71.81	71.52
22	---	---	---	---	---	66.41	65.73	66.40	65.59	72.21	71.84	71.46
23	---	---	---	---	---	66.37	66.01	66.35	65.66	72.35	71.91	71.50
24	---	---	---	---	---	66.43	66.00	66.34	65.97	72.43	71.78	71.42
25	---	---	---	---	---	66.29	66.15	66.32	68.44	72.40	71.77	71.48
26	---	---	---	---	---	66.29	66.37	66.30	72.65	72.40	71.73	71.39
27	---	---	---	---	---	65.82	66.41	66.37	73.64	72.43	71.76	71.35
28	---	---	---	---	---	65.46	66.27	66.09	74.16	72.50	71.73	71.36
29	---	---	---	---	---	65.85	66.30	66.07	74.41	72.57	71.63	71.36
30	---	---	---	---	---	66.32	66.31	65.70	74.52	72.51	71.67	71.37
31	---	---	---	---	---	66.38	---	65.69	---	---	71.67	---
MEAN	---	---	---	---	---	---	---	66.31	66.97	---	---	71.51
MAX	---	---	---	---	---	---	---	66.65	74.52	---	---	71.69
MIN	---	---	---	---	---	---	---	65.69	65.25	---	---	71.35

05049995 MUD LAKE ABOVE WHITE ROCK DAM NEAR WHITE ROCK, SD—Continued



05050000 BOIS DE SIOUX RIVER NEAR WHITE ROCK, SD

LOCATION.--Lat 45° 51'45", long 96° 34'25", in $SW^1/_4$ $SW^1/_4$ sec. 27, T.128 N., R.47 W., Roberts County, Hydrologic Unit 09020101, on Sisseton Indian Reservation, on left bank at Big Slough Outlet, 300 ft downstream from White Rock Dam, 4 mi south of White Rock and 5 mi northwest of Wheaton, MN.

DRAINAGE AREA.--1,160 mi^2 (approximately).

PERIOD OF RECORD.--October 1941 to current year.

GAGE.--Water-stage recorder. Datum of gage is 960.00 ft. above sea level, (adjustment of 1912, levels by U.S. Army Corps of Engineers). Prior to Jan. 14, 1943, nonrecording gage at same site at datum 0.11 ft lower. Jan. 15, 1943, to Sept. 30, 1963, water-stage recorder at same site at datum 0.11 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Lake Traverse-Boise de Sioux Flood Control and Water Conservation project.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	4.1	e3.1	e0.44	e0.00	e0.00	98	105	33	625	e77	0.12
2	1.3	3.9	e2.7	e0.43	e0.00	e0.00	51	118	28	695	e78	0.13
3	1.2	3.7	e2.3	e0.42	e0.00	e0.00	39	142	30	735	e79	0.11
4	2.5	3.9	e1.9	e0.41	e0.00	e0.00	75	128	23	773	80	<0.10
5	5.5	3.7	e1.6	e0.40	e0.00	e0.00	103	85	16	762	79	<0.10
6	7.5	3.7	e1.3	e0.38	e0.00	e0.00	109	134	9.1	744	79	<0.10
7	23	4.1	e1.1	e0.37	e0.00	e0.00	58	138	15	757	78	<0.10
8	11	4.0	e0.94	e0.36	e0.00	e0.00	77	137	9.9	759	107	<0.10
9	6.3	3.9	e0.84	e0.33	e0.00	e0.00	100	122	15	742	126	0.00
10	5.8	4.3	e0.79	e0.28	e0.00	e0.00	41	143	10	745	126	<0.10
11	9.7	4.5	e0.77	e0.24	e0.00	e0.00	26	89	12	743	126	0.00
12	e6.8	4.1	e0.76	e0.21	e0.00	e0.00	32	164	11	712	124	<0.10
13	e5.0	3.8	e0.76	e0.20	e0.00	e8.2	75	167	6.4	681	69	<0.10
14	e4.0	4.6	e0.77	e0.18	e0.00	e50	41	181	5.9	653	40	<0.10
15	e3.0	3.6	e0.78	e0.17	e0.00	e130	6.5	194	5.9	639	17	<0.10
16	3.2	4.4	e0.79	e0.15	e0.00	e150	18	192	5.3	606	5.5	<0.10
17	3.4	3.8	e0.76	e0.14	e0.00	135	37	175	8.6	553	4.8	0.00
18	4.2	4.2	e0.72	e0.13	e0.00	144	57	176	5.1	336	2.0	<0.10
19	3.7	4.4	e0.68	e0.12	e0.00	169	59	87	4.8	174	0.69	0.00
20	3.8	4.4	e0.63	e0.11	e0.00	143	52	116	12	174	0.56	0.00
21	3.8	4.3	e0.58	e0.10	e0.00	148	47	149	21	174	0.54	0.00
22	3.7	5.5	e0.54	e0.10	e0.00	166	58	136	22	90	0.49	0.00
23	3.7	4.0	e0.50	e0.10	e0.00	159	87	124	43	5.7	0.35	0.00
24	3.6	e3.8	e0.47	e0.00	e0.00	176	84	123	122	13	0.27	0.00
25	3.8	e3.7	e0.45	e0.00	e0.00	148	103	120	314	8.3	0.32	0.00
26	3.8	e3.7	e0.45	e0.00	e0.00	140	135	117	132	11	0.38	0.00
27	3.8	e3.6	e0.46	e0.00	e0.00	78	147	126	62	15	0.38	0.00
28	4.4	e3.7	e0.47	e0.00	e0.00	35	119	84	228	16	0.29	0.00
29	4.0	e3.9	e0.47	e0.00	---	72	120	74	427	56	0.25	0.00
30	4.0	e3.5	e0.46	e0.00	---	146	121	39	539	75	0.25	0.00
31	4.1	---	e0.45	e0.00	---	158	---	33	---	e76	0.16	---
TOTAL	155.4	120.8	29.29	5.77	0.00	2,355.20	2,175.5	3,918	2,176.0	13,148.0	1,302.23	1.56
MEAN	5.01	4.03	0.94	0.19	0.000	76.0	72.5	126	72.5	424	42.0	0.052
MAX	23	5.5	3.1	0.44	0.00	176	147	194	539	773	126	0.13
MIN	1.2	3.5	0.45	0.00	0.00	0.00	6.5	33	4.8	5.7	0.16	0.00
AC-FT	308	240	58	11	0.00	4,670	4,320	7,770	4,320	26,080	2,580	3.1
CFSM	0.00	0.00	0.00	0.00	0.00	0.07	0.06	0.11	0.06	0.37	0.04	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.08	0.07	0.13	0.07	0.42	0.04	0.00

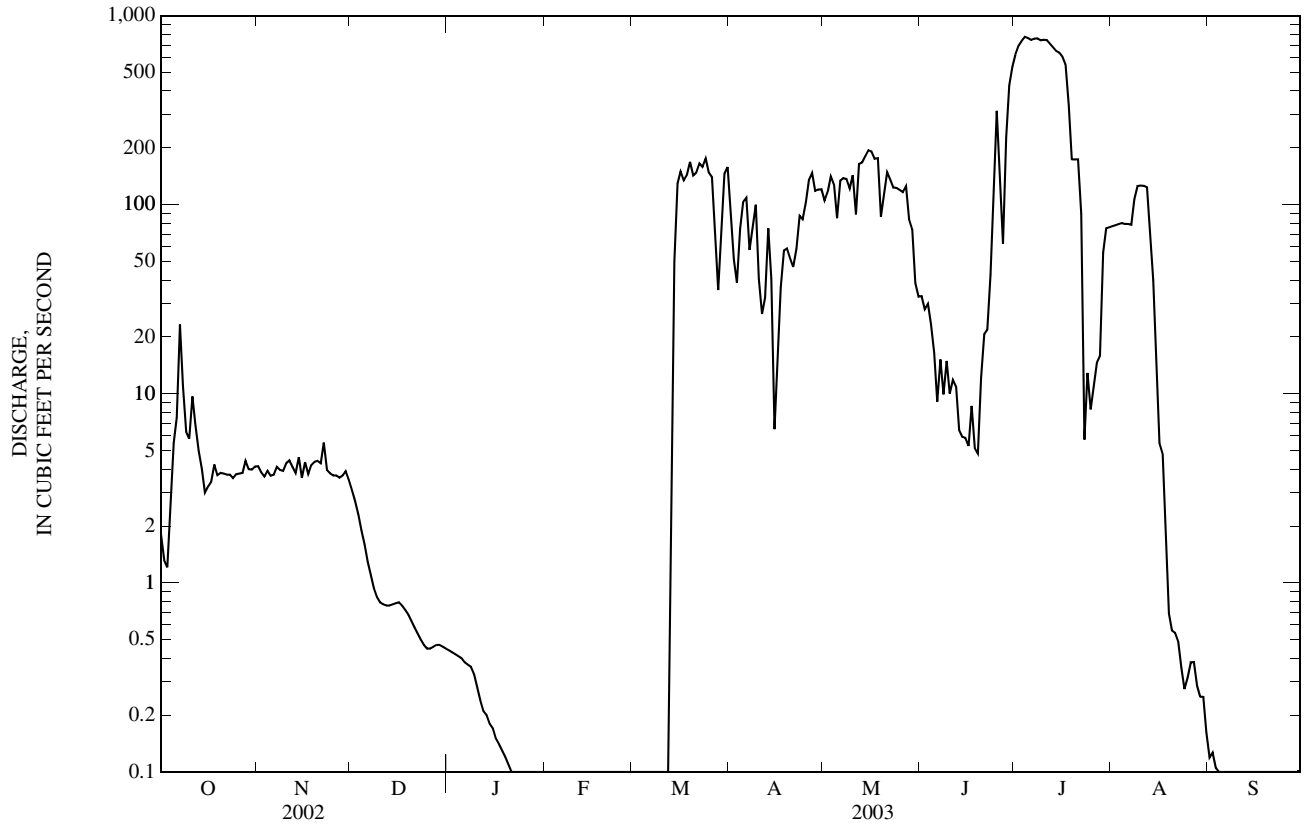
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2003, BY WATER YEAR (WY)

MEAN	28.2	16.1	10.2	3.38	7.43	73.2	327	314	251	179	71.7	34.7
MAX	535	307	207	42.4	148	628	3,814	1,445	1,103	1,035	1,182	1,062
(WY)	(1994)	(1996)	(1999)	(1997)	(1997)	(1996)	(1997)	(1997)	(1986)	(1962)	(1993)	(1993)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.23	0.010	0.000	0.000	0.000
(WY)	(1942)	(1942)	(1942)	(1942)	(1942)	(1942)	(1942)	(1977)	(1977)	(1961)	(1970)	(1960)

05050000 BOIS DE SIOUX RIVER NEAR WHITE ROCK, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1942 - 2003	
ANNUAL TOTAL	31,859.00		25,387.75			
ANNUAL MEAN	87.3		69.6		[a]110	
HIGHEST ANNUAL MEAN					536	1997
LOWEST ANNUAL MEAN					0.38	1977
HIGHEST DAILY MEAN	554	Jul 18	773	Jul 4	7,710	Apr 16, 1997
LOWEST DAILY MEAN	0.45	Dec 25	[b]0.00	Jan 24	[c]0.00	Oct 1, 1941
ANNUAL SEVEN-DAY MINIMUM	0.46	Dec 25	0.00	Jan 24	0.00	Oct 1, 1941
MAXIMUM PEAK FLOW			792	Jul 4	[d]8,750	Apr 20, 1997
MAXIMUM PEAK STAGE			8.45	Jul 4	16.90	Apr 20, 1997
INSTANTANEOUS LOW FLOW			0.00	Jan 24		
ANNUAL RUNOFF (AC-FT)	63,190		50,360		79,630	
ANNUAL RUNOFF (CFSM)	0.075		0.060		0.095	
ANNUAL RUNOFF (INCHES)	1.02		0.81		1.29	
10 PERCENT EXCEEDS	276		158		357	
50 PERCENT EXCEEDS	8.0		4.0		3.4	
90 PERCENT EXCEEDS	1.5		0.00		0.00	

a Median of annual mean discharges, 64 ft^3/s.
b Many days.
c Many days, several years; result of regulation.
d Estimated, from observed readings made under non-ideal conditions. Some evidence that peak occurred Apr. 16 at 7930 ft^3/s.
e Estimated.
< Actual value is known to be less than the value shown.



05289985 BIG COULEE CREEK NEAR PEEVER, SD

LOCATION.--Lat 45° 29'14", long 96° 57'26", in $SW^1/_4$ $SW^1/_4$ $SW^1/_4$ $SW^1/_4$ sec.29, T.124 N., R.50 W., Roberts County, Hydrologic Unit 07020001, on right downstream side of county highway bridge, 1.5 mi downstream of I-29, 7 mi northeast of Wilmot, and 3.9 mi south of Peever.

DRAINAGE AREA.--12.1 mi^2.

PERIOD OF RECORD.--October 1987 to September 30, 2003 (discontinued).

REVISED RECORDS.--WDR SD-01-1: 1989 (Mar. 25 daily and maximum), 1991(P), 1993(P), 1995(P), 1997(M), 1998 (Apr. 26, May 12 daily and peaks), 1999(P).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,240 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.02	0.48	0.33	e0.55	e0.25	e0.05	1.9	1.6	1.8	1.3	e0.10	0.00
2	0.02	0.50	e0.28	e0.55	e0.20	e0.04	1.8	1.5	1.9	0.92	e0.10	0.00
3	0.03	0.59	e0.26	e0.60	e0.15	e0.05	1.5	2.0	2.4	0.71	e0.10	0.00
4	0.15	0.60	e0.25	e0.65	e0.15	e0.04	1.3	1.6	1.9	1.5	e0.15	0.00
5	0.12	0.63	e0.25	e0.60	e0.15	e0.04	1.2	2.5	2.4	1.8	e0.20	0.00
6	0.23	0.62	e0.25	e0.60	e0.10	e0.05	1.2	3.4	2.7	0.70	e0.15	0.00
7	0.21	0.68	e0.24	e0.65	e0.10	e0.04	1.3	2.5	2.2	0.42	e0.10	0.00
8	0.21	0.67	e0.24	e0.74	e0.10	e0.04	1.1	2.1	2.3	0.34	e0.10	0.00
9	0.22	0.66	e0.23	e0.72	e0.10	e0.04	1.3	14	2.3	0.32	e0.20	0.00
10	0.27	0.61	e0.23	e0.62	e0.09	e0.05	1.4	8.2	1.5	0.28	e0.15	0.00
11	0.30	0.48	0.20	e0.60	e0.09	e0.05	1.4	5.5	1.7	0.25	e0.15	0.00
12	0.28	0.60	0.20	e0.55	e0.09	e0.06	1.4	3.9	1.4	0.24	e0.10	0.00
13	0.29	0.65	0.25	e0.55	e0.09	e0.07	1.4	4.2	0.95	0.30	e0.07	0.00
14	0.35	0.58	0.42	e0.50	e0.08	e1.0	1.4	13	0.93	0.22	e0.06	0.00
15	0.32	0.51	0.48	e0.45	e0.08	e10	1.5	6.0	0.75	0.18	e0.05	0.00
16	0.36	0.42	e0.47	e0.40	e0.08	e40	2.9	4.2	0.69	0.16	e0.04	0.00
17	0.36	0.52	e0.47	e0.40	e0.09	e30	3.7	3.4	0.63	0.16	e0.03	0.00
18	0.44	0.64	e0.45	e0.40	e0.08	e20	4.0	3.2	0.58	0.15	e0.02	0.00
19	0.43	0.58	e0.45	e0.40	e0.08	e15	9.7	3.1	0.51	0.16	e0.01	0.00
20	0.50	0.55	e0.45	e0.35	e0.09	e10	6.1	2.8	0.48	20	e0.00	0.00
21	0.54	0.54	e0.45	e0.30	e0.07	6.4	3.8	2.7	0.46	e5.0	e0.00	0.00
22	0.46	0.50	e0.45	e0.25	e0.06	5.4	2.9	2.8	2.3	e1.5	0.00	0.00
23	0.41	e0.45	e0.40	e0.25	e0.04	6.0	2.5	2.8	16	e1.0	0.00	0.00
24	0.68	e0.38	e0.40	e0.20	e0.03	5.8	2.1	3.0	95	e0.75	0.00	0.00
25	0.78	0.33	e0.45	e0.20	e0.04	3.6	1.9	3.1	22	e0.50	0.00	0.00
26	0.76	0.34	e0.45	e0.15	e0.04	2.7	1.8	3.4	9.4	e0.50	0.00	0.00
27	0.74	0.35	e0.48	e0.20	e0.04	2.4	3.1	2.4	6.1	e0.40	0.00	0.00
28	0.56	0.35	e0.50	e0.20	e0.05	2.0	1.4	2.4	4.6	e0.30	0.00	0.00
29	e0.52	0.54	e0.60	e0.15	---	1.6	1.9	2.2	2.8	e0.20	0.00	0.00
30	e0.51	0.41	e0.60	e0.20	---	1.6	1.9	2.2	1.9	e0.15	0.00	0.00
31	e0.50	---	e0.55	e0.25	---	1.6	---	1.8	---	e0.10	0.00	---
TOTAL	11.57	15.76	11.73	13.23	2.61	165.72	70.8	117.5	190.58	40.51	1.88	0.00
MEAN	0.37	0.53	0.38	0.43	0.093	5.35	2.36	3.79	6.35	1.31	0.061	0.000
MAX	0.78	0.68	0.60	0.74	0.25	40	9.7	14	95	20	0.20	0.00
MIN	0.02	0.33	0.20	0.15	0.03	0.04	1.1	1.5	0.46	0.10	0.00	0.00
AC-FT	23	31	23	26	5.2	329	140	233	378	80	3.7	0.00

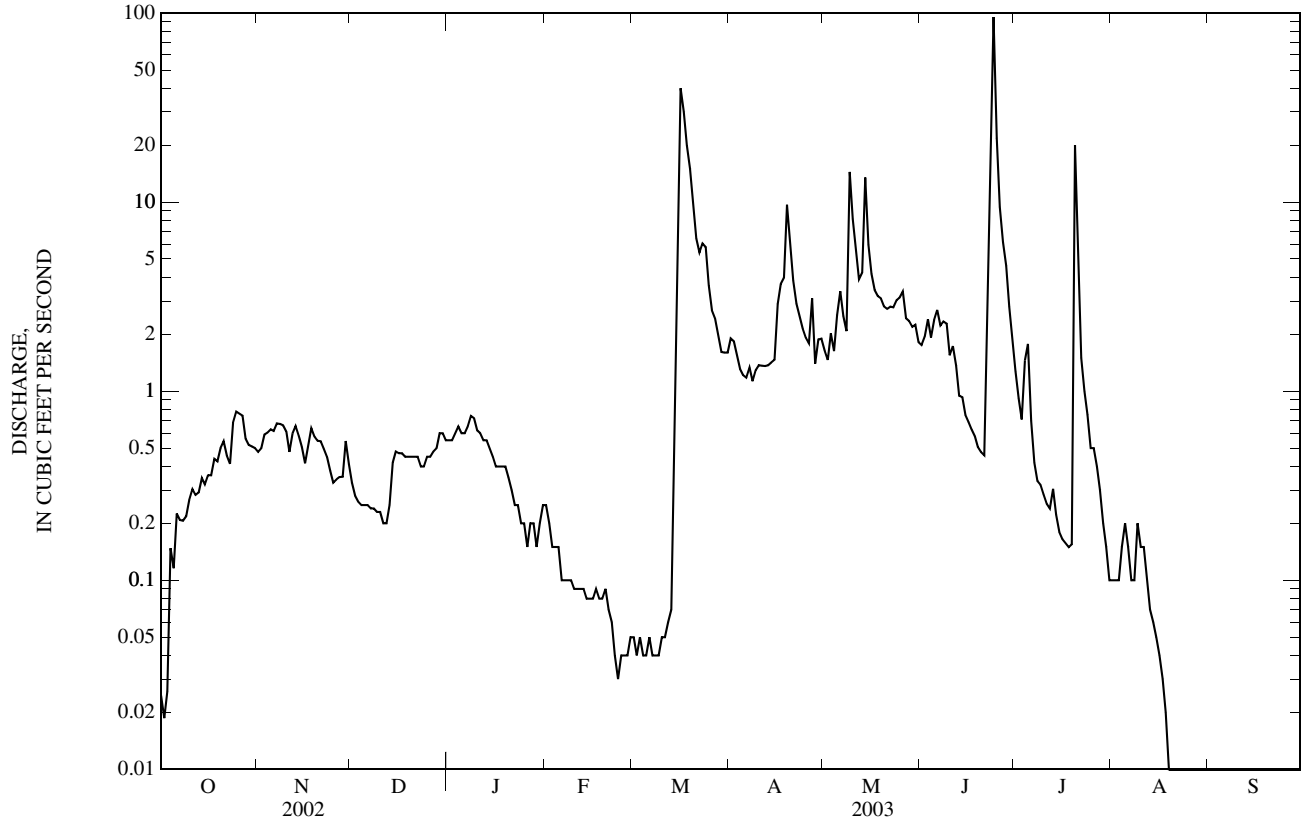
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2003, BY WATER YEAR (WY)

MEAN	1.30	1.09	0.59	0.33	2.22	9.39	12.0	6.37	4.12	3.28	1.08	0.76
MAX	4.48	3.69	1.66	0.96	7.15	23.4	44.9	19.0	11.1	16.6	3.69	2.91
(WY)	(1996)	(1994)	(1999)	(1997)	(1998)	(1995)	(2001)	(1995)	(1991)	(1993)	(1993)	(1992)
MIN	0.000	0.000	0.000	0.000	0.000	1.42	1.52	1.09	0.013	0.000	0.000	0.000
(WY)	(1988)	(1988)	(1988)	(1988)	(1989)	(1991)	(1990)	(1988)	(1988)	(1988)	(1988)	(1988)

05289985 BIG COULEE CREEK NEAR PEEVER, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1988 - 2003	
ANNUAL TOTAL	605.42		641.89			
ANNUAL MEAN	1.66		1.76		3.54	
HIGHEST ANNUAL MEAN					6.86	1995
LOWEST ANNUAL MEAN					0.63	1990
HIGHEST DAILY MEAN	33	May 9	95	Jun 24	250	Mar 12, 1995
LOWEST DAILY MEAN	0.01	Sep 22	0.00	Aug 20	[a]0.00	Oct 1, 1987
ANNUAL SEVEN-DAY MINIMUM	0.01	Sep 21	0.00	Aug 20	0.00	Oct 1, 1987
MAXIMUM PEAK FLOW			245	Jun 24	[b]322	Jun 21, 1991
MAXIMUM PEAK STAGE			7.81	Jun 24	[c]9.43	Mar 27, 1997
ANNUAL RUNOFF (AC-FT)	1,200		1,270		2,570	
10 PERCENT EXCEEDS	3.6		3.1		8.4	
50 PERCENT EXCEEDS	0.45		0.45		0.80	
90 PERCENT EXCEEDS	0.06		0.00		0.00	

a No flow for many days in most years.
b Gage height, 8.21 ft.
c Backwater from beaver dam.
e Estimated.



05291000 WHETSTONE RIVER NEAR BIG STONE CITY, SD

LOCATION.--Lat 45° 17'30", long 96° 29'14", in $SE^1/_4$ $NW^1/_4$ 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^2.

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^3/s, from dam break.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 230 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 17	1000	*e325	*5.19

No other peak greater than base discharge.

Minimum discharge (daily), e1.6 ft^3/s, Sept. 9.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	14	e13	e9.1	e7.4	e4.5	e37	28	21	32	6.4	e2.3
2	5.2	12	11	e9.0	e7.5	e4.4	e37	27	20	26	6.2	e2.3
3	5.3	12	e11	e8.9	e7.3	e4.3	e36	26	19	22	5.9	e2.2
4	11	12	e11	e8.8	e7.2	e4.2	e36	24	19	20	5.8	e2.1
5	13	12	e10	e8.6	e6.9	e4.2	e34	26	19	18	5.5	e2.0
6	12	12	e10	e8.5	e6.7	e4.1	e31	27	20	16	5.4	e2.0
7	11	12	e10	e8.4	e6.6	e4.1	e28	27	22	14	5.4	e1.9
8	9.7	12	e10	e8.4	e6.4	e4.0	e26	30	34	12	5.0	e1.8
9	9.0	11	e11	e8.4	e6.2	e3.9	e24	41	33	13	e4.9	e1.6
10	9.5	13	e12	e8.4	e6.0	e3.9	e22	53	32	12	e4.9	e1.8
11	9.1	13	e12	e8.4	e5.8	e3.8	e21	99	31	11	e4.6	e2.0
12	8.9	12	e13	e8.2	e5.6	e3.8	e20	101	28	10	e3.7	e1.9
13	7.6	12	e14	e8.0	e5.5	e3.8	e20	79	25	8.8	e3.2	e1.7
14	7.1	12	e13	e7.8	e5.5	e19	e20	76	24	8.1	e2.9	e1.9
15	8.4	12	e13	e7.5	e5.4	e73	e21	75	21	7.5	e2.7	e2.1
16	8.6	13	e12	e7.3	e5.4	e174	e24	87	18	7.0	e2.5	e2.0
17	8.7	12	e12	e7.1	e5.4	e325	e30	77	16	7.4	e2.2	e1.9
18	9.4	11	e11	e6.9	e5.4	e231	e41	61	14	8.6	e2.1	e2.6
19	9.0	12	e11	e6.8	e5.5	e143	e55	67	13	7.3	e2.2	e3.4
20	9.0	12	e11	e6.6	e5.8	e87	70	54	10	13	e2.3	e3.1
21	9.5	12	e11	e6.4	e5.8	e73	85	44	8.6	20	e2.5	e3.9
22	9.7	12	e10	e6.1	e5.6	e69	72	40	8.9	28	e2.7	e4.1
23	9.6	12	e10	e5.8	e5.3	e73	57	38	8.6	33	e2.5	e4.4
24	9.7	11	e10	e5.6	e5.1	e66	48	36	9.4	25	e2.1	e3.9
25	9.7	12	e9.6	e5.5	e5.0	e61	41	35	18	20	e1.8	e3.4
26	9.1	11	e9.3	e5.6	e4.8	e57	36	33	116	15	e1.7	e2.8
27	9.5	11	e9.3	e6.0	e4.7	e53	33	32	195	12	e1.7	e2.6
28	11	11	e9.6	e6.4	e4.6	e48	31	31	122	10	e2.5	e2.5
29	9.5	11	e9.6	e6.6	---	e43	27	28	63	8.6	e2.7	e2.9
30	9.7	10	e9.4	e6.9	---	e39	28	25	43	7.2	e2.4	2.9
31	11	---	e9.3	e7.2	---	e38	---	24	---	6.4	e2.3	---
TOTAL	285.2	356	338.1	229.2	164.4	1,725.0	1,091	1,451	1,031.5	458.9	108.7	76.0
MEAN	9.20	11.9	10.9	7.39	5.87	55.6	36.4	46.8	34.4	14.8	3.51	2.53
MAX	13	14	14	9.1	7.5	325	85	101	195	33	6.4	4.4
MIN	5.2	10	9.3	5.5	4.6	3.8	20	24	8.6	6.4	1.7	1.6
AC-FT	566	706	671	455	326	3,420	2,160	2,880	2,050	910	216	151
CFSM	0.02	0.03	0.03	0.02	0.01	0.14	0.09	0.12	0.09	0.04	0.01	0.01
IN.	0.03	0.03	0.03	0.02	0.02	0.16	0.10	0.14	0.10	0.04	0.01	0.01

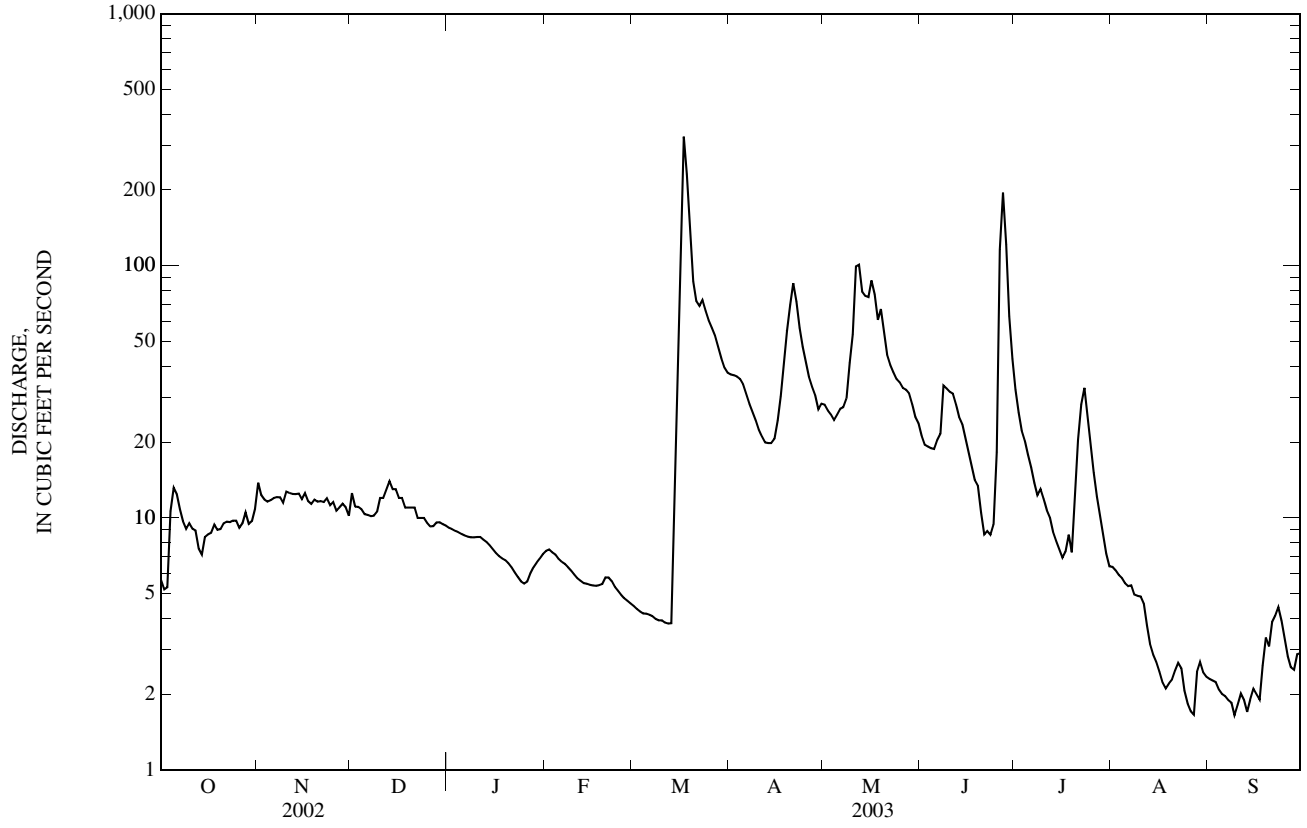
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2003, BY WATER YEAR (WY)

MEAN	14.7	14.8	10.0	6.63	15.2	155	222	92.9	78.7	56.8	19.4	10.3
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	0.000	0.000	2.85	3.63	0.77	1.42	0.035	0.000	0.36
(WY)	(1932)	(1935)	(1935)	(1934)	(1934)	(1969)	(1934)	(1934)	(1936)	(1934)	(1934)	(1935)

05291000 WHETSTONE RIVER NEAR BIG STONE CITY, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1910 - 2003	
ANNUAL TOTAL	14,751.2		7,315.0			
ANNUAL MEAN	40.4		20.0		[a]59.6	
HIGHEST ANNUAL MEAN					232	1997
LOWEST ANNUAL MEAN					1.52	1934
HIGHEST DAILY MEAN	1,080	Mar 30	325	Mar 17	8,090	Apr 8, 2001
LOWEST DAILY MEAN	4.3	Sep 24	1.6	Sep 9	[b]0.00	Sep 13, 1931
ANNUAL SEVEN-DAY MINIMUM	4.6	Sep 19	1.8	Sep 7	0.00	Jul 31, 1933
MAXIMUM PEAK FLOW			[c]325	Mar 17	9,930	Apr 8, 2001
MAXIMUM PEAK STAGE			[d]5.19	Mar 17	15.93	Apr 8, 2001
INSTANTANEOUS LOW FLOW			[f]1.6	Sep 9	[b]0.00	Sep 13, 1931
ANNUAL RUNOFF (AC-FT)	29,260		14,510		43,210	
ANNUAL RUNOFF (CFSM)	0.10		0.050		0.15	
ANNUAL RUNOFF (INCHES)	1.38		0.68		2.04	
10 PERCENT EXCEEDS	89		43		110	
50 PERCENT EXCEEDS	18		10		9.0	
90 PERCENT EXCEEDS	8.3		2.7		1.5	

a Median of annual mean discharges, 44 ft^3/s.
b Many days, several years.
c Estimated, maximum daily.
d Backwater from ice.
e Estimated.
f Mininum daily discharge, backwater from beaver dam.



05292704 NORTH FORK YELLOW BANK RIVER NEAR ODESSA, MN

LOCATION.--Lat 45° 11'21", long 96° 24'54", in NW$^1/_4$ NW$^1/_4$ SW$^1/_4$ sec.22, T.120 N., R.46 W., Lac qui Parle County, Hydrologic Unit 07020001, on left bank at upstream side of County Highway #7 bridge, 11.0 mi east-southeast of Milbank, SD, 6.4 mi southwest of Odessa, and 2.9 mi upstream from mouth.

DRAINAGE AREA.--208 mi^2.

PERIOD OF RECORD.--May 1991 to September 30, 2003 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,020 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.88	3.9	e4.3	e4.5	e0.12	0.00	19	13	10	1.7	0.16	0.01
2	0.82	4.0	e4.0	e4.5	e0.10	0.00	19	13	10	1.5	0.12	0.01
3	0.92	3.8	e4.0	e5.0	e0.08	0.00	18	12	9.2	1.2	0.11	0.01
4	1.9	3.7	e4.0	e5.0	e0.06	0.00	17	12	7.8	1.1	0.12	0.01
5	2.3	3.7	e4.0	e4.5	e0.08	0.00	15	13	7.4	1.1	0.12	0.01
6	2.1	3.7	e4.5	e4.5	e0.06	0.00	13	13	7.6	0.93	0.12	0.01
7	1.8	3.8	e4.3	e5.0	e0.06	0.00	13	14	7.9	0.80	0.09	0.01
8	1.8	3.7	e4.4	e4.5	e0.05	0.00	12	15	7.4	0.65	0.08	0.01
9	1.6	3.7	e5.0	e4.0	e0.05	0.00	12	18	8.2	0.86	0.08	0.01
10	1.9	3.7	e4.5	e2.0	e0.05	0.00	11	20	8.8	0.83	0.11	0.15
11	1.9	4.0	e4.5	e1.0	e0.04	0.00	11	35	8.4	0.77	0.19	0.11
12	1.7	4.0	e4.8	e0.79	e0.04	e0.00	11	30	7.8	0.78	0.35	0.05
13	1.5	4.1	e5.0	e0.79	e0.03	e0.01	11	27	7.1	0.59	0.12	0.01
14	1.3	3.9	e5.0	e0.61	e0.03	e1.0	11	28	5.8	0.54	0.09	0.01
15	1.3	e3.9	e5.5	e0.58	e0.02	e10	11	28	5.3	0.55	0.07	0.01
16	1.4	e4.0	e5.5	e0.40	e0.02	e75	12	28	4.8	0.47	0.07	0.01
17	2.0	e4.0	e5.5	e0.40	e0.02	e100	14	25	3.9	0.47	0.06	0.02
18	2.0	e4.0	e7.0	e0.32	e0.02	e80	13	23	3.5	0.45	0.05	0.14
19	1.7	4.0	e6.0	e0.32	e0.03	e65	19	22	2.9	0.35	0.04	0.06
20	1.6	4.2	e5.5	e0.22	e0.04	e50	24	20	2.6	0.88	0.06	0.04
21	2.3	4.5	e5.0	e0.22	e0.02	e48	31	21	2.3	1.1	0.03	0.06
22	2.1	4.5	e4.0	e0.22	e0.01	e43	24	19	2.3	0.80	0.01	0.04
23	2.2	e4.2	e3.5	e0.14	e0.01	e40	22	18	2.3	0.73	0.02	0.01
24	2.9	e4.1	e3.5	e0.14	e0.00	e38	19	18	2.9	0.53	0.01	0.01
25	3.0	e4.0	e3.5	e0.12	e0.00	e33	17	18	3.7	0.49	0.02	0.01
26	2.6	e3.9	e3.8	e0.08	e0.00	e31	15	18	3.5	0.40	0.02	0.01
27	2.8	e3.9	e4.0	e0.12	e0.00	30	14	16	2.5	0.25	0.01	0.01
28	3.0	e3.9	e4.5	e0.10	e0.00	29	13	15	2.2	0.23	0.05	0.01
29	2.9	e5.0	e5.0	e0.08	---	25	13	15	2.1	0.21	0.04	0.01
30	e3.1	e4.5	e5.0	e0.09	---	21	13	14	2.3	0.18	0.01	0.01
31	3.6	---	e4.8	e0.10	---	20	---	11	---	0.18	0.01	---
TOTAL	62.92	120.3	143.9	50.34	1.04	739.01	467	592	162.5	21.62	2.44	0.88
MEAN	2.03	4.01	4.64	1.62	0.037	23.8	15.6	19.1	5.42	0.70	0.079	0.029
MAX	3.6	5.0	7.0	5.0	0.12	100	31	35	10	1.7	0.35	0.15
MIN	0.82	3.7	3.5	0.08	0.00	0.00	11	11	2.1	0.18	0.01	0.01
AC-FT	125	239	285	100	2.1	1,470	926	1,170	322	43	4.8	1.7

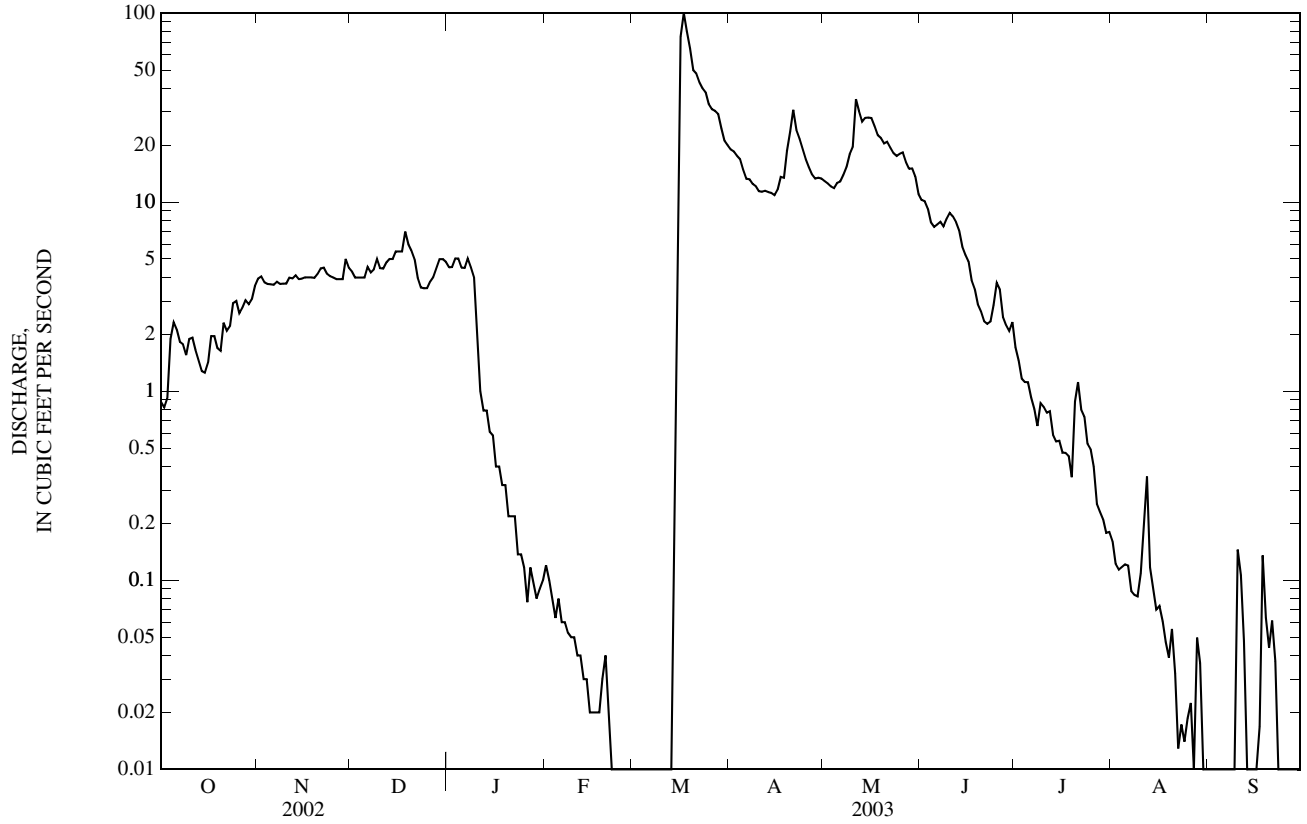
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

MEAN	40.0	24.6	12.7	7.41	35.8	149	275	85.1	76.6	101	21.3	14.5
MAX	342	122	32.7	19.5	166	422	977	267	212	501	107	72.5
(WY)	(1996)	(1996)	(1996)	(1996)	(1996)	(1997)	(1997)	(1995)	(1992)	(1993)	(1995)	(1995)
MIN	0.94	2.42	0.57	0.34	0.037	9.73	12.7	9.14	5.42	0.70	0.079	0.029
(WY)	(2001)	(2001)	(2001)	(2001)	(2003)	(2001)	(2000)	(1992)	(2003)	(2003)	(2003)	(2003)

05292704 NORTH FORK YELLOW BANK RIVER NEAR ODESSA, MN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	9,667.41		2,363.95			
ANNUAL MEAN	26.5		6.48		[a]70.2	
HIGHEST ANNUAL MEAN					134	1997
LOWEST ANNUAL MEAN					6.48	2003
HIGHEST DAILY MEAN	1,100	Mar 31	100	Mar 17	5,000	Apr 8, 2001
LOWEST DAILY MEAN	0.51	Sep 23	0.00	Feb 24	0.00	Feb 24, 2003
ANNUAL SEVEN-DAY MINIMUM	0.56	Sep 18	0.00	Feb 24	0.00	Feb 24, 2003
MAXIMUM PEAK FLOW			150	Mar 17	[b]6,840	Apr 8, 2001
MAXIMUM PEAK STAGE			[c]6.83	Mar 17	[c]18.02	Mar 29, 1997
ANNUAL RUNOFF (AC-FT)	19,180		4,690		50,860	
10 PERCENT EXCEEDS	60		19		140	
50 PERCENT EXCEEDS	4.8		2.3		14	
90 PERCENT EXCEEDS	0.86		0.01		1.7	

a Median of annual mean discharges, 72 ft^3/s.
b Gage height, 16.72 ft, backwater from ice.
c Backwater from ice.
e Estimated.



06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, SD

LOCATION.--Lat 45° 32'49", long 103° 58'23", in SW$^1/_4$ sec.2, T.18 N., R.1 E., Harding County, Hydrologic Unit 10110201, on left bank 15 ft upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 mi^2, approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1904. WSP 1729: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3,108.98 ft above NGVD of 1929. Sept. 2, 1903, to Nov. 30, 1906, nonrecording gage at site 0.5 mi upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft downstream, and Oct. 9, 1957, to Sept. 30, 1976, water-stage recorder at present site both at datum 2.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Small diversions upstream from station for irrigation. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1952 reached a stage of about 18 ft, present datum, from local residents.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.88	7.6	e3.1	e3.0	e3.8	e2.7	33	9.0	25	14	0.56	0.84
2	1.1	e7.4	e3.0	e3.0	e4.0	e2.4	28	5.1	15	17	0.59	0.73
3	1.1	e7.0	e2.7	e3.0	e4.1	e2.2	18	6.2	8.3	13	0.57	0.65
4	1.2	e6.4	e2.4	e3.0	e4.0	e2.2	11	3.7	4.6	15	0.56	0.64
5	1.4	e6.4	e2.4	e3.1	e3.7	e2.1	7.7	3.7	3.0	15	0.49	0.58
6	1.3	6.8	e2.5	e3.2	e3.1	e2.0	6.1	3.5	4.1	11	0.55	0.58
7	1.7	7.9	e2.5	e3.7	e2.7	e2.0	10	16	5.6	6.9	0.52	0.60
8	2.1	8.2	e2.6	e3.8	e2.6	e2.1	6.3	53	6.3	4.1	0.52	0.63
9	2.5	8.8	e2.6	e3.9	e2.6	e2.2	3.2	32	6.3	5.4	0.50	0.54
10	2.4	8.9	e2.6	e3.8	e2.5	e2.3	1.2	22	4.4	4.5	0.49	7.4
11	2.6	10	e2.6	e3.5	e2.5	e2.6	1.7	16	7.0	3.4	0.45	73
12	3.0	10	e2.6	e3.4	e2.4	e3.3	2.9	12	38	2.6	0.43	192
13	3.4	10	e2.6	e3.4	e2.4	e4.9	2.2	17	20	2.4	0.44	59
14	3.6	10	e2.6	e3.3	e2.3	e7.3	1.4	13	14	1.9	0.45	31
15	3.7	e10	e2.6	e3.2	e2.2	e12	1.2	9.8	45	1.3	0.43	62
16	4.5	e10	e2.5	e3.2	e2.3	e7.0	0.98	7.8	25	1.0	0.42	34
17	4.9	e10	e2.5	e3.2	e2.7	e34	0.99	6.6	16	1.1	0.45	23
18	4.8	11	e2.5	e3.3	e3.1	e51	1.4	9.3	11	1.2	0.43	17
19	5.1	12	e2.5	e3.2	e3.6	e20	1.5	15	7.8	1.2	0.60	14
20	5.8	13	e2.4	e3.1	e4.2	e400	3.3	25	6.0	1.1	0.63	8.6
21	6.6	e13	e2.2	e3.1	e4.2	e290	3.1	19	7.1	0.85	0.59	11
22	7.3	e9.0	e2.0	e3.0	e4.0	e200	2.6	15	6.2	0.78	0.54	12
23	6.9	e4.5	e1.8	e2.9	e3.8	e180	2.2	12	5.3	0.75	0.46	8.3
24	6.9	e2.3	e1.6	e3.0	e3.5	e150	2.3	5.4	6.7	0.69	0.46	6.2
25	8.0	e2.3	e1.7	e3.2	e3.2	129	2.1	2.9	21	0.69	0.43	4.4
26	7.9	e2.4	e1.9	e3.2	e3.1	65	2.2	2.3	13	0.63	0.39	4.1
27	8.0	e2.9	e2.1	e3.2	e2.9	52	1.9	2.3	9.0	0.72	0.45	2.8
28	8.1	e2.9	e2.4	e3.2	e2.8	80	2.4	2.2	6.3	0.72	0.44	2.1
29	7.9	e3.1	e2.8	e3.1	---	69	4.9	2.0	4.6	0.61	0.72	1.8
30	8.1	e3.2	e2.9	e3.3	---	51	14	37	3.1	0.52	0.96	1.6
31	8.2	---	e3.0	e3.6	---	39	---	49	---	0.49	0.93	---
TOTAL	140.98	227.0	76.2	101.1	88.3	1,869.3	179.77	434.8	354.7	130.55	16.45	581.09
MEAN	4.55	7.57	2.46	3.26	3.15	60.3	5.99	14.0	11.8	4.21	0.53	19.4
MAX	8.2	13	3.1	3.9	4.2	400	33	53	45	17	0.96	192
MIN	0.88	2.3	1.6	2.9	2.2	2.0	0.98	2.0	3.0	0.49	0.39	0.54
AC-FT	280	450	151	201	175	3,710	357	862	704	259	33	1,150

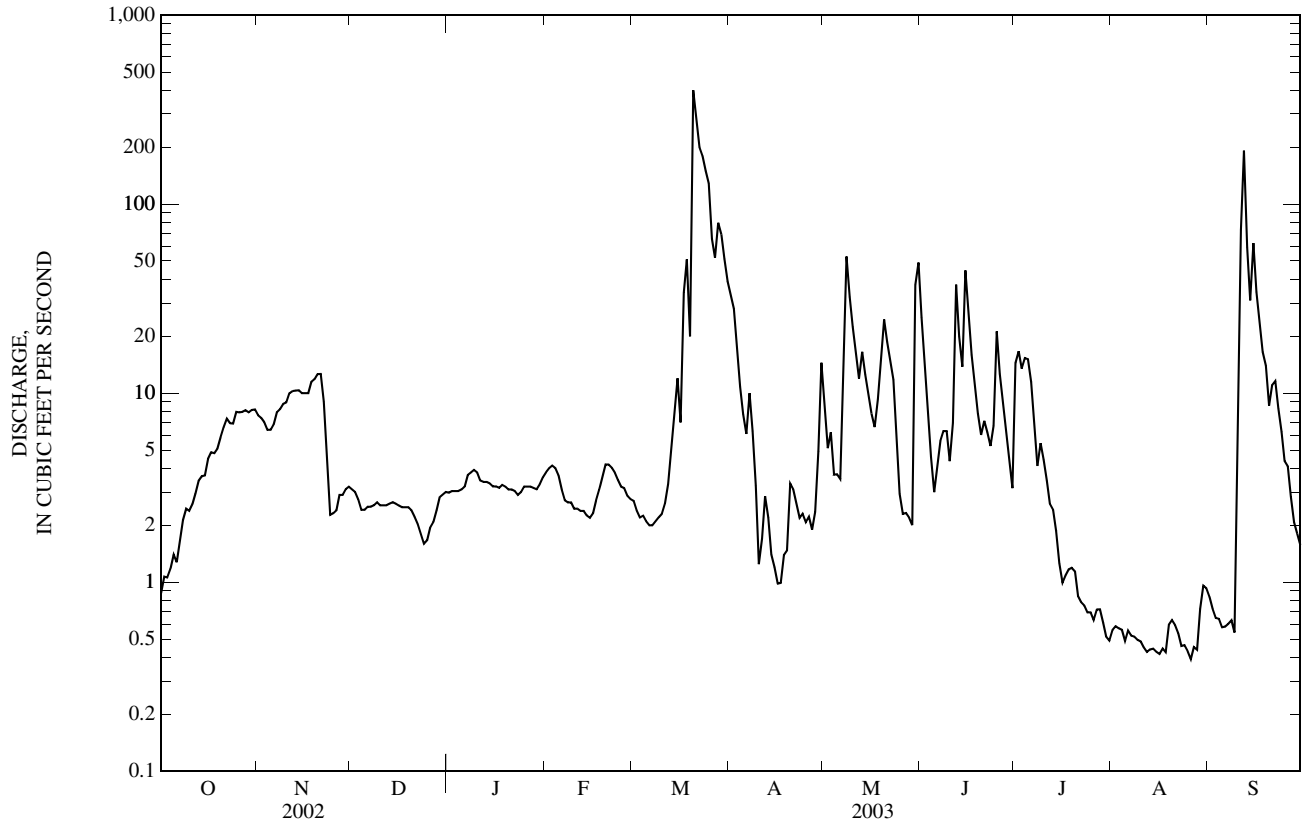
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2003, BY WATER YEAR (WY)

MEAN	56.1	12.7	6.74	7.42	82.4	341	203	331	254	95.0	40.4	30.1
MAX	876	103	34.9	59.7	1,112	2,121	1,198	1,894	1,107	961	537	244
(WY)	(1972)	(1972)	(1972)	(1974)	(1996)	(1978)	(1971)	(1978)	(1967)	(1905)	(1906)	(1905)
MIN	0.29	0.000	0.000	0.000	0.000	1.95	1.97	1.12	0.11	0.000	0.000	0.61
(WY)	(1905)	(1905)	(1905)	(1905)	(1969)	(1992)	(1981)	(1992)	(1961)	(1961)	(1904)	(1958)

06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1904-1905, 1957-2003	
ANNUAL TOTAL	1,723.21		4,200.24			
ANNUAL MEAN	4.72		11.5		[a]122	
HIGHEST ANNUAL MEAN					492	1978
LOWEST ANNUAL MEAN					4.68	1961
HIGHEST DAILY MEAN	26	Apr 4	400	Mar 20	8,560	Mar 24, 1978
LOWEST DAILY MEAN	0.60	Aug 1	0.39	Aug 26	[b]0.00	Jul 31, 1904
ANNUAL SEVEN-DAY MINIMUM	0.68	Jul 29	0.44	Aug 12	0.00	Jul 31, 1904
MAXIMUM PEAK FLOW			750	Mar 20	9,420	Mar 24, 1978
MAXIMUM PEAK STAGE			[c]6.53	Mar 20	16.90	Mar 24, 1978
ANNUAL RUNOFF (AC-FT)	3,420		8,330		88,390	
10 PERCENT EXCEEDS	9.8		19		230	
50 PERCENT EXCEEDS	3.1		3.2		10	
90 PERCENT EXCEEDS	0.86		0.63		1.2	

a Median of annual mean discharges, 100 ft^3/s.
b No flow at times in some years.
c Backwater from ice.
e Estimated.



06342500 MISSOURI RIVER AT BISMARCK, ND

LOCATION.--Lat 46° 48'51", long 100° 49'17", in $SE^1/_4$ $NW^1/_4$ $SE^1/_4$ sec.31, T.139 N., R.80 W., Burleigh County, Hydrologic Unit 10130101, on left bank 40 ft upstream from Bismarck City waterplant, 2,100 ft downstream from Burlington Northern Railway bridge, 1.6 mi northwest of Bismarck Post Office, 3.5 mi upstream from Heart River, and at mile 1,314.5.

DRAINAGE AREA.--186,400 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October to November 1927, April 1928 to current year. See WSP 1729 or 1917 for history of data prior to April 1928.

GAGE.--Water-stage recorder. Datum of gage is 1,618.28 ft above National Geodetic Vertical Datum of 1929 (revised). See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1937.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Lake Sakakawea (station 06338000), 75.4 mi upstream, since November 1953.

EXTREMES PRIOR TO COMPLETION OF GARRISON DAM.--Maximum discharge, 500,000 ft^3/s, Apr. 6, 1952, gage height, 27.90 ft.

EXTREMES SINCE COMPLETION OF GARRISON DAM.--Since completion of Garrison Dam in 1953, maximum discharge, 68,900 ft^3/s, July 13, 1975, gage height, 14.24 ft; maximum gage height, 14.58 ft, Dec. 18, 1979, backwater from ice.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 31.6 ft, Mar. 31, 1881, present site and datum.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14,200	14,500	e21,100	e19,000	e20,600	e24,200	14,900	18,600	22,900	22,500	22,500	22,000
2	14,300	14,500	e21,200	e19,600	e20,700	e24,000	13,900	16,700	22,700	22,900	22,300	21,800
3	13,700	15,400	e21,300	e20,100	e20,900	e23,600	15,100	16,300	22,900	23,000	22,300	21,900
4	14,300	16,200	e21,400	e19,400	e21,500	e23,600	18,100	16,200	23,000	22,800	22,300	20,700
5	14,500	16,900	e21,200	e19,200	e21,800	e23,200	18,600	16,300	22,700	22,400	22,600	19,600
6	14,600	17,900	21,400	e19,000	e22,000	e22,600	18,000	16,900	23,000	22,800	22,100	19,200
7	14,600	18,700	21,100	e18,700	e22,400	e22,600	18,700	16,400	22,600	22,700	22,000	19,300
8	14,500	18,700	21,600	e18,600	e22,800	e22,200	19,400	16,500	22,500	22,500	22,200	19,000
9	14,300	18,600	21,500	e18,400	e23,200	e21,500	18,800	16,800	22,700	22,500	22,200	18,600
10	14,200	18,600	21,500	e18,400	e23,600	e21,200	18,100	16,500	23,000	23,100	22,100	19,600
11	14,000	18,600	21,500	e18,500	e24,000	e20,800	17,700	16,600	23,000	22,600	22,000	20,100
12	14,000	18,600	22,100	e19,300	e24,100	e20,400	17,800	16,400	23,200	22,600	21,500	18,900
13	14,000	18,400	21,700	e19,600	e24,300	e20,500	18,900	16,600	22,800	22,400	21,700	18,800
14	13,700	18,500	21,900	e19,200	e24,400	e20,000	20,100	17,500	22,800	22,400	21,700	18,500
15	14,400	18,400	21,400	e19,000	e24,700	e19,100	19,800	16,600	23,100	22,400	21,800	19,500
16	14,000	18,600	21,400	e18,800	e24,600	e19,000	20,200	17,800	23,100	22,200	22,000	18,300
17	14,200	18,700	21,700	e19,100	e24,300	e18,500	20,800	16,800	23,200	22,600	21,400	15,400
18	14,400	18,600	21,500	e19,100	e24,400	e17,700	20,400	20,700	22,700	23,000	21,500	14,200
19	14,000	18,600	21,300	e19,300	e24,500	e17,100	20,500	23,200	22,900	22,900	22,000	13,700
20	14,100	18,600	21,600	e19,400	e24,500	e16,300	20,600	22,900	22,800	22,800	22,000	13,900
21	14,000	18,800	21,500	e19,600	e24,400	e15,800	20,700	22,700	23,000	22,800	21,800	14,500
22	14,400	18,600	e21,000	e19,800	e24,500	e15,400	20,500	23,100	23,100	22,800	21,400	14,800
23	13,900	18,800	e20,900	e19,500	e24,700	e15,200	21,000	22,400	22,500	22,700	21,700	14,200
24	14,200	18,700	e21,100	e19,000	e24,500	e14,600	21,100	23,200	22,500	22,900	21,700	14,200
25	14,500	18,800	e21,300	e19,200	e24,800	e14,300	20,600	23,000	22,900	22,400	22,000	14,100
26	14,300	19,100	e20,700	e19,800	e24,800	e14,300	21,100	22,800	22,700	22,400	21,900	14,100
27	14,300	e19,600	e19,700	e19,800	e24,400	e14,300	20,500	23,100	22,400	22,800	21,400	14,000
28	14,200	e20,800	e19,100	e19,200	e24,400	e14,400	20,400	23,200	22,300	22,600	20,800	13,700
29	14,200	e21,100	e18,800	e19,200	---	e14,600	19,900	22,800	22,500	22,900	21,700	13,800
30	14,700	e21,100	e18,900	e20,200	---	e14,500	20,000	22,900	22,700	22,600	21,900	14,400
31	14,800	---	19,100	e20,700	---	e14,400	---	22,800	---	22,400	20,900	---
TOTAL	441,500	551,000	651,500	597,700	659,800	579,900	576,200	604,300	684,200	702,400	677,400	514,800
MEAN	14,240	18,370	21,020	19,280	23,560	18,710	19,210	19,490	22,810	22,660	21,850	17,160
MAX	14,800	21,100	22,100	20,700	24,800	24,200	21,100	23,200	23,200	23,100	22,600	22,000
MIN	13,700	14,500	18,800	18,400	20,600	14,300	13,900	16,200	22,300	22,200	20,800	13,700
AC-FT	875,700	1,093,000	1,292,000	1,186,000	1,309,000	1,150,000	1,143,000	1,199,000	1,357,000	1,393,000	1,344,000	1,021,000

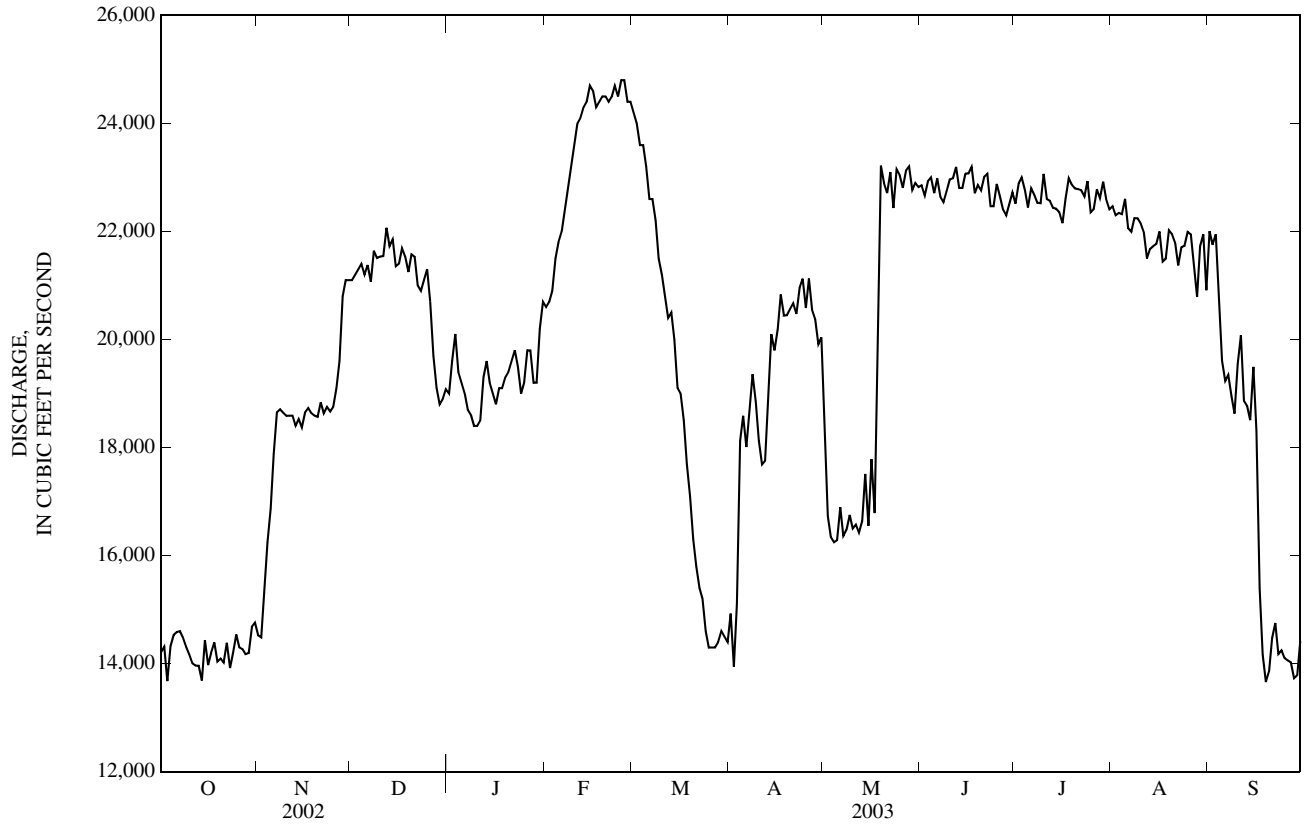
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)

MEAN	21,140	21,230	20,700	22,700	24,820	22,420	21,240	22,700	24,320	25,260	25,050	22,110
MAX	48,180	43,240	31,690	32,350	34,840	34,370	40,370	42,030	43,540	64,610	57,010	45,060
(WY)	(1998)	(1998)	(1970)	(1969)	(1969)	(1972)	(1972)	(1972)	(1975)	(1975)	(1975)	(1997)
MIN	8,399	8,155	7,890	6,519	5,883	6,317	10,420	9,234	8,445	10,840	9,271	8,121
(WY)	(1963)	(1963)	(1955)	(1955)	(1956)	(1955)	(1993)	(1963)	(1960)	(1960)	(1962)	(1962)

06342500 MISSOURI RIVER AT BISMARCK, ND—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003[c]	
ANNUAL TOTAL	6,177,400		7,240,700			
ANNUAL MEAN	16,920		19,840		22,800	
HIGHEST ANNUAL MEAN					35,630	1975
LOWEST ANNUAL MEAN					14,320	1960
HIGHEST DAILY MEAN	23,300	Aug 31	24,800	Feb 25	68,800	Jul 13, 1975
LOWEST DAILY MEAN	10,200	May 25	13,700	Oct 3	4,000	Mar 25, 1955
ANNUAL SEVEN-DAY MINIMUM	10,400	May 19	14,000	Sep 23	4,860	Mar 21, 1955
MAXIMUM PEAK FLOW			[a]25,000	Feb 25	68,900	Jul 13, 1975
MAXIMUM PEAK STAGE			[b]10.91	Feb 14	[b]14.80	Jan 13, 1983
INSTANTANEOUS LOW FLOW			13,700	Oct 3		
ANNUAL RUNOFF (AC-FT)	12,250,000		14,360,000		16,520,000	
10 PERCENT EXCEEDS	22,200		23,000		34,000	
50 PERCENT EXCEEDS	14,600		20,700		21,900	
90 PERCENT EXCEEDS	11,900		14,400		12,000	

a About.
b Backwater from ice.
c Since completion of Garrison Dam.
e Estimated



06354882 OAK CREEK NEAR WAKPALA, SD

LOCATION.--Lat 45° 42'43", long 100° 33'32", in $SW^1/_4$ $SE^1/_4$ $NW^1/_4$ sec.9, T.20 N., R.29 E., Corson County, Hydrologic Unit 10130102, on right bank at upstream side of bridge on farm access road, 1.6 mi east of Rattlesnake Butte, and 4.0 mi northwest of Wakpala.

DRAINAGE AREA.--356 mi^2, approximately.

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,690 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.45	e0.00	e0.00	0.03	2.3	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.59	e0.00	e0.00	0.05	2.3	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.62	e0.00	e0.00	0.19	2.4	4.4	0.00	0.00	0.00
4	0.00	0.00	0.00	0.78	e0.00	e0.00	0.30	2.2	3.5	0.00	0.00	0.00
5	0.00	0.00	0.00	1.7	e0.00	e0.00	0.24	2.3	1.5	0.00	0.00	0.00
6	0.00	0.00	0.00	1.4	e0.00	e0.00	0.17	2.7	0.94	0.00	0.00	0.00
7	0.00	0.00	0.00	1.5	e0.00	e0.00	0.10	4.3	1.2	0.00	0.00	0.00
8	0.00	0.00	0.00	2.3	e0.00	e0.00	0.24	4.2	0.34	0.00	0.00	0.00
9	0.00	0.00	0.00	2.4	e0.00	e0.00	0.31	e18	0.04	0.00	0.00	0.00
10	0.00	0.00	0.00	1.8	e0.00	e0.00	0.76	10	0.05	0.00	0.00	0.00
11	0.00	0.00	0.00	0.89	e0.00	e0.00	1.1	9.3	0.01	0.00	0.00	0.00
12	0.00	0.00	0.00	0.30	e0.00	e0.00	0.83	7.3	0.01	0.00	0.00	0.00
13	0.00	0.00	0.00	0.27	e0.00	e0.05	0.97	5.6	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.41	e0.00	e0.30	0.94	5.0	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.08	e0.00	e1.0	1.3	4.1	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.10	e0.00	e10	1.7	2.8	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.06	e0.00	e30	2.5	3.0	0.00	0.00	0.00	0.00
18	0.00	0.00	0.07	0.03	e0.00	e20	2.6	4.9	0.00	0.00	0.00	0.00
19	0.00	0.00	0.18	0.00	e0.00	e15	2.8	3.1	0.00	0.00	0.00	0.00
20	0.00	0.00	0.33	0.00	e0.00	e10	3.2	2.3	0.00	0.00	0.00	0.00
21	0.00	0.00	0.30	e0.00	e0.00	e8.0	3.2	1.7	0.00	0.00	0.00	0.00
22	0.00	0.00	0.33	e0.00	e0.00	e7.0	3.5	1.1	0.00	0.00	0.00	0.00
23	0.00	0.00	0.21	e0.00	e0.00	e6.0	3.0	0.86	0.00	0.00	0.00	0.00
24	0.00	0.00	0.17	e0.00	e0.00	e5.0	3.1	0.69	0.00	0.00	0.00	0.00
25	0.00	0.00	0.10	e0.00	e0.00	e4.0	2.7	0.65	0.00	0.00	0.00	0.00
26	0.00	0.00	0.01	e0.00	e0.00	3.6	2.6	0.47	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	e0.00	e0.00	e2.0	2.1	0.19	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	e0.00	e0.00	1.1	2.1	0.09	0.00	0.00	0.00	0.00
29	0.00	0.00	0.23	e0.00	---	0.87	2.4	0.01	0.00	0.00	0.00	0.00
30	0.00	0.00	0.50	e0.00	---	0.33	2.4	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.63	e0.00	---	0.51	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	3.06	15.68	0.00	124.76	47.43	103.86	11.99	0.00	0.00	0.00
MEAN	0.000	0.000	0.099	0.51	0.000	4.02	1.58	3.35	0.40	0.000	0.000	0.000
MAX	0.00	0.00	0.63	2.4	0.00	30	3.5	18	4.4	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	6.1	31	0.00	247	94	206	24	0.00	0.00	0.00

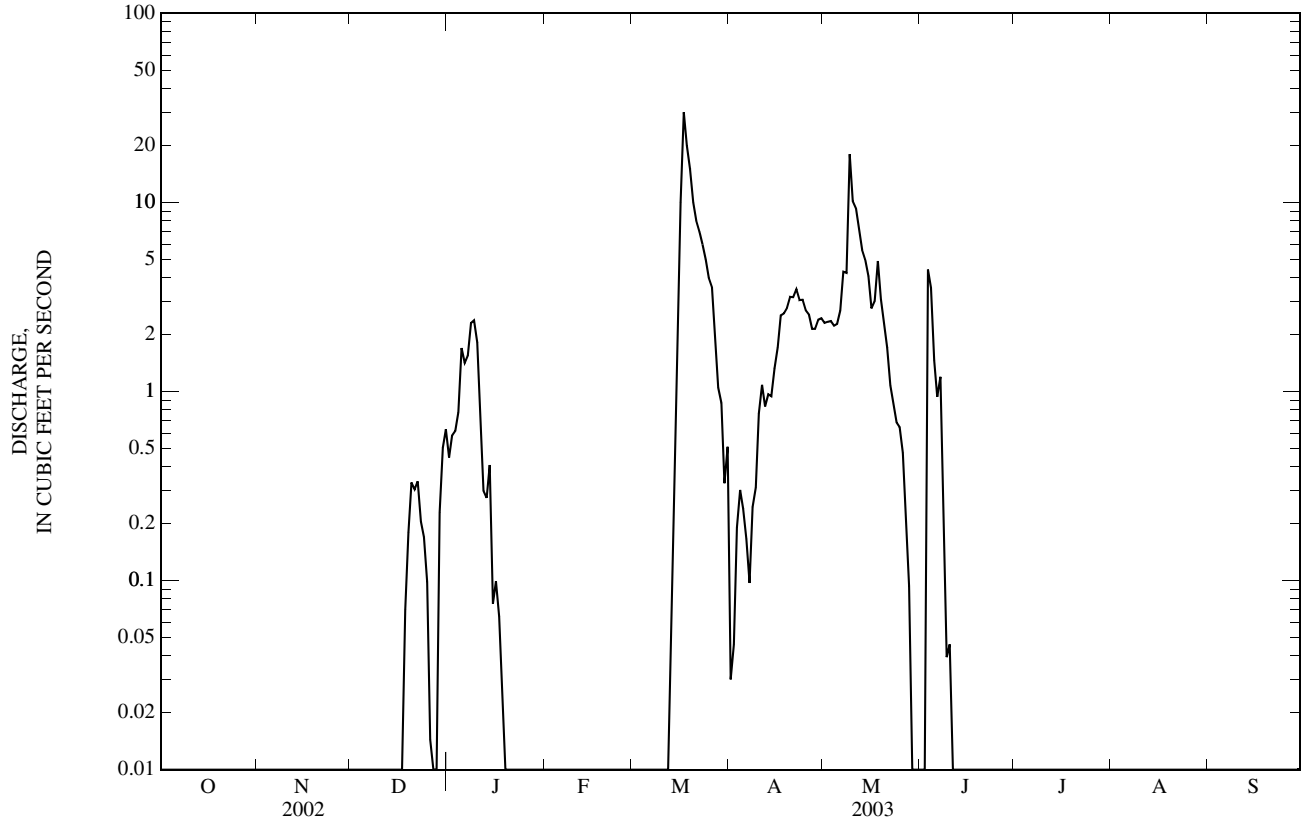
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2003, BY WATER YEAR (WY)

MEAN	4.64	2.61	1.66	1.41	19.9	162	66.0	43.0	11.0	17.2	3.18	1.26
MAX	33.5	17.7	6.80	5.53	149	820	511	240	49.0	134	20.3	13.3
(WY)	(1997)	(1999)	(1999)	(1996)	(1995)	(1997)	(1997)	(1999)	(1995)	(2001)	(1998)	(1999)
MIN	0.000	0.000	0.000	0.000	0.000	1.81	0.79	0.096	0.000	0.000	0.000	0.000
(WY)	(1985)	(1989)	(1989)	(1989)	(1985)	(1992)	(1992)	(1992)	(1992)	(1985)	(1987)	(1987)

06354882 OAK CREEK NEAR WAKPALA, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1985 - 2003	
ANNUAL TOTAL	732.66		306.78			
ANNUAL MEAN	2.01		0.84		[a]28.0	
HIGHEST ANNUAL MEAN					126	1997
LOWEST ANNUAL MEAN					0.65	1992
HIGHEST DAILY MEAN	31	Apr 1	30	Mar 17	6,800	Mar 28, 1997
LOWEST DAILY MEAN	0.00	May 19	0.00	Oct 1	[b]0.00	Oct 1, 1984
ANNUAL SEVEN-DAY MINIMUM	0.00	May 19	0.00	Oct 1	0.00	Oct 1, 1984
MAXIMUM PEAK FLOW			35	Mar 17	7,500	Mar 27, 1997
MAXIMUM PEAK STAGE			[c]4.58	Mar 17	[d]19.83	Mar 27, 1997
ANNUAL RUNOFF (AC-FT)	1,450		608		20,290	
10 PERCENT EXCEEDS	7.4		2.5		27	
50 PERCENT EXCEEDS	0.00		0.00		1.3	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Median of annual mean discharges, 18 ft^3/s.
b No flow for many days in most years.
c From floodmark, backwater from ice.
d Backwater from ice.
e Estimated.



06355500 NORTH FORK GRAND RIVER NEAR WHITE BUTTE, SD

LOCATION.--Lat 45° 48'08", long 102° 21'43", in $SW^1/_4$ $NW^1/_4$ $NW^1/_4$ sec.11, T.21 N., R.14 E., Perkins County, Hydrologic Unit 10130301, on left bank on upstream side of highway bridge and 9.8 mi south of White Butte.

DRAINAGE AREA.--1,190 mi^2, approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1947, 1950.

GAGE.--Water-stage recorder. Elevation of gage is 2,296 ft above NGVD of 1929, from topographic map. See WSP 1917 for history of changes prior to June 12, 1951. June 12, 1951, to Aug. 20, 1975, water-stage recorder, and Aug. 21 to Sept. 10, 1975, nonrecording gage at site 100 ft upstream; Sept. 11, 1975, to Mar. 22, 1976, nonrecording gage, and July 29, 1976, to Sept. 30, 1989, water-stage recorder at site 1,400 ft upstream, and Mar. 23 to July 28, 1976, nonrecording gage at present site, all at present datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated by Bowman-Haley Dam, capacity, 93,000 acre-ft, 71 mi upstream, beginning August 1966. Maximum discharge prior to October 1966, 30,900 ft^3/s, Apr. 16, 1950, gage height, 20.0 ft, from floodmarks, from rating curve extended above 19,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times most years. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	e2.6	e2.2	e2.2	e1.2	16	5.7	4.1	0.35	0.00	0.00
2	0.00	0.00	e2.4	e2.2	e2.3	e1.0	14	5.6	3.9	0.12	0.00	0.00
3	0.00	0.00	e2.3	e2.2	e2.3	e1.0	13	5.7	4.7	0.10	0.00	0.00
4	0.00	0.00	e2.4	e2.2	e2.3	e1.0	13	6.1	5.7	0.15	0.00	0.00
5	0.00	0.00	e2.5	e2.2	e2.3	e1.0	12	6.4	6.9	0.26	0.00	0.00
6	0.00	0.00	e2.7	e2.2	e2.2	e0.90	11	8.4	7.3	0.39	0.00	0.00
7	0.00	0.00	e2.8	e2.1	e2.2	e0.90	10	8.3	5.5	0.92	0.00	0.00
8	0.00	0.00	e2.8	e2.1	e2.3	e0.80	9.6	9.7	4.7	0.82	0.00	0.00
9	0.00	0.00	e2.9	e1.7	e2.3	e1.0	9.1	14	4.2	0.82	0.00	0.00
10	0.00	0.00	e3.0	e1.5	e2.4	e1.4	8.6	15	3.8	0.63	0.00	0.00
11	0.00	0.00	e3.4	e1.4	e2.4	e1.8	8.1	14	3.1	0.54	0.00	0.00
12	0.00	0.00	e3.6	e1.3	e2.3	e2.4	7.4	15	2.9	0.31	0.00	39
13	0.00	0.00	e3.7	e1.2	e2.3	e3.6	6.8	14	3.1	0.18	0.00	32
14	0.00	0.00	e3.5	e1.2	e2.3	e12	6.3	14	2.7	0.01	0.00	15
15	0.00	0.00	e3.5	e1.1	e2.4	53	5.9	13	2.4	0.00	0.00	11
16	0.00	0.00	e3.5	e1.1	e2.4	108	7.4	15	2.7	0.00	0.00	14
17	0.00	0.00	e3.5	e1.1	e2.5	133	7.6	15	3.1	0.00	0.00	12
18	0.00	0.00	e3.4	e1.1	e2.7	248	6.9	14	2.5	0.00	0.00	9.8
19	0.00	0.00	e3.2	e1.1	e2.8	223	7.6	12	1.2	0.00	0.00	7.8
20	0.00	0.00	e3.0	e1.1	e3.1	149	6.6	11	0.74	0.00	0.00	6.8
21	0.00	0.00	e2.8	e1.0	e2.8	116	6.5	9.9	0.34	0.00	0.00	5.7
22	0.00	e0.10	e2.4	e0.90	e2.5	113	6.8	9.2	0.06	0.00	0.00	4.5
23	0.00	e1.0	e2.2	e0.90	e2.0	97	6.2	8.5	0.11	0.00	0.00	3.5
24	0.00	e1.0	e2.0	e0.90	e1.8	87	5.9	8.1	0.99	0.00	0.00	2.7
25	0.00	e1.2	e1.8	e0.90	e1.5	48	5.6	7.3	2.5	0.00	0.00	2.0
26	0.00	e1.4	e1.6	e1.0	e1.4	39	5.2	6.8	2.6	0.00	0.00	2.1
27	0.00	e1.8	e1.5	e1.0	e1.3	33	5.1	7.0	2.5	0.00	0.00	1.7
28	0.00	e2.1	e1.6	e1.3	e1.3	29	4.4	6.2	1.8	0.00	0.00	1.3
29	0.00	e2.7	e1.9	e1.6	---	24	5.5	5.3	0.87	0.00	0.00	0.94
30	0.00	e2.8	e2.1	e1.7	---	20	5.6	4.6	0.60	0.00	0.00	0.73
31	0.00	---	e2.1	e1.9	---	19	---	4.0	---	0.00	0.00	---
TOTAL	0.00	14.10	82.7	45.40	62.6	1,569.00	243.7	298.8	87.61	5.60	0.00	172.57
MEAN	0.000	0.47	2.67	1.46	2.24	50.6	8.12	9.64	2.92	0.18	0.000	5.75
MAX	0.00	2.8	3.7	2.2	3.1	248	16	15	7.3	0.92	0.00	39
MIN	0.00	0.00	1.5	0.90	1.3	0.80	4.4	4.0	0.06	0.00	0.00	0.00
AC-FT	0.00	28	164	90	124	3,110	483	593	174	11	0.00	342

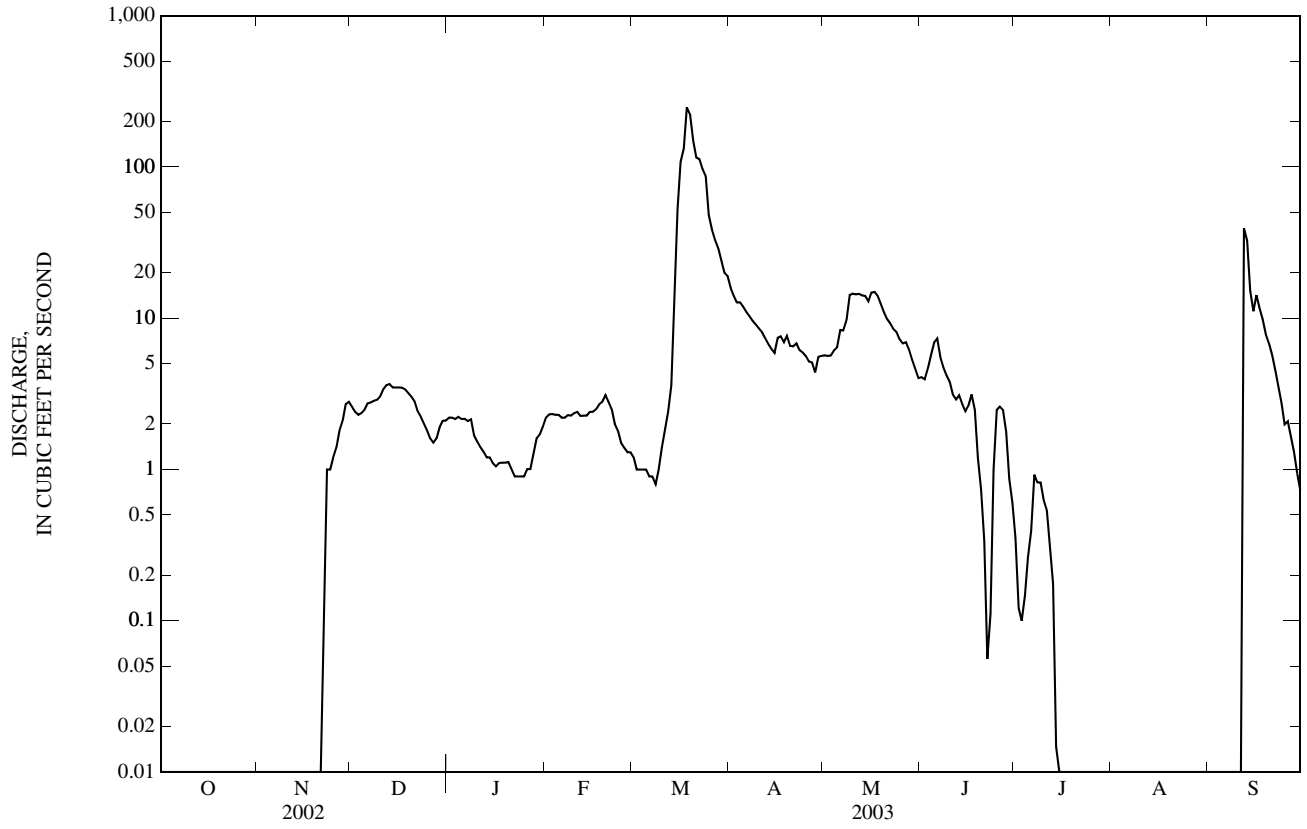
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2003, BY WATER YEAR (WY)*

MEAN	7.52	7.48	4.76	6.46	16.5	171	124	87.8	54.2	25.3	10.6	4.19
MAX	72.1	56.9	21.2	61.1	169	964	895	414	230	154	79.7	27.1
(WY)	(1983)	(1983)	(1983)	(1973)	(1999)	(1978)	(1997)	(1982)	(1982)	(1993)	(2001)	(1979)
MIN	0.000	0.000	0.000	0.000	0.000	2.22	0.007	0.071	0.032	0.000	0.000	0.000
(WY)	(1969)	(1989)	(1989)	(1991)	(1969)	(1975)	(1981)	(1981)	(1981)	(1980)	(1968)	(1968)

06355500 NORTH FORK GRAND RIVER NEAR WHITE BUTTE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1967 - 2003*	
ANNUAL TOTAL	1,059.35		2,582.08			
ANNUAL MEAN	2.90		7.07		[a]43.5	
HIGHEST ANNUAL MEAN					160	1978
LOWEST ANNUAL MEAN					2.72	1981
HIGHEST DAILY MEAN	25	Mar 17	248	Mar 18	6,030	Mar 28, 1978
LOWEST DAILY MEAN	0.00	May 31	[b]0.00	Oct 1	[b]0.00	Aug 3, 1967
ANNUAL SEVEN-DAY MINIMUM	0.00	May 31	0.00	Oct 1	0.00	Aug 3, 1967
MAXIMUM PEAK FLOW			287	Mar 18	[c]6,710	Mar 28, 1978
MAXIMUM PEAK STAGE			3.26	Mar 18	[d]12.08	Mar 23, 1978
ANNUAL RUNOFF (AC-FT)	2,100		5,120		31,530	
10 PERCENT EXCEEDS	9.1		12		89	
50 PERCENT EXCEEDS	1.7		1.8		5.6	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

* Regulated period only (1967-2003). See REMARKS.
a Median of annual mean discharges, 35 ft^3/s.
b No flow at times in most years.
c Gage height, 11.63 ft.
d Backwater from ice.
e Estimated.



06356500 SOUTH FORK GRAND RIVER NEAR CASH, SD

LOCATION.--Lat 45° 38'56", long 102° 38'27", in $SE^1/_4$ $NE^1/_4$ $SE^1/_4$ $SE^1/_4$ sec.33, T.20 N., R.12 E., Perkins County, Hydrologic Unit 10130302, on left bank at downstream side of highway bridge, 1.0 mi upstream from Little Nasty Creek, 4.0 mi north of Cash, 10 mi south of Lodgepole, 12 mi northwest of Bison, and 16 mi downstream from Big Nasty Creek.

DRAINAGE AREA.--1,350 mi^2, approximately.

PERIOD OF RECORD.--October 1945 to August 2001 (October 1995 to August 2001 seasonal records only), April to September 2003. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,422.75 ft above NGVD of 1929. Prior to Oct. 25, 1946, nonrecording gage, and Oct. 25, 1946, to May 16, 1966, water-stage recorder, at site 500 ft upstream. May 17, 1966, to May 2, 1968, nonrecording gage, at present site, all at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft^3/s, Apr. 15, 1950, gage height, 15.40 ft, from rating curve extended above 14,000 ft^3/s, on basis of slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period Mar. 31 through Sept. 30, 1,040 ft^3/s, Sept. 11, gage height, 4.74 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	e23	23	12	20	4.5	4.4
2	---	---	---	---	---	---	e22	42	13	17	4.4	4.5
3	---	---	---	---	---	---	e21	31	16	16	4.3	4.0
4	---	---	---	---	---	---	20	26	16	e16	4.3	4.6
5	---	---	---	---	---	---	19	26	17	e16	4.5	5.1
6	---	---	---	---	---	---	18	39	17	16	4.4	5.6
7	---	---	---	---	---	---	19	25	15	9.9	4.3	5.5
8	---	---	---	---	---	---	18	24	16	10	4.1	3.6
9	---	---	---	---	---	---	18	29	16	12	3.9	4.1
10	---	---	---	---	---	---	18	45	17	11	3.7	102
11	---	---	---	---	---	---	17	48	27	10	3.6	174
12	---	---	---	---	---	---	16	44	20	9.8	3.3	680
13	---	---	---	---	---	---	16	31	17	9.2	2.9	244
14	---	---	---	---	---	---	16	28	14	8.8	2.8	84
15	---	---	---	---	---	---	16	23	13	9.9	2.8	39
16	---	---	---	---	---	---	17	21	13	9.2	2.7	24
17	---	---	---	---	---	---	18	19	12	8.2	3.1	19
18	---	---	---	---	---	---	17	18	25	6.5	3.4	18
19	---	---	---	---	---	---	18	17	17	6.4	3.4	24
20	---	---	---	---	---	---	18	16	12	6.4	4.3	28
21	---	---	---	---	---	---	18	16	11	6.4	3.6	32
22	---	---	---	---	---	---	17	18	9.7	6.4	3.6	20
23	---	---	---	---	---	---	16	17	9.6	5.5	2.9	16
24	---	---	---	---	---	---	16	16	12	5.7	2.7	13
25	---	---	---	---	---	---	16	15	13	5.4	3.3	12
26	---	---	---	---	---	---	16	14	24	5.0	3.0	11
27	---	---	---	---	---	---	16	14	29	4.9	3.0	10
28	---	---	---	---	---	---	15	13	20	5.0	4.0	10
29	---	---	---	---	---	---	17	13	28	4.9	3.5	9.7
30	---	---	---	---	---	---	18	12	27	4.7	3.5	9.3
31	---	---	---	---	---	e24	---	12	---	4.5	3.8	---
TOTAL	---	---	---	---	---	---	530	735	508.3	286.7	111.6	1,620.4
MEAN	---	---	---	---	---	---	17.7	23.7	16.9	9.25	3.60	54.0
MAX	---	---	---	---	---	---	23	48	29	20	4.5	680
MIN	---	---	---	---	---	---	15	12	9.6	4.5	2.7	3.6
AC-FT	---	---	---	---	---	---	1,050	1,460	1,010	569	221	3,210

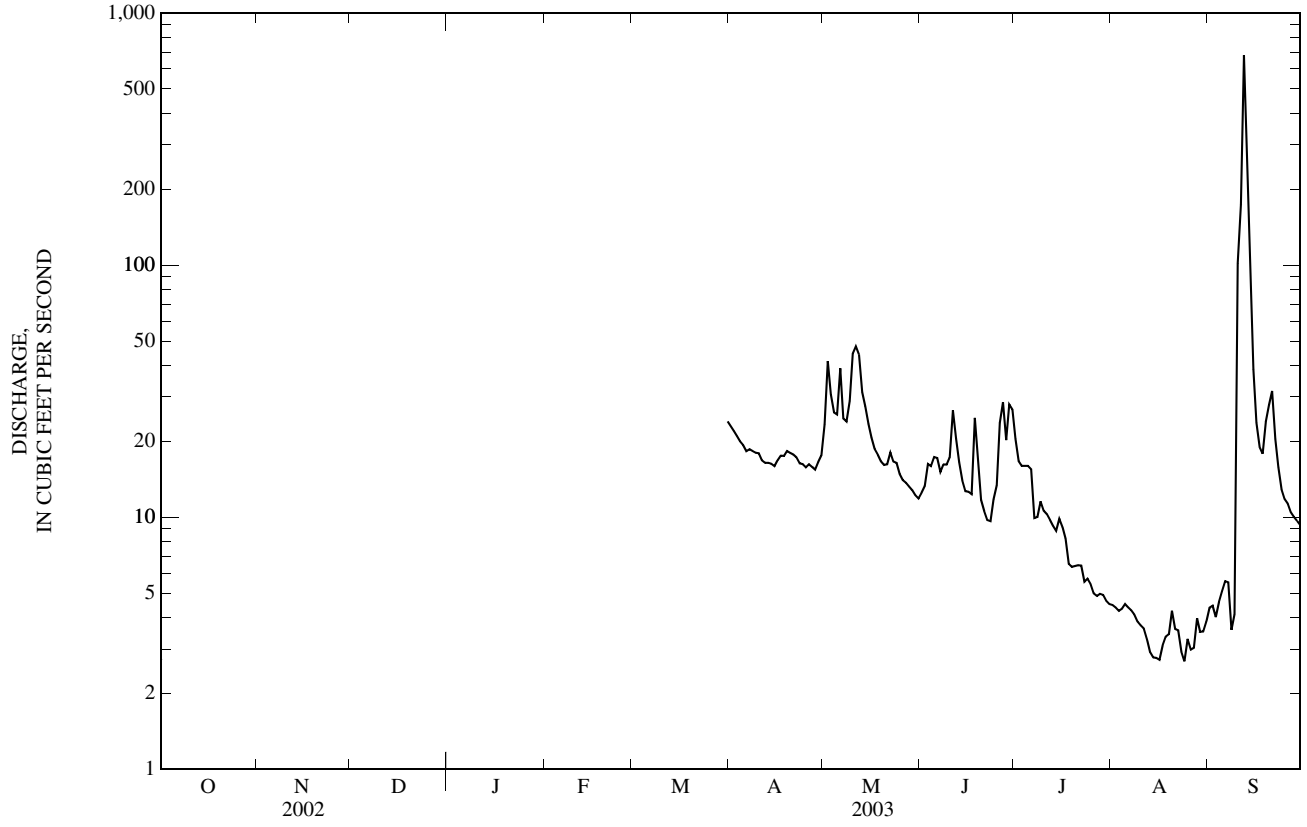
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1995, BY WATER YEAR (WY)*

MEAN	22.1	11.6	6.75	6.42	21.9	149	166	83.2	74.5	46.8	20.4	14.5
MAX	135	26.6	20.5	64.1	267	807	2,446	523	336	590	85.6	62.8
(WY)	(1983)	(1973)	(1973)	(1973)	(1972)	(1972)	(1952)	(1995)	(1967)	(1993)	(1981)	(1986)
MIN	6.32	3.57	0.000	0.000	0.000	5.58	10.7	9.39	5.37	2.84	1.16	4.40
(WY)	(1959)	(1956)	(1956)	(1949)	(1949)	(1975)	(1981)	(1992)	(1961)	(1961)	(1959)	(1981)

06356500 SOUTH FORK GRAND RIVER NEAR CASH, SD—Continued

SUMMARY STATISTICS	WATER YEARS 1947 - 1995*	
ANNUAL MEAN	52.0	
HIGHEST ANNUAL MEAN	221	1950
LOWEST ANNUAL MEAN	10.1	1961
HIGHEST DAILY MEAN	15,600	Apr 16, 1950
LOWEST DAILY MEAN	0.00	Feb 6, 1948
ANNUAL SEVEN-DAY MINIMUM	0.00	Feb 6, 1948
MAXIMUM PEAK FLOW	27,000	Apr 15, 1950
MAXIMUM PEAK STAGE	15.40	Apr 15, 1950
ANNUAL RUNOFF (AC-FT)	37,660	
10 PERCENT EXCEEDS	73	
50 PERCENT EXCEEDS	12	
90 PERCENT EXCEEDS	2.0	

* Period reflects only complete water years.
e Estimated.



06357000 SHADEHILL RESERVOIR AT SHADEHILL, SD

LOCATION.--Lat 45°45'12", long 102°12'12", in E$^1/_2$ sec.25, T.21 N., R.15 E., Perkins County, Hydrologic Unit 10130302, at dam on Grand River, 1.3 mi southwest of Shadehill.

DRAINAGE AREA.--3,120 mi^2, approximately.

PERIOD OF RECORD.--June 1950 to current year (monthend contents only).

GAGE.--Water-stage recorder. Elevations listed to NGVD of 1929. Prior to Apr. 3, 1952, occasional elevations obtained by level circuits and Apr. 3, 1952, to Apr. 28, 1970, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by earthfill dam. Storage began July 1, 1950; dam completed August 1951. Conservation storage, 81,400 acre-ft between elevations 2,250.8 ft (invert of canal and river outlet) and elevation 2,272.0 ft (crest of morning-glory spillway). Dead storage, 58,231 acre-ft below elevation 2,250.8 ft. Flood control, 217,708 acre-ft between elevations 2,272.0 ft and 2,302.0 ft (crest of emergency spillway). Surcharge, 111,203 acre-ft at elevation 2,312.0 ft (maximum pool elevation). Total reservoir capacity is 468,585 acre-ft at elevation 2,312.0 ft. The reservoir provides flood control and water for irrigation purposes. Figures given herein represent usable contents above elevation 2,250.8 ft. Prior to Oct. 1, 1968, reservoir contents published as total contents and included dead storage.

COOPERATION.--Records of elevation and contents provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum usable contents observed, 259,900 acre-ft, Apr. 10, 1952, elevation, 2,297.86 ft; minimum usable observed since first filling to spillway level, 24,941 acre-ft, Nov. 17, 1981, elevation, 2,258.62 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 26,900 acre-ft, May 18, elevation, 2,264.21 ft; minimum, 15,800 acre-ft, Mar. 14, elevation, 2,261.22 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,263.19	23,000	--
Oct. 31	2,262.69	21,100	-1,900
Nov. 30	2,262.35	19,800	-1,300
Dec. 31	2,261.68	17,400	-2,400
CAL YR 2002	--	--	-21,100
Jan. 31	2,261.41	16,500	-900
Feb. 28	2,261.29	16,100	-400
Mar. 31	2,263.83	25,400	+9,300
Apr. 30	2,263.86	25,600	+200
May 31	2,264.09	26,500	+900
June 30	2,263.88	25,600	-900
July 31	2,263.10	22,600	-3,000
Aug. 31	2,262.07	18,800	-3,800
Sept. 30	2,262.31	19,700	+900
WTR YR 2003	--	--	-3,300

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06357800 GRAND RIVER AT LITTLE EAGLE, SD

LOCATION.--Lat 45° 39'28", long 100° 49'04", in NE$^1/_4$ NE$^1/_4$ sec.32, T.20 N., R.27 E., Corson County, Hydrologic Unit 10130303, on left bank at downstream side of bridge on State Highway 63, 1.3 mi southwest of Little Eagle, and 4.7 mi downstream from Little Oak Creek.

DRAINAGE AREA.--5,370 mi^2, approximately.

PERIOD OF RECORD.--July 1958 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,624.63 ft above NGVD of 1929. Prior to May 12, 1959, nonrecording gage, and May 12, 1959, to Aug. 11, 1970, water-stage recorder at site 0.6 mi downstream at datum 2.00 ft higher. From Aug. 12, 1970, to Sept. 30, 1997, at present site at datum 4.00 ft higher than original datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers satellite data-collection platform at station. Flow regulated by Shadehill Dam 144 mi upstream since July 1, 1950. (See station 06357000.) Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	e18	e29	e9.0	e4.0	e1.6	104	35	32	48	12	9.6
2	20	e24	e27	e9.0	e4.0	e1.6	95	35	33	53	12	9.2
3	20	e27	e25	e9.5	e3.5	e1.5	80	35	36	44	12	9.6
4	20	e24	e23	e10	e3.0	e1.5	70	39	38	40	22	10
5	21	e29	e22	e10	e2.5	e1.5	64	55	46	31	24	10
6	22	e35	e21	e10	e2.0	e1.5	60	67	99	26	34	11
7	22	40	e20	e11	e1.5	e1.4	56	91	122	25	47	9.7
8	23	35	e19	e12	e1.5	e1.4	55	188	85	27	29	8.7
9	23	39	e19	e15	e1.0	e1.3	51	178	76	53	32	7.9
10	23	41	e20	e14	e1.0	e1.3	48	154	74	46	21	9.7
11	23	e35	e21	e13	e1.0	e1.3	46	211	64	40	16	12
12	21	e31	e22	e12	e1.0	e1.3	43	233	52	82	13	13
13	21	29	e23	e11	e1.0	e1.3	39	186	44	96	11	18
14	21	28	e24	e10	e1.0	e1.5	37	142	37	65	10	32
15	21	28	e25	e9.0	e1.0	e2.0	36	103	33	44	9.4	41
16	22	e29	e25	e8.5	e1.1	e100	38	80	32	34	9.2	28
17	23	e28	e24	e8.0	e2.5	e400	41	66	36	27	8.5	21
18	22	28	e23	e7.5	e2.4	e1,300	44	63	32	23	8.0	20
19	23	e28	e22	e7.0	e2.2	e1,000	62	58	41	20	8.2	19
20	23	e29	e21	e6.5	e2.0	e800	88	56	35	18	8.3	17
21	23	28	e20	e6.0	e1.8	e1,000	79	55	32	17	8.6	20
22	e25	27	e18	e5.5	e1.7	965	73	52	41	17	9.0	25
23	25	27	e16	e5.0	e1.6	556	69	48	27	16	8.3	23
24	26	e18	e14	e4.5	e1.5	364	61	48	28	15	7.4	19
25	24	e18	e13	e4.0	e1.5	260	50	46	41	15	6.8	17
26	26	e22	e12	e3.5	e1.6	208	43	40	45	13	6.7	16
27	26	e23	e11	e3.0	e1.6	178	38	37	130	14	6.4	16
28	30	e24	e10	e3.0	e1.6	143	36	37	173	14	6.2	16
29	29	e26	e10	e3.0	---	119	37	35	108	13	7.0	16
30	e22	e20	e9.0	e3.5	---	98	36	33	69	13	8.1	13
31	e15	---	e9.0	e4.0	---	104	---	33	---	13	8.9	---
TOTAL	705	838	597.0	247.0	52.1	7,617.0	1,679	2,539	1,741	1,002	430.0	497.4
MEAN	22.7	27.9	19.3	7.97	1.86	246	56.0	81.9	58.0	32.3	13.9	16.6
MAX	30	41	29	15	4.0	1,300	104	233	173	96	47	41
MIN	15	18	9.0	3.0	1.0	1.3	36	33	27	13	6.2	7.9
AC-FT	1,400	1,660	1,180	490	103	15,110	3,330	5,040	3,450	1,990	853	987

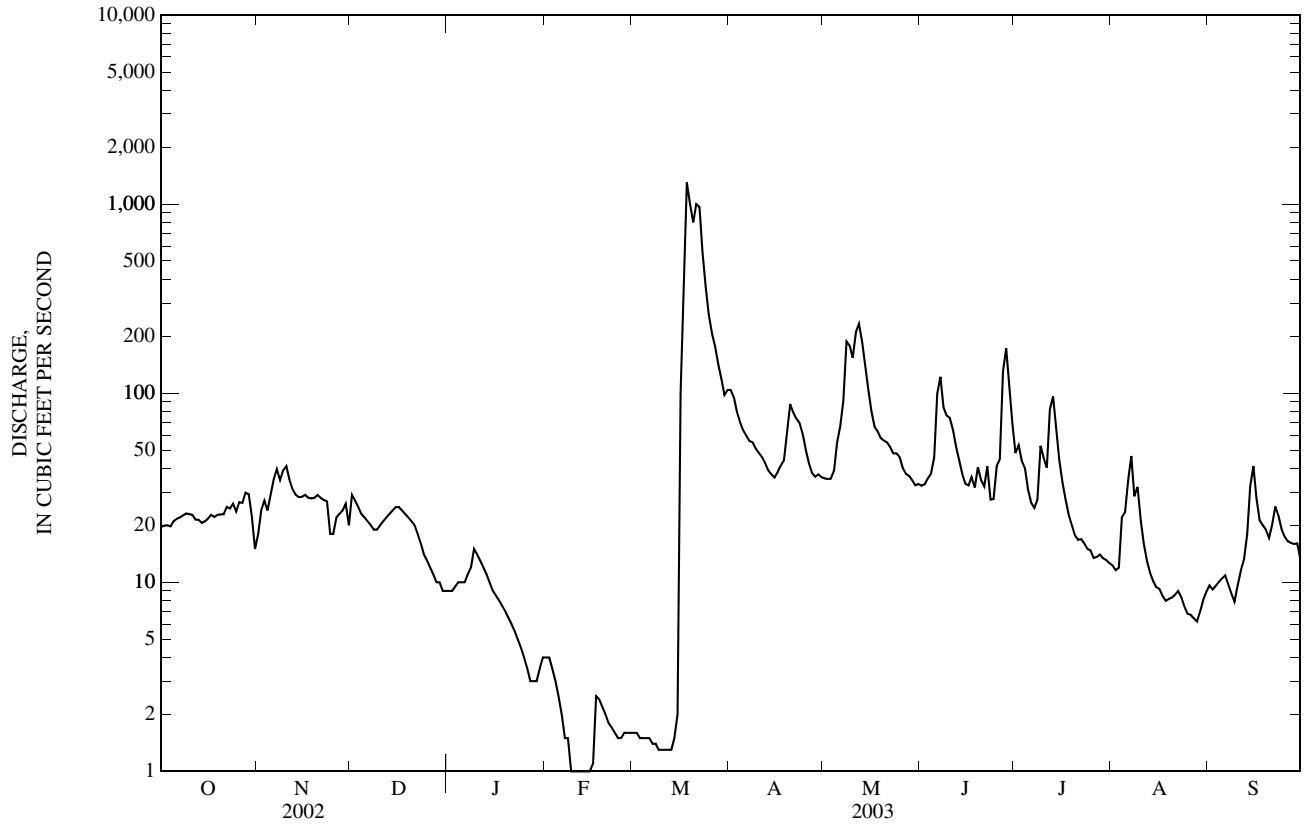
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2003, BY WATER YEAR (WY)

MEAN	91.9	58.8	36.1	46.7	150	835	575	485	320	212	111	88.4
MAX	317	204	103	867	1,564	3,866	4,919	2,292	1,045	2,298	554	318
(WY)	(1995)	(1961)	(1983)	(1973)	(1999)	(1987)	(1997)	(1986)	(1967)	(1993)	(1993)	(1996)
MIN	2.92	2.14	0.000	0.000	0.000	18.2	10.3	5.45	20.5	10.8	0.000	2.29
(WY)	(1959)	(1960)	(1960)	(1959)	(1959)	(1981)	(1981)	(1981)	(1989)	(1991)	(1959)	(1960)

06357800 GRAND RIVER AT LITTLE EAGLE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1959 - 2003	
ANNUAL TOTAL	12,825.0		17,944.5			
ANNUAL MEAN	35.1		49.2		[a]252	
HIGHEST ANNUAL MEAN					1,007	1997
LOWEST ANNUAL MEAN					44.8	2002
HIGHEST DAILY MEAN	116	Apr 8	1,300	Mar 18	26,500	Mar 23, 1987
LOWEST DAILY MEAN	9.0	Dec 30	1.0	Feb 9	[b]0.00	Oct 2, 1958
ANNUAL SEVEN-DAY MINIMUM	11	Dec 25	1.0	Feb 9	0.00	Oct 2, 1958
MAXIMUM PEAK FLOW			[c]2,000	Mar 21	[d]31,000	Mar 23, 1987
MAXIMUM PEAK STAGE			[f]9.70	Mar 21	[g]21.76	Mar 18, 1966
ANNUAL RUNOFF (AC-FT)	25,440		35,590		182,200	
10 PERCENT EXCEEDS	68		81		474	
50 PERCENT EXCEEDS	27		23		68	
90 PERCENT EXCEEDS	17		2.3		5.0	

a Median of annual mean discharges, 180 ft^3/s.
b No flow at times.
c Backwater from ice.
d Gage height, 19.16 ft, datum then in use.
e Estimated.
f Also Mar. 18, backwater from ice.
g From floodmarks, ice jam, site and datum then in use.



06359500 MOREAU RIVER NEAR FAITH, SD

LOCATION.--Lat 45° 11'52", long 102° 09'22", in $NW^1/_4$ $NW^1/_4$ sec.10, T.14 N., R.16 E., Perkins County, Hydrologic Unit 10130306, on left bank 10 ft downstream from bridge on State Highway 73, 3.1 mi downstream from Rabbit Creek, and 13.5 mi northwest of Faith.

DRAINAGE AREA.--2,660 mi^2, approximately.

PERIOD OF RECORD.--March 1943 to current year.

REVISED RECORDS.--WSP 1176: 1944. WSP 1279: 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 2,238.68 ft above NGVD of 1929. Prior to Oct. 5, 1949, nonrecording gage 0.3 mi upstream and Oct. 5, 1949, to July 16, 1959, nonrecording gage and crest-stage gage at present site; both at datum 1.0 ft higher. July 17, 1959, to Sept. 1, 1971, recording gage at site 500 ft downstream at present datum.

REMARKS.--Records good except those for Mar. 20 to Apr. 1, which are fair, and those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	e7.1	e11	e8.8	e6.0	e20	35	22	8.7	12	0.00	0.00
2	1.2	e7.1	e12	e8.6	e6.8	e21	31	20	8.7	14	0.00	0.00
3	1.2	e7.4	e12	e8.5	e7.8	e21	26	17	9.2	10	0.00	0.00
4	1.1	e7.9	e12	e8.0	e8.9	e20	24	34	9.9	8.6	0.00	0.00
5	1.7	e8.2	e13	e7.8	e10	e19	22	79	12	7.2	0.00	0.00
6	2.3	e9.4	e13	e7.5	e11	e19	21	59	12	5.9	0.00	0.00
7	2.6	10	e14	e7.4	e12	e20	21	36	13	4.8	0.00	0.00
8	2.8	9.7	e15	e7.1	e13	e30	20	35	12	4.4	0.00	0.00
9	2.8	9.1	e16	e7.0	e13	e51	19	214	11	24	0.00	0.00
10	3.0	8.3	e17	e6.8	e13	e90	19	274	10	12	0.00	228
11	3.1	8.3	e18	e6.3	e14	e110	17	131	11	69	0.00	913
12	2.7	8.1	e18	e6.1	e14	e130	16	77	11	121	0.00	252
13	2.7	9.1	e19	e5.8	e16	e150	15	73	9.9	62	0.00	85
14	3.0	9.8	e19	e5.4	e18	e330	15	48	9.3	33	0.00	82
15	2.9	9.7	e18	e5.2	e20	e400	15	35	10	20	0.00	89
16	3.3	9.8	e17	e5.1	e23	e380	15	27	60	14	0.00	53
17	3.8	9.7	e16	e5.0	e30	e410	20	22	24	10	0.00	31
18	3.8	9.4	e15	e5.0	e41	e780	19	20	13	8.0	0.00	22
19	3.7	9.1	e14	e4.9	e40	e920	27	18	9.3	9.0	0.00	15
20	3.8	12	e13	e4.6	e34	990	25	17	6.9	10	0.00	11
21	e4.3	9.9	e12	e4.2	e30	988	20	15	5.6	7.4	0.00	8.3
22	e4.7	10	e11	e3.9	e20	672	18	14	5.6	5.8	0.00	8.8
23	e5.0	10	e11	e3.8	e18	417	16	13	6.8	4.4	0.00	12
24	e5.5	e9.8	e10	e3.7	e17	263	16	12	8.4	3.4	0.00	9.3
25	6.1	e8.4	e10	e3.7	e16	168	16	12	46	2.6	0.00	7.3
26	6.3	e8.6	e10	e3.8	e16	127	15	11	25	1.5	0.00	5.9
27	6.6	e9.0	e9.6	e3.9	e17	94	14	10	18	0.94	0.00	4.7
28	6.7	e9.7	e9.5	e4.1	e19	78	14	9.6	24	0.78	0.00	4.9
29	e6.9	e10	e9.2	e4.7	---	59	22	9.1	16	0.29	0.00	4.2
30	e7.0	e11	e9.0	e5.0	---	56	29	8.7	12	0.00	0.00	6.2
31	e7.0	---	e9.0	e5.4	---	47	---	8.7	---	0.00	0.00	---
TOTAL	118.8	275.6	412.3	177.1	504.5	7,880	602	1,381.1	438.3	486.01	0.00	1,852.60
MEAN	3.83	9.19	13.3	5.71	18.0	254	20.1	44.6	14.6	15.7	0.000	61.8
MAX	7.0	12	19	8.8	41	990	35	274	60	121	0.00	913
MIN	1.1	7.1	9.0	3.7	6.0	19	14	8.7	5.6	0.00	0.00	0.00
AC-FT	236	547	818	351	1,000	15,630	1,190	2,740	869	964	0.00	3,670

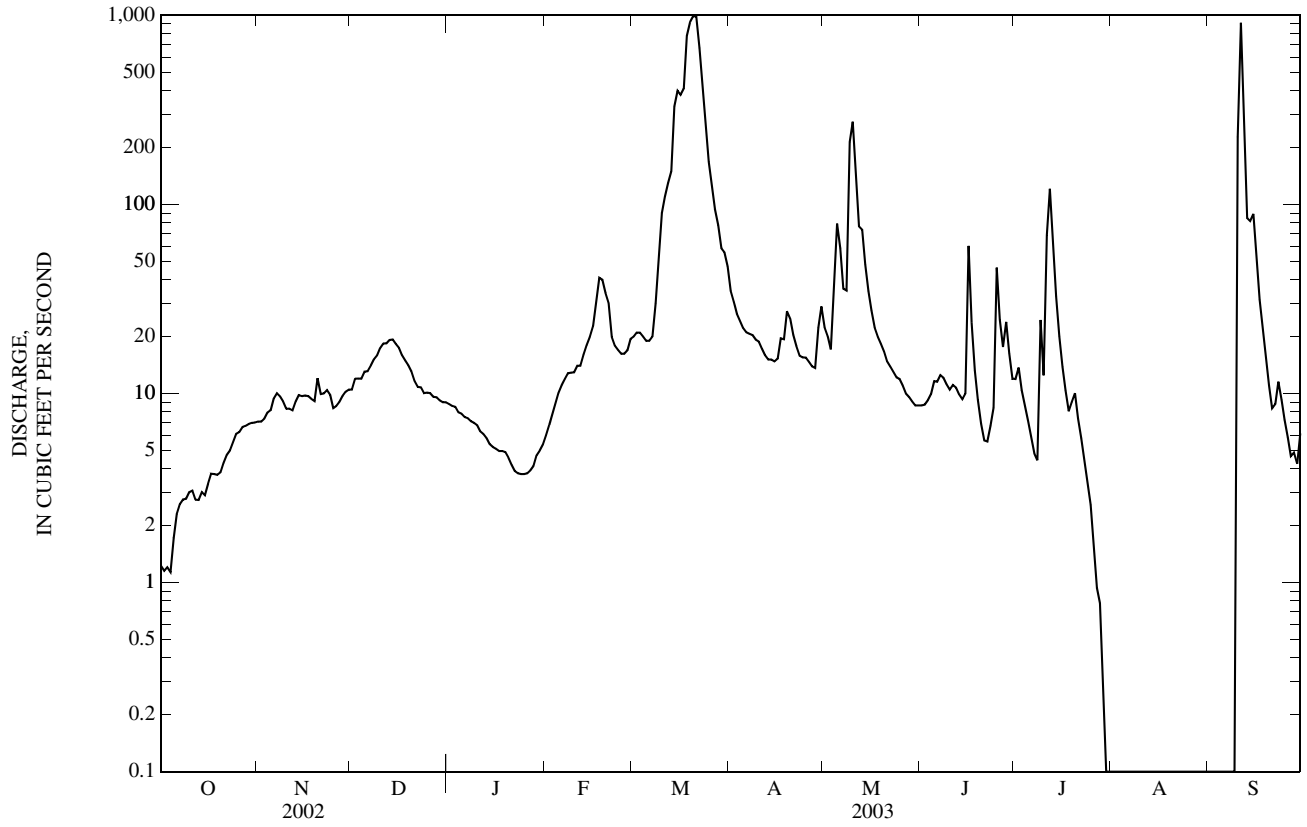
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2003, BY WATER YEAR (WY)

MEAN	33.0	15.2	7.74	7.27	72.9	400	378	301	278	114	33.5	17.0
MAX	463	139	44.8	99.0	1,045	2,757	4,355	2,203	1,850	1,530	258	262
(WY)	(1983)	(1999)	(1999)	(1973)	(1996)	(1978)	(1952)	(1982)	(1944)	(1993)	(1993)	(1986)
MIN	0.000	1.10	0.000	0.000	0.000	0.19	5.27	4.60	2.04	0.000	0.000	0.003
(WY)	(1959)	(1946)	(1956)	(1944)	(1944)	(1944)	(1981)	(1980)	(2002)	(2002)	(1949)	(1958)

06359500 MOREAU RIVER NEAR FAITH, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1944 - 2003	
ANNUAL TOTAL	4,483.84		14,128.31			
ANNUAL MEAN	12.3		38.7		[a]138	
HIGHEST ANNUAL MEAN					496	1997
LOWEST ANNUAL MEAN					7.60	1961
HIGHEST DAILY MEAN	673	Aug 27	990	Mar 20	25,300	Apr 8, 1944
LOWEST DAILY MEAN	0.00	Jun 29	[b]0.00	Jul 30	[b]0.00	Dec 15, 1943
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 29	0.00	Jul 30	0.00	Dec 15, 1943
MAXIMUM PEAK FLOW			2,690	Sep 10	[c]26,000	Apr 9, 1944
MAXIMUM PEAK STAGE			7.93	Sep 10	[d]20.90	Apr 9, 1944
ANNUAL RUNOFF (AC-FT)	8,890		28,020		100,200	
10 PERCENT EXCEEDS	23		59		195	
50 PERCENT EXCEEDS	6.6		10		12	
90 PERCENT EXCEEDS	0.00		0.00		0.20	

a Median of annual mean discharges, 95 ft^3/s.
b No flow at times in most years.
c From rating curve extended above 12,000 ft^3/s on basis of slope-area measurement of peak flow.
d From floodmarks, site and datum then in use.
e Estimated.



06360500 MOREAU RIVER NEAR WHITEHORSE, SD

LOCATION.--Lat 45° 15'21", long 100° 50'33", in $SW^1/_4$ $SE^1/_4$ sec.17, T.15 N., R.27 E., Dewey County, Hydrologic Unit 10130306, on left bank 30 ft downstream from bridge, 2.4 mi southeast of Whitehorse, 8.8 mi downstream from Little Moreau River, and 16.3 mi southeast of town of Timber Lake.

DRAINAGE AREA.--4,880 mi^2, approximately.

PERIOD OF RECORD.--June 1954 to current year.

REVISED RECORDS.--WDR SD-78-1: 1977.

GAGE.--Water-stage recorder. Datum of gage is 1,661.48 ft above NGVD of 1929. Prior to Nov. 24, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1953 reached a stage of about 26.2 ft. Flood in March 1947 was probably higher.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	e0.60	e2.1	e0.08	e0.50	e0.90	88	11	3.4	5.7	0.36	0.00
2	0.00	e0.30	e1.8	e0.07	e1.0	e0.80	75	15	3.1	21	0.28	0.00
3	0.00	e0.15	e1.3	e0.06	e0.90	e0.80	64	16	3.8	15	0.17	0.00
4	0.00	e0.10	e1.0	e0.10	e0.80	e0.70	58	3,390	12	34	0.19	0.00
5	0.00	e0.06	e0.70	e0.20	e0.70	e0.70	51	460	10	49	0.13	0.00
6	0.00	e0.04	e0.50	e0.10	e0.60	e0.70	44	166	21	41	0.04	0.00
7	0.00	e0.03	e0.35	e0.15	e0.50	e0.60	40	247	16	23	0.00	0.00
8	0.00	e0.02	e0.25	e0.25	e0.45	e0.50	38	197	8.6	14	0.00	0.00
9	0.00	e0.01	e0.25	e0.15	e0.40	e0.50	35	372	4.2	396	0.00	0.00
10	0.00	e0.01	e0.30	e0.10	e0.35	e0.50	29	271	3.4	604	0.00	0.00
11	0.00	e0.01	e0.35	e0.07	e0.30	e0.50	25	164	2.7	653	0.00	0.00
12	0.00	e0.01	e0.40	e0.04	e0.30	e0.60	21	153	2.4	234	0.00	0.00
13	0.00	e0.01	e0.50	e0.02	e0.30	e1.0	17	281	2.2	127	0.00	0.00
14	0.00	e0.01	e0.60	e0.01	e0.25	e10	15	206	2.3	78	0.00	0.00
15	0.00	e0.01	e0.70	e0.00	e0.25	e100	14	156	8.2	56	0.00	181
16	0.00	e0.01	e0.80	e0.00	e0.30	e300	12	114	6.2	44	0.00	142
17	0.00	e0.01	e1.0	e0.00	e0.35	e250	14	92	3.3	71	0.00	94
18	0.00	e0.05	e1.5	e0.00	e0.40	e800	16	80	2.2	54	0.00	80
19	0.00	e0.30	e1.5	e0.00	e0.50	e700	18	66	1.5	41	0.00	78
20	0.00	e4.6	e1.3	e0.00	e0.70	e1,200	21	54	1.1	32	0.00	78
21	0.00	4.1	e1.0	e0.00	e1.0	1,640	20	44	0.87	25	0.00	63
22	0.00	3.7	e0.80	e0.00	e0.90	1,410	16	37	0.78	21	0.00	53
23	0.00	3.7	e0.60	e0.00	e0.80	1,180	15	32	0.65	14	0.00	43
24	0.00	e3.6	e0.50	e0.00	e0.80	787	16	38	0.91	7.2	0.00	34
25	0.00	3.5	e0.40	e0.00	e0.70	520	18	30	15	3.9	0.00	29
26	0.00	3.1	e0.30	e0.00	e0.70	365	16	21	16	2.4	0.00	25
27	0.00	3.2	e0.20	e0.00	e0.80	263	16	16	15	1.7	0.00	21
28	0.00	2.9	e0.20	e0.00	e0.90	201	13	13	9.1	1.3	0.00	17
29	e0.10	2.5	e0.15	e0.00	---	153	14	9.2	3.2	0.98	0.00	15
30	e2.0	e2.0	e0.10	e0.05	---	127	13	6.5	2.1	0.68	0.00	11
31	e1.0	---	e0.09	e0.10	---	110	---	4.3	---	0.50	0.00	---
TOTAL	3.10	38.64	21.54	1.55	16.45	10,124.80	852	6,762.0	181.21	2,671.36	1.17	964.00
MEAN	0.10	1.29	0.69	0.050	0.59	327	28.4	218	6.04	86.2	0.038	32.1
MAX	2.0	4.6	2.1	0.25	1.0	1,640	88	3,390	21	653	0.36	181
MIN	0.00	0.01	0.09	0.00	0.25	0.50	12	4.3	0.65	0.50	0.00	0.00
AC-FT	6.1	77	43	3.1	33	20,080	1,690	13,410	359	5,300	2.3	1,910

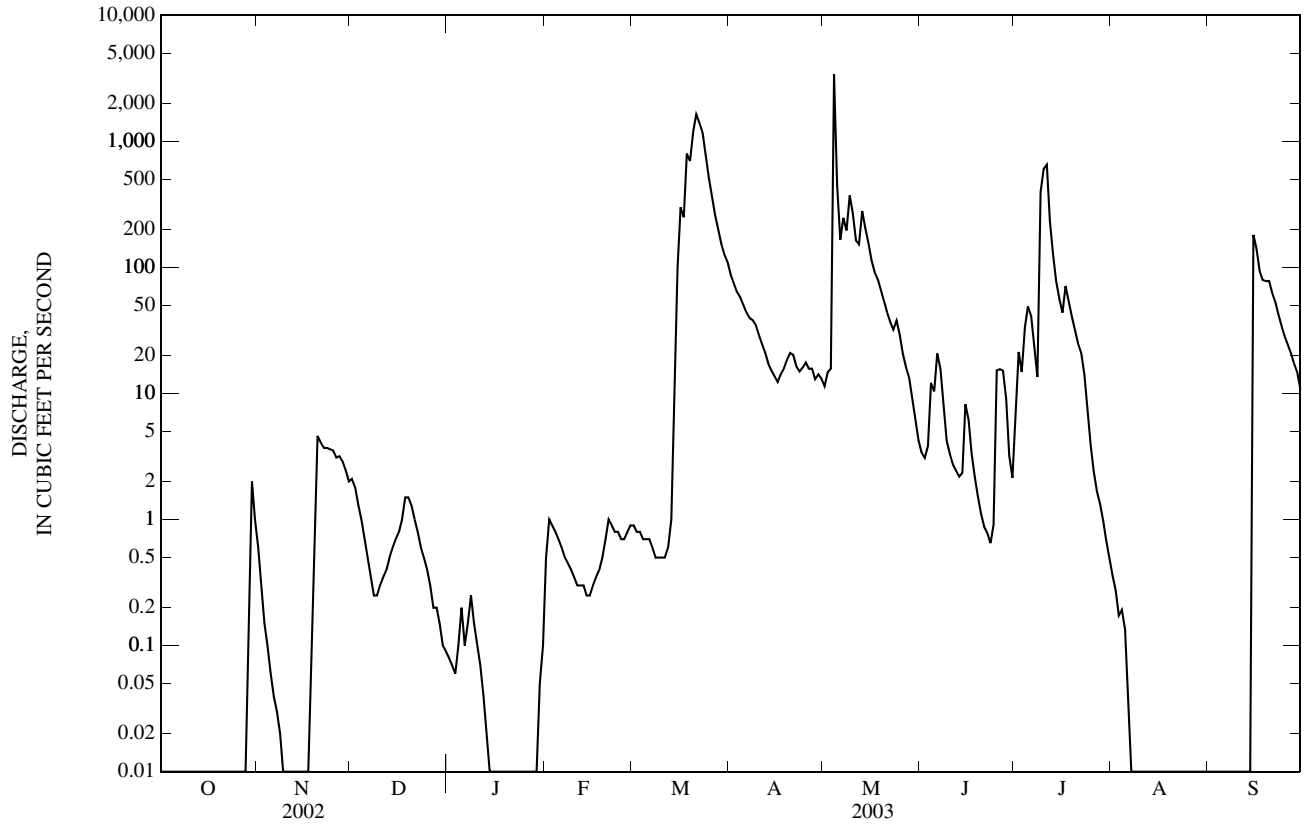
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2003, BY WATER YEAR (WY)

MEAN	53.1	16.3	6.69	7.77	100	956	484	634	386	189	54.9	28.1
MAX	642	182	59.1	210	1,253	8,022	5,071	3,759	2,433	2,438	452	362
(WY)	(1983)	(1999)	(1999)	(1973)	(1996)	(1997)	(1997)	(1982)	(1967)	(1993)	(1993)	(1996)
MIN	0.000	0.000	0.000	0.000	0.000	2.28	0.000	0.000	0.17	0.000	0.000	0.000
(WY)	(1957)	(1959)	(1956)	(1956)	(1955)	(1964)	(1981)	(1981)	(2002)	(2002)	(1955)	(1958)

06360500 MOREAU RIVER NEAR WHITEHORSE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1955 - 2003	
ANNUAL TOTAL	3,084.36		21,637.82			
ANNUAL MEAN	8.45		59.3		[a]244	
HIGHEST ANNUAL MEAN					1,428	1997
LOWEST ANNUAL MEAN					8.39	1980
HIGHEST DAILY MEAN	117	Sep 2	3,390	May 4	28,100	Mar 23, 1997
LOWEST DAILY MEAN	0.00	Jun 11	0.00	Oct 1	[b]0.00	Jan 12, 1955
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 11	0.00	Oct 1	0.00	Jan 12, 1955
MAXIMUM PEAK FLOW			7,530	May 4	[c]29,700	Mar 23, 1997
MAXIMUM PEAK STAGE			14.02	May 4	[d]27.68	Mar 21, 1997
ANNUAL RUNOFF (AC-FT)	6,120		42,920		176,900	
10 PERCENT EXCEEDS	25		104		450	
50 PERCENT EXCEEDS	0.50		0.80		12	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Median of annual mean discharges, 140 ft^3/s.
b No flow at times in most years.
c Gage height, 26.93 ft.
d Backwater from ice.
e Estimated.



06392900 BEAVER CREEK AT MALLO CAMP, NEAR FOUR CORNERS, WY

LOCATION.--Lat 44° 05'06", long 104° 03'36", in SE$^1/_4$ NE$^1/_4$ NE$^1/_4$ sec.4, T.47 N., R.60 W., Weston County, Hydrologic Unit 10120107, on right bank in Mallo Campgrounds, 250 ft upstream from mouth, 750 ft upstream from dam on Stockade Beaver Creek, and 3.8 mi east of Four Corners.

DRAINAGE AREA.--10.3 mi^2.

PERIOD OF RECORD.--October 1974 to September 1982, April 1991 to current year.

REVISED RECORD.--WDR-85-1: 1981, 1982.

GAGE.--Water-stage recorder. Elevation of gage is 6,030 ft above NGVD of 1929, from topographic map. October 1974 to September 1982, at site 50 ft upstream and datum 3.11 ft lower. U.S. Geological Survey data collection with satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No diversions upstream from station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.98	e0.66	e0.70	e0.80	0.83	0.94	e2.3	1.4	1.5	2.3	1.2	1.5
2	0.91	e0.70	0.72	e0.78	0.80	0.95	e2.5	1.5	1.3	1.7	1.1	1.5
3	0.86	e0.72	0.74	e0.76	0.78	0.98	e2.2	1.4	1.0	1.6	1.1	1.5
4	0.87	e0.76	0.73	e0.74	0.80	0.97	e2.0	1.4	1.0	1.5	1.1	1.5
5	0.87	e0.80	e0.72	e0.72	0.79	0.93	1.9	1.4	0.98	1.6	2.8	1.4
6	0.90	e0.84	e0.68	0.71	0.71	0.98	1.6	1.3	1.1	1.5	1.8	1.3
7	0.90	e0.86	e0.72	e0.74	0.70	0.98	1.4	1.3	1.3	1.6	1.8	1.4
8	0.91	0.87	e0.74	e0.84	e0.78	0.94	1.3	1.2	1.2	1.6	1.8	1.4
9	0.76	0.84	e0.72	e0.80	e0.72	0.92	2.5	1.2	1.0	0.92	1.7	1.4
10	0.77	0.81	e0.72	e0.74	e0.76	0.92	e2.7	1.2	1.0	0.96	1.7	1.6
11	0.78	0.78	e0.74	e0.72	e0.80	0.92	e2.6	1.2	1.0	2.0	1.7	1.4
12	0.78	0.76	e0.72	e0.74	e0.82	0.92	e2.9	1.1	2.3	1.6	1.7	1.4
13	0.78	0.77	e0.72	e0.90	0.85	0.91	2.2	1.1	1.0	1.7	1.6	1.4
14	0.75	0.74	e0.74	e0.84	0.87	0.96	1.8	1.1	2.1	1.6	1.6	1.2
15	0.75	0.74	e0.78	e0.82	0.83	1.0	2.9	2.3	2.1	1.5	1.5	1.1
16	2.0	e0.72	e0.78	e0.74	0.83	1.0	1.2	1.6	2.0	1.3	1.5	1.0
17	0.50	0.73	e0.76	e0.76	0.86	1.2	e1.1	1.9	2.3	1.2	1.6	1.0
18	0.84	0.74	e0.74	e0.82	0.84	e2.6	e1.2	1.7	1.8	0.90	1.6	1.0
19	0.83	0.70	e0.72	0.92	0.84	e2.3	1.3	1.2	1.4	0.86	1.7	1.1
20	0.82	0.68	e0.70	e0.84	0.84	e1.8	1.2	1.2	1.4	0.94	1.6	1.1
21	0.79	0.66	e0.70	0.88	0.88	e2.0	1.1	1.2	1.1	0.92	1.6	1.1
22	0.79	0.68	e0.66	0.85	0.88	e2.3	1.1	1.1	1.1	1.1	1.5	1.2
23	0.76	0.69	e0.66	0.87	0.78	e2.6	1.1	1.1	1.1	1.1	1.5	1.1
24	0.74	e0.66	e0.68	0.87	0.68	e2.5	1.3	1.0	1.0	2.3	1.5	1.2
25	0.74	e0.64	e0.66	0.87	0.84	e2.3	2.5	1.0	1.0	1.7	1.5	1.3
26	e0.72	e0.66	e0.68	0.87	0.92	e2.5	2.2	1.0	0.99	1.4	1.5	1.3
27	0.74	e0.70	e0.72	0.87	0.98	1.7	2.2	0.88	0.95	1.5	1.5	1.3
28	0.74	e0.74	e0.78	0.87	0.96	1.4	2.3	0.91	0.94	1.5	1.5	1.3
29	e0.72	0.76	e0.80	0.85	---	1.2	2.0	0.89	0.94	1.3	1.5	1.3
30	e0.68	e0.76	e0.82	0.85	---	1.3	1.9	1.9	0.91	1.2	1.6	1.3
31	e0.62	---	e0.76	0.85	---	e2.0	---	1.8	---	1.2	1.6	---
TOTAL	25.60	22.17	22.51	25.23	22.97	44.92	56.5	40.48	38.81	44.10	49.0	38.6
MEAN	0.83	0.74	0.73	0.81	0.82	1.45	1.88	1.31	1.29	1.42	1.58	1.29
MAX	2.0	0.87	0.82	0.92	0.98	2.6	2.9	2.3	2.3	2.3	2.8	1.6
MIN	0.50	0.64	0.66	0.71	0.68	0.91	1.1	0.88	0.91	0.86	1.1	1.0
AC-FT	51	44	45	50	46	89	112	80	77	87	97	77

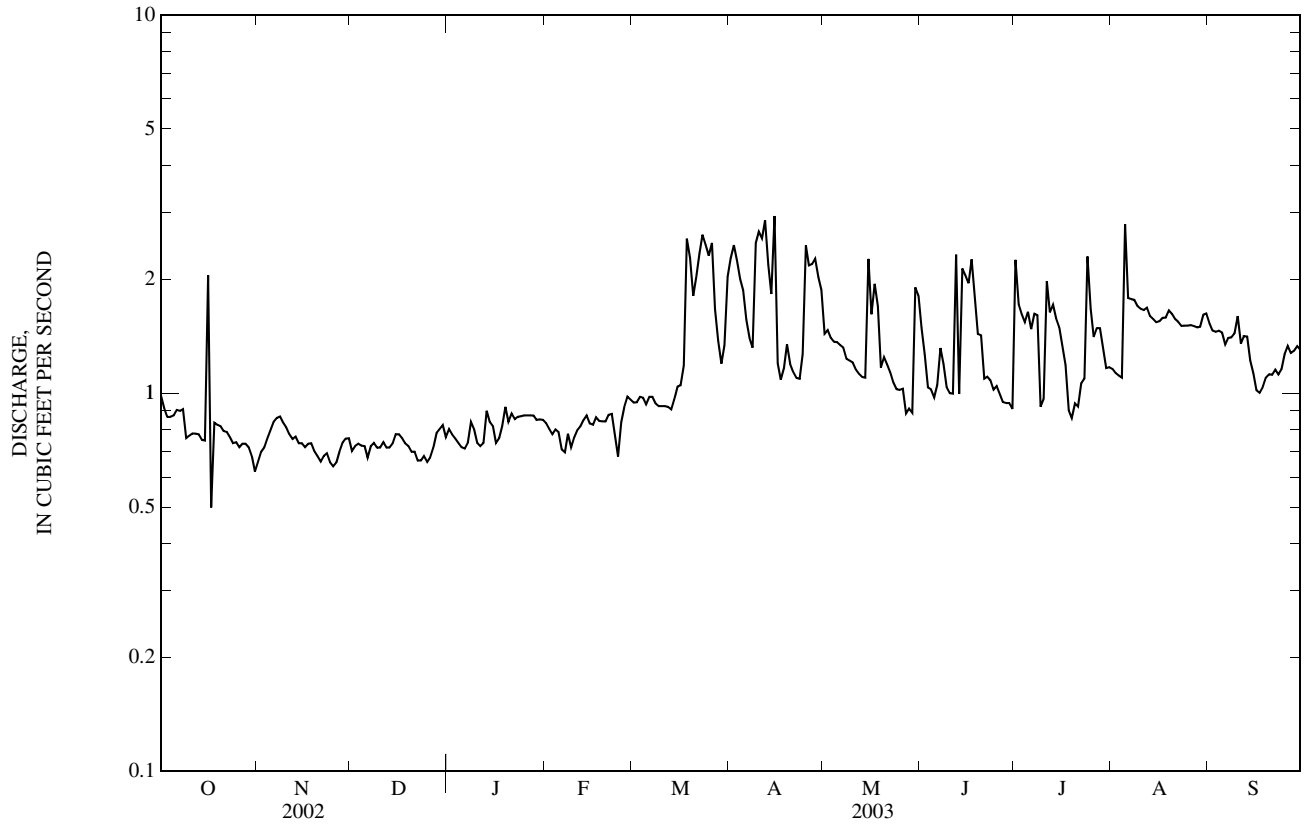
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

MEAN	1.89	1.75	1.64	1.57	1.72	2.01	2.30	2.21	2.38	2.12	2.00	1.89
MAX	3.16	3.30	2.68	2.95	2.90	5.83	4.07	3.44	4.05	3.09	2.89	3.08
(WY)	(2000)	(2000)	(1999)	(1999)	(1999)	(1999)	(1994)	(1978)	(1980)	(1979)	(1978)	(2000)
MIN	0.31	0.47	0.44	0.42	0.46	0.71	0.88	0.81	1.29	1.34	0.75	0.62
(WY)	(1977)	(1977)	(1977)	(1993)	(1977)	(1977)	(1993)	(1993)	(2003)	(1993)	(1976)	(1976)

06392900 BEAVER CREEK AT MALLO CAMP, NEAR FOUR CORNERS, WY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	549.45		430.89		--	
ANNUAL MEAN	1.51		1.18		1.97	
HIGHEST ANNUAL MEAN	--		--		3.20	1999
LOWEST ANNUAL MEAN	--		--		0.94	1977
HIGHEST DAILY MEAN	3.1	Jun 20	2.9	Apr 12	34	Mar 26, 1999
LOWEST DAILY MEAN	0.50	Oct 17	0.50	Oct 17	0.10	Jan 20, 1993
ANNUAL SEVEN-DAY MINIMUM	0.67	Nov 20	0.67	Nov 20	0.12	Jan 17, 1993
MAXIMUM PEAK FLOW	--		[a]25	Apr 15	[b]103	Apr 22, 1994
MAXIMUM PEAK STAGE	--		[c]2.54	Apr 1	[c]2.88	Dec 25, 1998
ANNUAL RUNOFF (AC-FT)	1,090		855		1,430	
10 PERCENT EXCEEDS	2.3		1.9		2.9	
50 PERCENT EXCEEDS	1.5		1.0		1.9	
90 PERCENT EXCEEDS	0.73		0.72		1.1	

a Gage height, 1.52 ft, may have been higher during period affected by backwater from ice.
b From rating curve extended above 85 ft^3/s.
c Backwater from ice.
e Estimated.



06392900 BEAVER CREEK AT MALLO CAMP, NEAR FOUR CORNERS, WY-Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--May 1989 to current year.

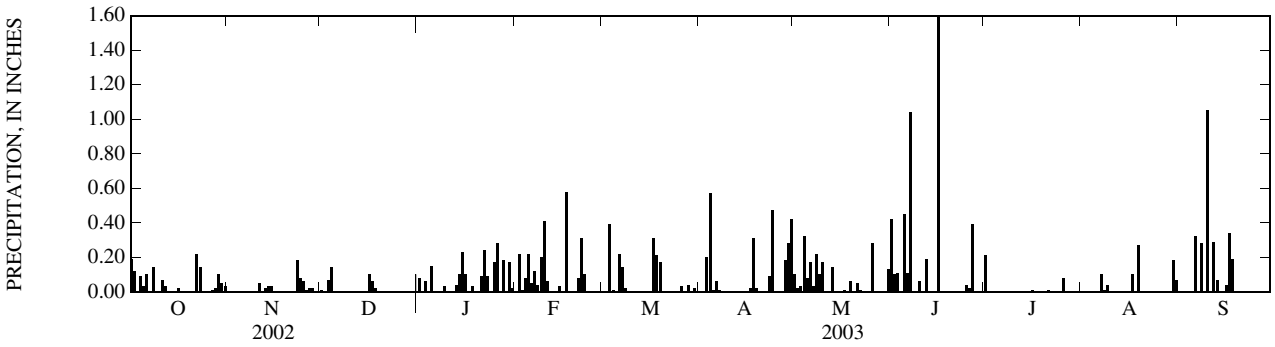
INSTRUMENTATION.--Precipitation recorder with shielded 8.0-in. orifice and 12-in. capacity. Elevation of gage is 6,000 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair. Precipitation gage is located 0.2 mi south of streamflow gaging station.

PRECIPITATION, INCHES
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.19	0.00	0.01	0.08	0.00	0.00	0.00	0.10	0.42	0.21	0.00	0.00
2	0.12	0.00	0.00	0.00	0.22	0.00	0.00	0.02	0.10	0.00	0.00	0.00
3	0.00	0.00	0.07	0.06	0.01	0.39	0.20	0.03	0.11	0.00	0.00	0.00
4	0.09	0.00	0.14	0.00	0.08	0.01	0.57	0.32	0.00	0.00	0.00	0.00
5	0.03	0.00	0.00	0.15	0.22	0.00	0.01	0.08	0.45	0.00	0.00	0.00
6	0.10	0.00	0.00	0.00	0.05	0.22	0.06	0.17	0.11	0.00	0.00	0.32
7	0.00	0.00	0.00	0.00	0.12	0.14	0.01	0.03	1.04	0.00	0.10	0.00
8	0.14	0.00	0.00	0.00	0.04	0.02	0.00	0.22	0.00	0.00	0.01	0.28
9	0.00	0.00	0.00	0.03	0.20	0.00	0.00	0.10	0.00	0.00	0.04	0.00
10	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.17	0.06	0.00	0.00	1.05
11	0.07	0.05	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.29
13	0.00	0.02	0.00	0.04	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.07
14	0.00	0.03	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.03	0.00	0.23	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.02	0.00	0.10	0.10	0.00	0.00	0.00	0.00	1.59	0.01	0.00	0.04
17	0.00	0.00	0.06	0.00	0.58	0.31	0.02	0.01	0.00	0.00	0.10	0.34
18	0.00	0.00	0.02	0.03	0.00	0.21	0.31	0.00	0.00	0.00	0.00	0.19
19	0.00	0.00	0.00	0.00	0.00	0.17	0.02	0.06	0.00	0.00	0.27	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.09	0.08	0.00	0.00	0.05	0.00	0.01	0.00	0.00
22	0.22	0.00	0.00	0.24	0.31	0.00	0.00	0.01	0.00	0.00	0.00	0.00
23	0.14	0.18	0.00	0.09	0.10	0.00	0.09	0.00	0.00	0.00	0.00	0.00
24	0.00	0.08	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00	0.00
25	0.00	0.06	0.00	0.17	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
26	0.00	0.01	0.00	0.28	0.00	0.03	0.00	0.28	0.02	0.08	0.00	0.00
27	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00
28	0.02	0.02	0.00	0.18	0.00	0.04	0.18	0.00	0.00	0.00	0.00	0.00
29	0.10	0.00	0.00	0.00	---	0.00	0.28	0.00	0.00	0.00	0.00	0.00
30	0.05	0.00	0.00	0.17	---	0.02	0.42	0.00	0.00	0.00	0.18	0.00
31	0.03	---	0.00	0.02	---	0.00	---	0.13	---	0.00	0.07	---
TOTAL	1.36	0.50	0.40	2.06	2.51	1.56	2.64	1.92	4.52	0.31	0.77	2.58

CAL YR 2002 TOTAL 17.40
WTR YR 2003 TOTAL 21.13



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06392950 STOCKADE BEAVER CREEK NEAR NEWCASTLE, WY

LOCATION.--Lat 43° 51'32", long 104° 06'24", in $SW^1/_4$ $SW^1/_4$ $SE^1/_4$ sec.19, T.45 N., R.60 W., Weston County, Hydrologic Unit 10120107, on right bank 20 ft upstream from culverts on county road, 0.6 mi upstream from South Draw, 2.5 mi upstream from LAK Reservoir Dam, and 4.7 mi east of Newcastle.

DRAINAGE AREA.--107 mi^2.

PERIOD OF RECORD.--October 1974 to September 1982, April 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,460 ft above NGVD of 1929, from topographic map. October 1974 to September 1982, at same site and datum. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. A few small diversions upstream from station for irrigation.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	17	14	16	15	11	17	18	14	14	13	13
2	15	17	14	16	15	11	17	17	14	14	13	13
3	15	17	15	15	14	11	17	14	13	14	13	11
4	15	17	14	15	14	12	18	11	12	12	13	9.8
5	16	17	14	15	14	11	17	11	13	10	12	9.9
6	16	17	15	15	14	12	17	11	11	10	12	9.9
7	16	16	14	15	16	12	17	11	13	10	12	10
8	16	15	14	15	14	12	17	11	12	12	10	10
9	16	17	15	15	14	12	17	11	14	11	9.9	11
10	16	18	16	15	15	12	17	11	14	11	9.6	13
11	15	18	16	15	14	13	17	11	14	9.2	9.3	11
12	15	16	16	15	14	15	17	11	15	11	8.4	11
13	15	15	16	15	15	20	16	12	15	8.1	7.1	11
14	15	15	16	15	15	34	16	11	14	8.0	7.1	11
15	16	15	16	15	14	36	16	11	14	8.3	7.4	11
16	17	15	17	14	15	28	16	11	14	9.0	9.2	10
17	18	15	17	14	15	40	16	10	15	9.5	13	10
18	18	15	17	14	14	45	16	11	16	11	13	11
19	17	16	e17	14	14	35	16	10	15	12	13	10
20	16	16	e17	14	14	33	16	10	15	13	13	10
21	16	16	e17	14	14	32	16	10	15	13	13	10
22	18	16	e17	14	14	30	16	11	15	13	13	10
23	18	e16	e17	14	14	29	16	10	15	13	13	10
24	e18	e16	e17	14	18	26	17	10	15	13	13	10
25	18	e17	e17	14	16	22	17	11	15	13	13	10
26	18	17	e16	14	11	18	16	12	15	13	13	10
27	18	17	e16	14	11	17	16	12	14	13	13	11
28	18	16	e16	14	11	17	16	12	14	13	13	11
29	18	14	e16	14	---	17	16	13	14	12	13	11
30	18	14	16	14	---	17	19	10	14	12	13	12
31	18	---	16	14	---	17	---	13	---	13	14	---
TOTAL	514	483	491	451	398	657	498	358	423	358.1	362.0	321.6
MEAN	16.6	16.1	15.8	14.5	14.2	21.2	16.6	11.5	14.1	11.6	11.7	10.7
MAX	18	18	17	16	18	45	19	18	16	14	14	13
MIN	15	14	14	14	11	11	16	10	11	8.0	7.1	9.8
AC-FT	1,020	958	974	895	789	1,300	988	710	839	710	718	638

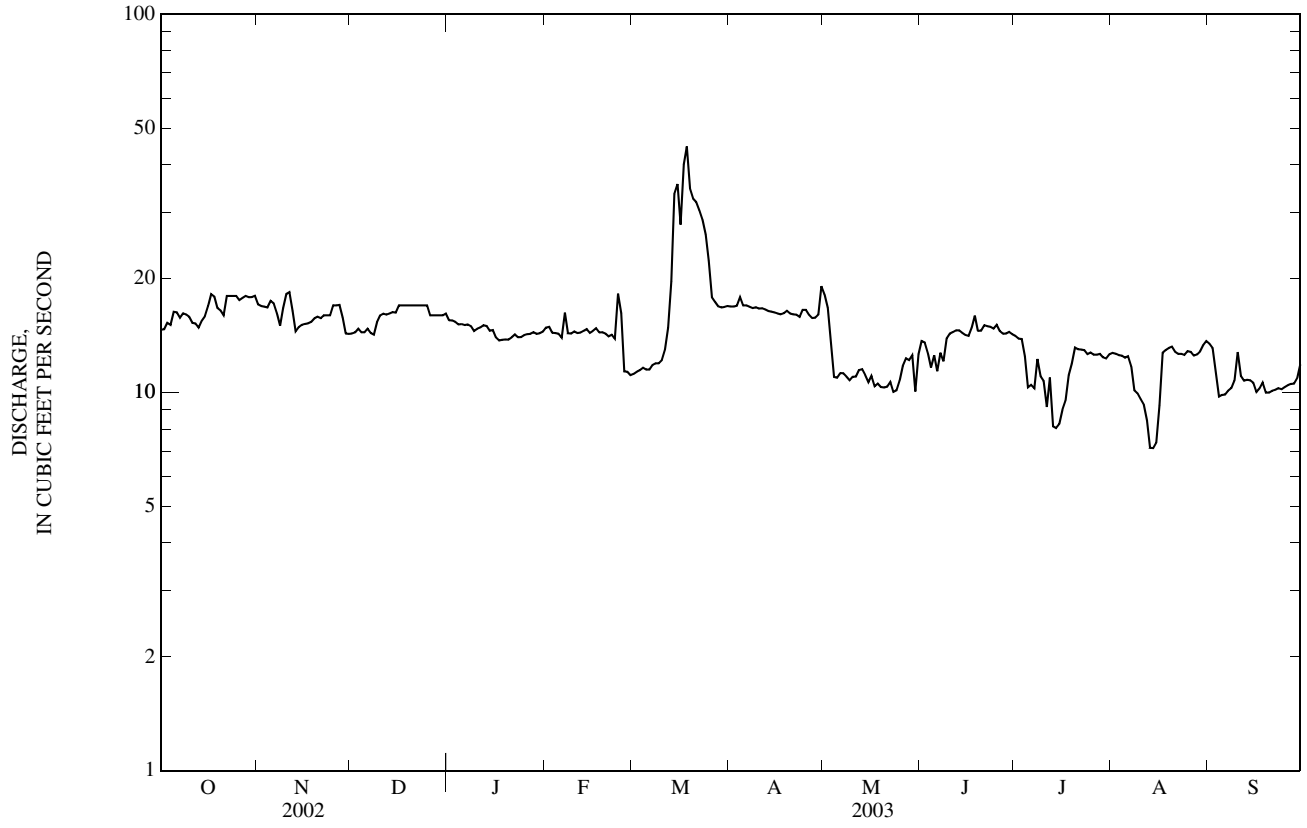
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

MEAN	13.6	13.7	13.5	13.2	13.5	15.1	14.0	11.7	11.8	11.7	12.4	12.8
MAX	18.9	19.0	18.1	17.6	17.6	21.3	19.4	18.5	17.8	17.0	20.9	20.0
(WY)	(2000)	(2001)	(2000)	(2000)	(2000)	(1996)	(2000)	(2000)	(1999)	(1999)	(1999)	(1999)
MIN	9.40	9.74	10.2	9.52	10.6	10.8	9.53	6.45	5.92	8.24	6.33	8.89
(WY)	(1982)	(1994)	(1993)	(1980)	(1993)	(1993)	(1981)	(1992)	(1992)	(1981)	(1992)	(1991)

06392950 STOCKADE BEAVER CREEK NEAR NEWCASTLE, WY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	5,454.7		5,314.7		--	
ANNUAL MEAN	14.9		14.6		13.1	
HIGHEST ANNUAL MEAN	--		--		17.4	2000
LOWEST ANNUAL MEAN	--		--		9.80	1992
HIGHEST DAILY MEAN	21	Aug 29	45	Mar 18	143	Jul 16, 1993
LOWEST DAILY MEAN	7.1	Jul 5	7.1	Aug 13,14	3.9	May 21, 1992
ANNUAL SEVEN-DAY MINIMUM	7.6	Jul 3	8.3	Aug 10	4.6	Aug 2, 1992
MAXIMUM PEAK FLOW	--		66	Mar 18	[a]776	Jul 16, 1993
MAXIMUM PEAK STAGE	--		7.64	Mar 18	12.44	Jul 16, 1993
ANNUAL RUNOFF (AC-FT)	10,820		10,540		9,510	
10 PERCENT EXCEEDS	18		17		17	
50 PERCENT EXCEEDS	15		14		13	
90 PERCENT EXCEEDS	11		10		9.3	

a From rating curve extended above 18 ft^3/s on basis of culvert backwater computation.
e Estimated.



06395000 CHEYENNE RIVER AT EDGEMONT, SD

LOCATION.--Lat 43° 18'20", long 103° 49'14", in $SW^1/_4$ $SE^1/_4$ $SE^1/_4$ sec.36, T.8 S., R.2 E., Fall River County, Hydrologic Unit 10120106, on right bank at downstream side of bridge on old U.S. Highway 18, at Edgemont, 300 ft downstream from Burlington Northern Railroad bridge, and 600 ft upstream from Cottonwood Creek.

DRAINAGE AREA.--7,143 mi^2.

PERIOD OF RECORD.--June 1903 to November 1906 (no winter records), April 1928 to February 1933 (monthly discharge only), October 1946 to current year.

REVISED RECORDS.--WSP 1086: Drainage area. WSP 1116: 1947. WDR SD-78-1: 1977.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3,414.56 ft above NGVD of 1929. Prior to Dec. 1, 1906, nonrecording gage 20 ft upstream at datum 0.7 ft lower. Apr. 11, 1928, to Feb. 28, 1933, Oct. 4, 1946, to Oct. 23, 1947, and Jan. 11, 1961, to Apr. 24, 1963, nonrecording gage, and Oct. 24, 1947, to Jan. 10, 1961, and Apr. 25, 1963, to Sept. 30, 1972, water-stage recorder all at present site at datum 2.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Many small reservoirs above station used for stock and irrigation water, total capacity, about 45,000 acre-ft. U.S. Bureau of Reclamation satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 12, 1920, reached a stage of 13.0 ft and May 1, 1922, 14.0 ft, present datum, from floodmarks at railroad bridge.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	e12	e21	e18	e27	e13	28	28	8.6	49	0.37	0.81
2	2.5	e12	e22	e18	e27	e13	30	35	8.1	57	0.33	0.72
3	2.5	e12	e19	e18	e25	e12	33	57	7.0	31	0.32	0.68
4	2.2	e12	e18	e20	e23	e12	42	73	14	29	0.28	0.72
5	2.1	13	e17	e22	e21	e12	35	55	31	24	0.19	0.94
6	2.0	15	e17	e24	e19	e11	42	57	18	19	0.15	1.9
7	2.0	16	e16	e24	e17	e11	46	43	15	17	0.15	2.3
8	1.9	16	e16	e24	e16	e11	44	44	12	14	4.4	2.6
9	1.9	16	e17	e24	e15	e12	44	53	9.5	13	4.0	2.2
10	1.8	16	e17	e23	e14	e35	41	43	9.3	12	1.5	15
11	1.7	16	e18	e21	e14	e75	38	31	14	11	0.84	29
12	1.8	16	e20	e20	e15	e100	34	23	27	9.9	0.58	15
13	1.9	16	e22	e19	e16	e120	28	21	13	9.0	0.39	9.9
14	1.8	15	e23	e18	e17	e250	24	22	58	8.5	0.27	12
15	1.7	16	e23	e18	e16	393	24	23	229	7.7	0.24	13
16	1.7	16	e24	e18	e15	784	23	25	80	6.7	0.31	13
17	1.7	15	e25	e17	e16	941	24	24	126	5.6	1.3	17
18	1.7	14	e27	e17	e17	1,050	23	22	501	5.7	11	19
19	1.6	13	e26	e16	e17	1,440	24	24	547	5.0	6.1	19
20	1.6	15	e24	e15	e16	933	22	21	241	4.0	2.9	19
21	1.5	15	e23	e15	e16	481	20	19	241	3.3	2.0	16
22	1.4	15	e22	e14	e16	242	19	18	169	2.7	1.4	16
23	1.7	17	e21	e13	e15	159	20	18	113	2.3	1.1	15
24	3.4	18	e20	e12	e15	134	22	15	93	1.9	0.96	14
25	11	17	e19	e12	e15	140	24	13	95	1.4	0.76	13
26	14	e13	e18	e13	e14	122	22	13	120	1.0	0.64	12
27	14	e13	e17	e20	e14	103	19	11	121	0.86	0.64	11
28	14	e13	e24	e18	e13	81	17	9.4	76	0.67	0.52	8.3
29	14	e16	e24	e11	---	72	18	8.3	59	0.60	0.49	6.2
30	15	e16	e22	e19	---	54	24	9.6	45	0.52	0.67	4.9
31	12	---	e20	e25	---	36	---	7.7	---	0.45	0.93	---
TOTAL	140.8	445	642	566	481	7,852	854	866.0	3,100.5	353.80	45.73	310.17
MEAN	4.54	14.8	20.7	18.3	17.2	253	28.5	27.9	103	11.4	1.48	10.3
MAX	15	18	27	25	27	1,440	46	73	547	57	11	29
MIN	1.4	12	16	11	13	11	17	7.7	7.0	0.45	0.15	0.68
AC-FT	279	883	1,270	1,120	954	15,570	1,690	1,720	6,150	702	91	615

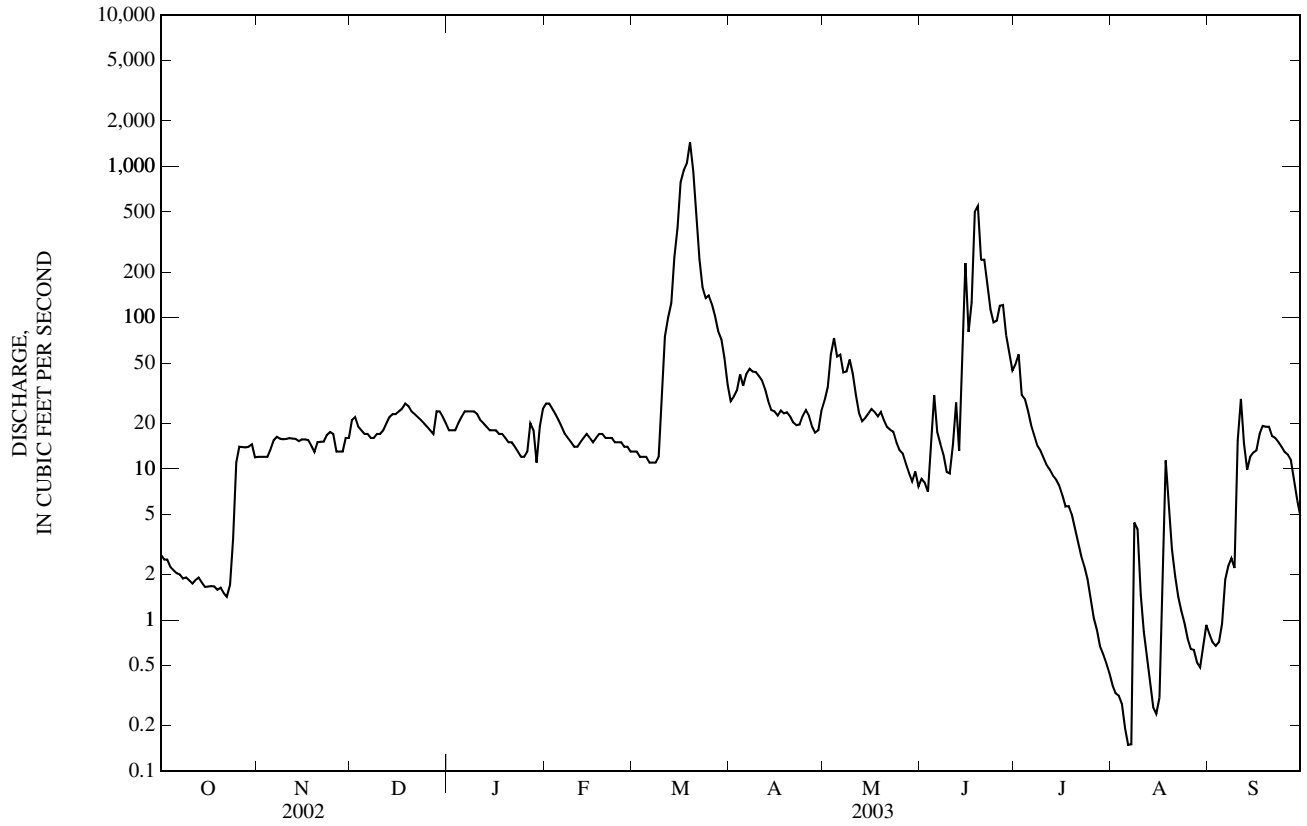
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

MEAN	21.5	16.6	9.18	9.05	41.1	124	66.9	207	245	121	64.5	26.0
MAX	291	266	50.5	37.3	302	506	558	2,192	2,084	806	388	275
(WY)	(1999)	(1999)	(1999)	(1999)	(1997)	(1994)	(1955)	(1978)	(1962)	(1958)	(1955)	(1973)
MIN	0.000	0.023	0.000	0.000	0.000	3.39	0.22	0.27	1.76	0.15	0.000	0.000
(WY)	(1961)	(1962)	(1960)	(1950)	(1960)	(1961)	(1961)	(1960)	(1966)	(1985)	(1960)	(1956)

06395000 CHEYENNE RIVER AT EDGEMONT, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1929-1932, 1947-2003	
ANNUAL TOTAL	5,015.39		15,657.00			
ANNUAL MEAN	13.7		42.9		[a]79.4	
HIGHEST ANNUAL MEAN					434	1962
LOWEST ANNUAL MEAN					12.0	1988
HIGHEST DAILY MEAN	181	Aug 31	1,440	Mar 19	24,000	May 20, 1978
LOWEST DAILY MEAN	0.07	Aug 20	0.15	Aug 6, 7	0.00	[b]Jan 5, 1947
ANNUAL SEVEN-DAY MINIMUM	0.10	Aug 18	0.26	Aug 1	0.00	[c]Aug 31, 1947
MAXIMUM PEAK FLOW			1,550	Mar 19	28,000	May 20, 1978
MAXIMUM PEAK STAGE			5.83	Mar 19	13.65	May 20, 1978
ANNUAL RUNOFF (AC-FT)	9,950		31,060		57,540	
10 PERCENT EXCEEDS	30		57		[c]150	
50 PERCENT EXCEEDS	8.7		16		[c]12	
90 PERCENT EXCEEDS	0.38		1.4		[c]0.14	

a Median of annual mean discharge, 63 ft^3/s.
b No flow at times in most years.
c Reflects water years 1947-2003.
e Estimated.



06400000 HAT CREEK NEAR EDGEMONT, SD

LOCATION.--Lat 43° 14'24", long 103° 35'16", in $SW^1/_4$ $SE^1/_4$ $NE^1/_4$ sec.25, T.9 S., R.4 E., Fall River County, Hydrologic Unit 10120108, on right bank at upstream side of bridge on State Highway 71, 2.4 mi upstream from mouth, 2.0 mi west of Heppner, and 12.5 mi southeast of Edgemont.

DRAINAGE AREA.--1,044 mi^2.

PERIOD OF RECORD.--April 1905 to September 1906, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3,295.71 ft above NGVD of 1929. Nonrecording gage Apr. 8, 1905, to May 2, 1906, at site 0.6 mi downstream and May 3 to July 7, 1906, at site 0.4 mi upstream at different datum. Nov. 6, 1950, to May 1, 1951, and July 18 to Sept. 7, 1975, nonrecording gage and May 2, 1951, to July 17, 1975, recording gage, at site 0.4 mi downstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. A few small diversions upstream from station for irrigation. Lander ditch diverts water from Hat Creek 0.4 mi upstream from gaging station for irrigating hay meadows downstream from station. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section. Results of discharge measurements, in cubic feet per second, of Lander ditch during water year 2002 are given herewith:

Oct.	7	0	Mar.	17	0	June	18	0	July	14	0	Aug.	6	0
Dec.	2	0	Apr.	11	0	June	30	0	July	17	0	Sept.	4	0
Jan.	21	0	May	19	0	July	3	0						

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	0.81	e2.6	e1.6	e0.50	e0.50	2.1	5.6	19	2.3	0.00	0.00
2	1.0	0.79	e2.3	e1.6	e1.0	e0.50	1.3	14	20	2.8	0.00	0.00
3	0.87	0.95	e2.2	e1.6	e2.0	e0.50	2.6	15	21	3.0	0.00	0.00
4	0.75	1.3	e2.1	e1.6	e1.0	e0.50	2.8	21	20	2.9	0.00	0.00
5	0.61	1.2	e2.0	e1.6	e0.75	e0.50	2.8	7.6	19	2.9	0.00	0.00
6	0.42	1.1	e2.1	e1.6	e0.50	e0.50	3.3	4.0	20	1.8	0.00	0.00
7	0.42	1.2	e2.2	e1.6	e0.50	e0.50	4.1	2.8	25	2.6	0.00	0.00
8	0.46	1.4	e2.2	e1.6	e0.50	e0.50	4.1	6.2	27	3.8	0.00	0.00
9	0.53	1.9	e2.3	e1.6	e0.50	e0.50	3.8	3.2	29	4.6	0.00	0.00
10	0.54	2.0	e2.3	e1.6	e0.50	e0.50	3.8	4.3	32	5.2	0.00	0.00
11	0.51	1.9	e2.4	e1.4	e0.50	e1.0	3.5	14	35	4.8	0.00	0.00
12	0.67	1.9	e2.4	e1.2	e0.50	e4.0	3.8	16	27	4.3	0.00	0.00
13	0.81	1.7	e2.5	e1.0	e0.50	e6.0	2.8	9.8	18	3.6	0.00	0.00
14	0.93	1.6	e2.6	e1.2	e0.50	6.6	2.5	10	30	0.79	0.00	0.00
15	0.94	1.7	e2.7	e1.2	e1.0	6.2	3.1	6.8	63	0.00	0.00	0.00
16	0.98	1.7	e2.8	e1.2	e2.0	6.6	3.3	3.9	70	0.00	0.00	0.00
17	1.00	1.7	e2.8	e1.2	e2.0	6.8	3.4	2.8	24	0.00	0.00	0.00
18	0.97	1.7	e2.7	e1.4	e2.0	10	4.3	2.8	31	0.00	0.00	0.00
19	0.93	1.6	e2.6	e1.6	e2.0	17	4.0	2.8	175	0.00	0.00	0.00
20	0.91	1.4	e2.5	e1.0	e1.8	26	4.1	3.1	39	0.00	0.00	0.00
21	0.88	1.9	e2.4	e0.55	e1.6	16	3.6	2.9	14	0.00	0.00	0.00
22	0.84	2.0	e2.3	e0.50	e1.4	21	2.5	2.9	8.9	0.00	0.00	0.00
23	e0.95	2.5	e2.2	e0.48	e1.2	6.2	2.2	5.0	6.5	0.00	0.00	0.00
24	e1.1	e3.0	e2.1	e0.46	e1.0	3.6	2.8	7.2	4.4	0.00	0.00	0.00
25	e0.96	e3.0	e2.0	e0.45	e0.50	1.9	3.3	10	3.2	0.00	0.00	0.00
26	0.91	e2.7	e1.9	e0.44	e0.50	0.97	2.4	12	2.1	0.00	0.00	0.00
27	0.95	e2.4	e1.8	e0.45	e0.50	0.67	1.7	12	2.5	0.00	0.00	0.00
28	0.98	e2.9	e1.8	e0.46	e0.50	0.75	1.8	12	2.0	0.00	0.00	0.00
29	0.87	e2.9	e1.9	e0.47	---	0.57	1.8	12	1.6	0.00	0.00	0.00
30	0.83	e2.8	e1.8	e0.48	---	1.0	12	13	2.2	0.00	0.00	0.00
31	0.77	---	e1.6	e0.50	---	2.0	---	17	---	0.00	0.00	---
TOTAL	25.39	55.65	70.1	33.64	27.75	149.86	99.6	261.7	791.4	45.39	0.00	0.00
MEAN	0.82	1.85	2.26	1.09	0.99	4.83	3.32	8.44	26.4	1.46	0.000	0.000
MAX	1.1	3.0	2.8	1.6	2.0	26	12	21	175	5.2	0.00	0.00
MIN	0.42	0.79	1.6	0.44	0.50	0.50	1.3	2.8	1.6	0.00	0.00	0.00
AC-FT	50	110	139	67	55	297	198	519	1,570	90	0.00	0.00

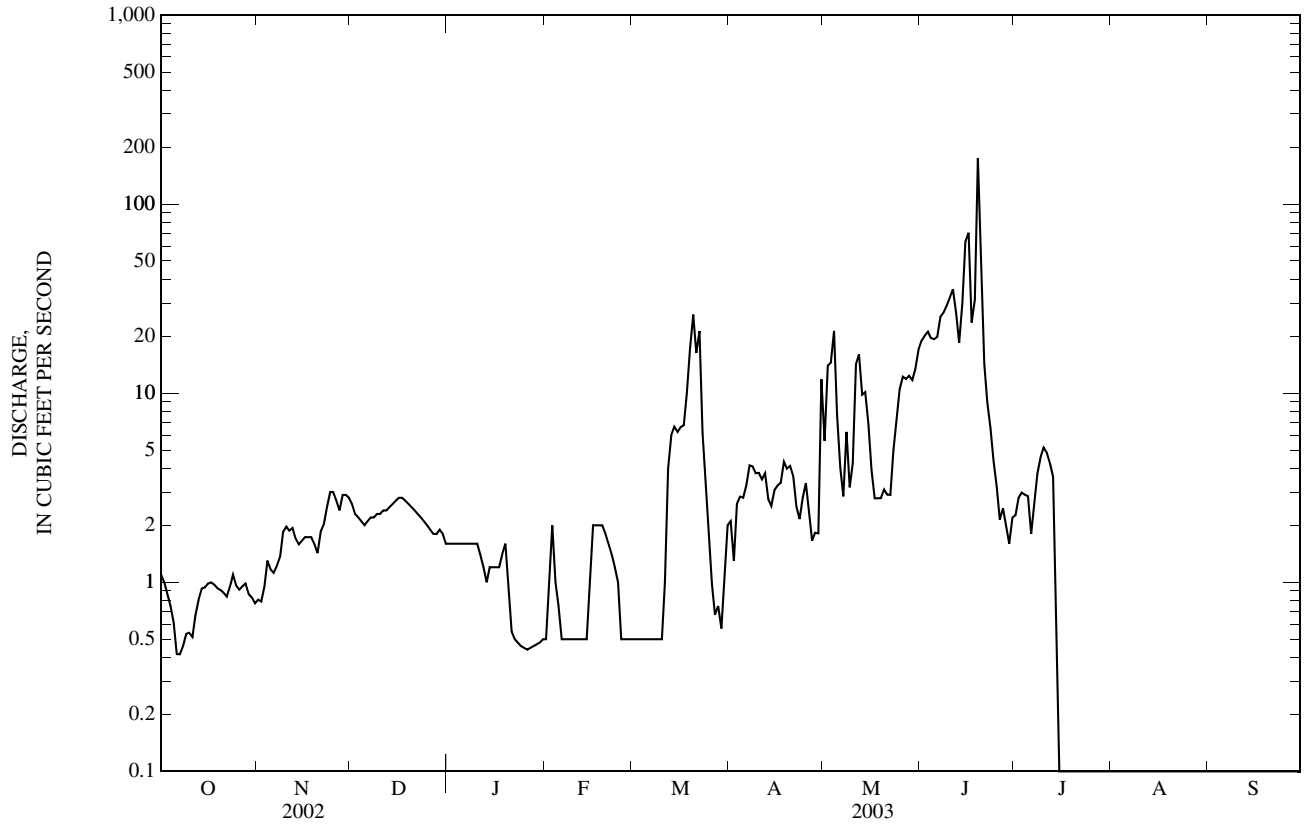
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2003, BY WATER YEAR (WY)

MEAN	1.62	2.53	1.60	2.19	5.19	22.5	28.7	45.0	67.9	18.6	6.21	2.66
MAX	19.8	68.7	16.0	25.5	52.6	150	456	444	1,223	174	68.4	70.1
(WY)	(1999)	(1999)	(1956)	(1974)	(1980)	(1993)	(2000)	(1957)	(1967)	(1951)	(1955)	(1955)
MIN	0.000	0.000	0.000	0.000	0.000	0.097	0.040	0.20	0.062	0.000	0.000	0.000
(WY)	(1954)	(1951)	(1954)	(1954)	(1954)	(1981)	(1981)	(1989)	(1980)	(1953)	(1960)	(1954)

06400000 HAT CREEK NEAR EDGEMONT, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1951 - 2003	
ANNUAL TOTAL	1,084.09		1,560.48			
ANNUAL MEAN	2.97		4.28		[a]17.1	
HIGHEST ANNUAL MEAN					112	1967
LOWEST ANNUAL MEAN					0.16	1989
HIGHEST DAILY MEAN	157	Aug 6	175	Jun 19	8,350	Jun 16, 1967
LOWEST DAILY MEAN	0.00	Jun 17	[b]0.00	Jul 15	[b]0.00	Nov 1, 1950
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 17	0.00	Jul 15	0.00	Nov 1, 1950
MAXIMUM PEAK FLOW			286	Jun 19	[c]13,300	Jun 16, 1967
MAXIMUM PEAK STAGE			10.86	Jun 19	15.40	Apr 23, 2000
ANNUAL RUNOFF (AC-FT)	2,150		3,100		12,360	
10 PERCENT EXCEEDS	4.1		12		20	
50 PERCENT EXCEEDS	1.2		1.6		0.59	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Median of annual mean discharges, 11 ft^3/s.
b No flow for many days in most years.
c Gage height, 13.35 ft, at different site, same datum.
e Estimated.



06400875 HORSEHEAD CREEK AT OELRICHS, SD

LOCATION.--Lat 43° 11'17", long 103° 13'34", in $SW^1/_4$ $SW^1/_4$ $SW^1/_4$ $SW^1/_4$ sec.7, T.10 S., R.8 E., Fall River County, Hydrologic Unit 10120106, on left bank on downstream side of bridge on Highway 18, 1.5 mi upstream from Lone Well Creek, and 0.6 mi northeast of Oelrichs.

DRAINAGE AREA.--187 mi^2.

PERIOD OF RECORD.--June 1983 to current year.

REVISED RECORDS.--WDR SD-86-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,320 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good. Diversions for irrigation of 624 acres upstream from station. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	e0.01	0.01	0.06	0.13	0.04	0.03	0.01	0.02	2.5	0.00	0.00
2	0.00	e0.01	0.01	0.06	0.09	e0.04	0.03	0.00	0.02	1.8	0.00	0.00
3	0.00	e0.01	0.01	0.05	0.05	0.04	0.03	0.07	0.02	1.4	0.00	0.00
4	0.00	0.01	0.01	0.04	0.05	e0.04	0.02	0.09	0.02	0.97	0.00	0.00
5	0.00	0.01	e0.01	0.04	0.05	0.04	0.02	0.03	0.02	0.70	0.00	0.00
6	0.00	0.01	0.01	0.03	e0.05	0.04	0.03	0.01	0.02	0.51	0.00	0.00
7	0.00	0.01	0.01	0.04	0.04	0.04	0.03	0.01	0.03	0.31	0.00	0.00
8	0.00	0.01	0.01	0.04	0.03	0.04	0.03	0.02	0.06	0.17	0.00	0.00
9	0.00	0.01	0.01	0.04	0.04	0.03	0.03	12	0.06	0.11	0.00	0.00
10	e0.00	0.01	0.01	e0.03	0.04	0.03	0.02	4.0	0.07	0.05	0.00	0.00
11	e0.00	0.00	0.01	e0.03	0.04	0.03	0.02	1.9	0.07	0.03	0.00	0.00
12	e0.00	0.00	0.01	0.03	0.05	0.03	0.02	8.7	0.08	0.02	0.00	0.00
13	e0.00	0.00	0.01	0.04	0.05	0.03	0.02	7.2	0.65	0.01	0.00	0.00
14	e0.00	0.00	0.01	0.05	0.03	0.03	0.02	7.7	127	0.01	0.00	0.00
15	e0.00	0.01	0.01	0.05	0.04	0.03	0.02	8.0	376	0.00	0.00	0.00
16	e0.00	0.00	0.01	e0.05	0.04	0.03	0.01	7.2	243	0.00	0.00	0.00
17	0.00	0.00	0.01	e0.05	0.03	0.07	0.01	5.7	123	0.00	0.00	0.00
18	0.00	0.00	0.01	0.05	0.03	0.19	0.02	3.7	75	0.00	0.00	0.00
19	0.00	0.00	0.01	0.05	0.03	0.12	0.02	2.6	56	0.00	0.00	0.00
20	0.00	0.00	0.01	0.06	0.02	0.06	0.01	1.7	43	0.00	0.00	0.00
21	0.00	0.00	0.01	0.05	0.02	0.03	0.01	1.3	34	0.00	0.00	0.00
22	0.00	0.00	0.01	0.05	0.03	0.03	0.01	0.91	31	0.00	0.00	0.00
23	e0.00	0.00	0.01	0.11	e0.03	0.10	0.01	0.52	26	0.00	0.00	0.00
24	e0.00	e0.00	0.01	0.12	e0.03	0.13	0.01	0.33	20	0.00	0.00	0.00
25	e0.00	0.00	0.01	0.12	e0.03	0.09	0.01	0.20	14	0.00	0.00	0.00
26	e0.00	0.00	0.00	0.12	e0.04	0.07	0.00	0.10	9.5	0.00	0.00	0.00
27	e0.00	0.00	0.00	0.11	e0.04	0.07	0.00	0.06	7.6	0.00	0.00	0.00
28	e0.00	0.00	0.00	0.13	0.04	0.03	0.00	0.03	6.4	0.00	0.00	0.00
29	e0.00	0.01	0.40	0.12	---	0.03	0.00	0.03	4.6	0.00	0.00	0.00
30	e0.00	e0.01	0.25	0.12	---	0.03	0.01	0.02	3.3	0.00	0.00	0.00
31	e0.00	---	0.09	0.13	---	0.03	---	0.02	---	0.00	e0.00	---
TOTAL	0.00	0.13	0.99	2.07	1.19	1.64	0.50	74.16	1,200.54	8.59	0.00	0.00
MEAN	0.000	0.004	0.032	0.067	0.043	0.053	0.017	2.39	40.0	0.28	0.000	0.000
MAX	0.00	0.01	0.40	0.13	0.13	0.19	0.03	12	376	2.5	0.00	0.00
MIN	0.00	0.00	0.00	0.03	0.02	0.03	0.00	0.00	0.02	0.00	0.00	0.00
AC-FT	0.00	0.3	2.0	4.1	2.4	3.3	1.0	147	2,380	17	0.00	0.00

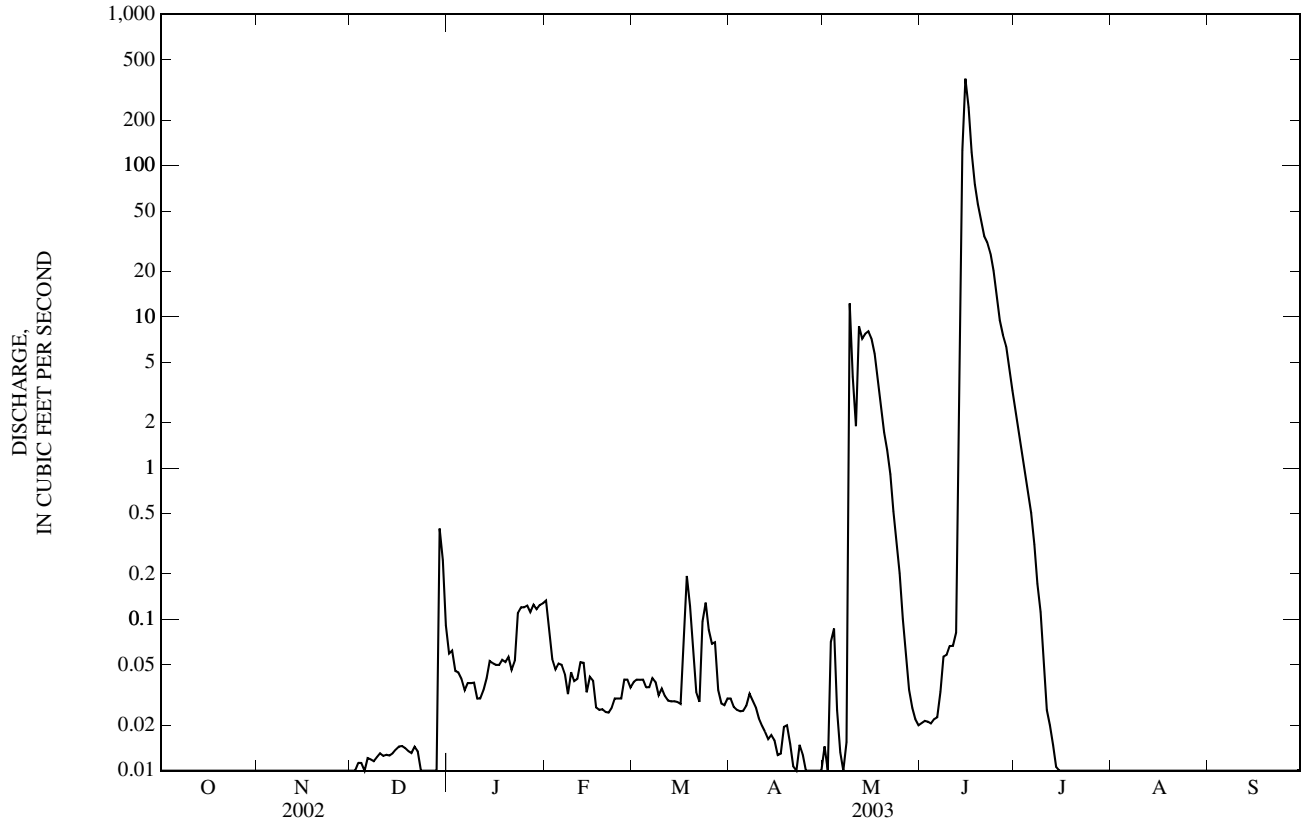
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	0.051	0.35	0.23	0.44	1.40	7.62	20.5	21.3	26.9	3.82	0.12	0.004
MAX	0.46	5.66	2.72	6.39	11.6	58.9	164	246	187	31.4	0.74	0.070
(WY)	(2000)	(1999)	(1997)	(1997)	(1994)	(1986)	(2000)	(1991)	(1986)	(1993)	(1986)	(1999)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1984)	(1984)	(1984)	(1985)	(1989)	(1989)	(1989)	(1985)	(1985)	(1985)	(1985)	(1984)

06400875 HORSEHEAD CREEK AT OELRICHS, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	76.68		1,289.81			
ANNUAL MEAN	0.21		3.53		6.88	
HIGHEST ANNUAL MEAN					29.3	1986
LOWEST ANNUAL MEAN					0.000	1990
HIGHEST DAILY MEAN	3.5	Apr 1	376	Jun 15	4,080	May 11, 1991
LOWEST DAILY MEAN	0.00	Jun 13	0.00	Oct 1	[a]0.00	Oct 1, 1983
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 13	0.00	Oct 1	0.00	Oct 1, 1983
MAXIMUM PEAK FLOW			565	Jun 14	8,270	May 11, 1991
MAXIMUM PEAK STAGE			9.15	Jun 14	18.57	May 11, 1991
ANNUAL RUNOFF (AC-FT)	152		2,560		4,980	
10 PERCENT EXCEEDS	0.61		0.67		4.2	
50 PERCENT EXCEEDS	0.01		0.01		0.02	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a No flow for many days in most years.
e Estimated.



06401000 ANGOSTURA RESERVOIR NEAR HOT SPRINGS, SD

LOCATION.--Lat 43°20'35", long 103°26'16", in $SW^1/_4$ $NW^1/_4$ sec.20, T.8 S., R.6 E., Fall River County, Hydrologic Unit 10120106, at dam on Cheyenne River, 6.5 mi southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi^2, approximately.

PERIOD OF RECORD.--October 1949 to current year (monthend contents only).

GAGE.--Water-stage recorder. Elevations listed to NGVD of 1929. Prior to Aug. 26, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by concrete gravity dam with earth embankment with gated concrete gravity spillway section. Storage began Oct. 3, 1949; dam completed December 1949. Conservation capacity, 82,400 acre-ft between elevations 3,163.0 ft and 3,187.2 ft (top of spillway gates). Inactive storage, 39,700 acre-ft between elevations 3,139.75 ft (invert of lowest outlet) and 3,163.0 ft. Dead storage below elevation 3,139.75 ft, 8,600 acre-ft. Surcharge capacity, 56,400 acre-ft between elevations 3,187.2 ft and 3,198.1 ft (maximum water surface). Figures given herein represent contents above elevation 3,139.75 ft. Water stored for irrigation.

COOPERATION.--Records of elevation, contents, and diversions to Angostura project provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 145,200 acre-ft, June 18, 1962, elevation, 3,189.00 ft; minimum observed since normal operating level reached, 45,350 acre-ft, Sept. 28, 1960, elevation, 3,162.90 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 107,100 acre-ft, June 22, elevation, 3,183.78 ft; minimum, 69,700 acre-ft, Oct. 1, elevation, 3,173.71 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	3,173.70	69,600	--
Oct. 31	3,173.87	70,200	+600
Nov. 30	3,174.55	72,400	+2,200
Dec. 31	3,175.24	74,700	+2,300
CAL YR 2002	--	--	-23,100
Jan. 31	3,175.96	77,100	+2,400
Feb. 28	3,176.76	79,900	+2,800
Mar. 31	3,181.27	96,800	+16,900
Apr. 30	3,182.13	100,300	+3,500
May 31	3,182.56	102,000	+1,700
June 30	3,183.65	106,500	+4,500
July 31	3,179.72	90,700	-15,800
Aug. 31	3,175.52	75,600	-15,100
Sept. 30	3,174.82	73,300	-2,300
WTR YR 2003	--	--	+3,700

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06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, SD

LOCATION.--Lat 43° 20'42", long 103° 26'12", in NE$^1/_4$ NW$^1/_4$ NW$^1/_4$ sec.20, T.8 S., R.6 E., Fall River County, Hydrologic Unit 10120109, on right bank 800 ft downstream from Angostura Dam, 4.8 mi upstream from Fall River, and 6.5 mi southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi^2, approximately.

PERIOD OF RECORD.--October 1945 to current year, seasonal records only beginning October 1978. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1946(M). WDR SD-78-1: 1962(M), 1967(M), 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 3,058.02 ft above NGVD of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 17, 1946, nonrecording gage and Oct. 17, 1946, to July 7, 1953, water-stage recorder at site 4.8 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Angostura Dam 800 ft upstream since October 1949. Bureau of Reclamation satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,300 ft^3/s, May 20, 1978, gage height, 15.97 ft, from rating curve extended above 12,000 ft^3/s; no flow Oct. 9, 1949, to Feb. 5, 1950, Apr. 28, Aug. 26, 30, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period February through July, 3.1 ft^3/s, Mar. 17, gage height, 3.02 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	0.54	0.54	0.58	0.98	0.75	0.74	---	---
2	---	---	---	---	0.55	0.53	0.62	0.75	0.78	0.71	---	---
3	---	---	---	---	0.46	0.56	0.60	0.74	0.79	0.71	---	---
4	---	---	---	---	0.46	0.57	0.64	0.73	0.75	0.71	---	---
5	---	---	---	---	e0.46	0.53	0.61	0.73	e0.77	0.69	---	---
6	---	---	---	---	e0.47	0.56	0.70	0.75	e0.77	0.70	---	---
7	---	---	---	---	e0.48	0.58	0.62	0.79	0.78	0.67	---	---
8	---	---	---	---	e0.50	0.61	0.57	0.96	0.77	0.66	---	---
9	---	---	---	---	e0.51	0.57	0.58	0.97	0.77	0.64	---	---
10	---	---	---	---	e0.52	0.60	0.58	0.82	0.86	0.65	---	---
11	---	---	---	---	e0.52	0.63	0.58	0.78	0.77	0.65	---	---
12	---	---	---	---	e0.53	0.65	0.58	0.78	0.76	0.66	---	---
13	---	---	---	---	e0.53	0.66	0.56	0.77	0.77	0.66	---	---
14	---	---	---	---	0.54	0.67	0.56	0.77	0.77	0.65	---	---
15	---	---	---	---	0.53	0.70	0.57	0.88	0.77	0.66	---	---
16	---	---	---	---	0.53	0.67	0.54	0.84	0.76	0.67	---	---
17	---	---	---	---	0.52	e1.3	0.57	0.78	0.76	0.67	---	---
18	---	---	---	---	0.53	1.1	e0.75	0.78	0.76	0.67	---	---
19	---	---	---	---	0.53	0.62	0.62	0.78	0.73	0.59	---	---
20	---	---	---	---	0.58	0.62	0.60	0.77	0.76	0.58	---	---
21	---	---	---	---	0.61	0.63	0.60	0.76	0.76	0.58	---	---
22	---	---	---	---	0.61	0.61	0.60	0.73	0.71	0.58	---	---
23	---	---	---	---	0.55	0.61	0.69	0.73	0.73	0.57	---	---
24	---	---	---	---	e0.55	0.58	0.72	0.73	0.76	0.52	---	---
25	---	---	---	---	e0.52	0.56	0.62	0.72	0.72	0.52	---	---
26	---	---	---	---	0.55	0.65	0.61	0.72	0.73	0.51	---	---
27	---	---	---	---	0.54	0.60	0.69	0.72	0.71	0.52	---	---
28	---	---	---	---	0.54	0.55	0.73	0.71	0.73	0.50	---	---
29	---	---	---	---	---	0.56	0.82	0.71	0.75	0.49	---	---
30	---	---	---	---	---	0.58	0.92	0.70	0.76	0.47	---	---
31	---	---	---	---	---	0.57	---	0.73	---	0.47	---	---
TOTAL	---	---	---	---	14.76	19.77	19.03	24.11	22.76	19.07	---	---
MEAN	---	---	---	---	0.53	0.64	0.63	0.78	0.76	0.62	---	---
MAX	---	---	---	---	0.61	1.3	0.92	0.98	0.86	0.74	---	---
MIN	---	---	---	---	0.46	0.53	0.54	0.70	0.71	0.47	---	---
AC-FT	---	---	---	---	29	39	38	48	45	38	---	---

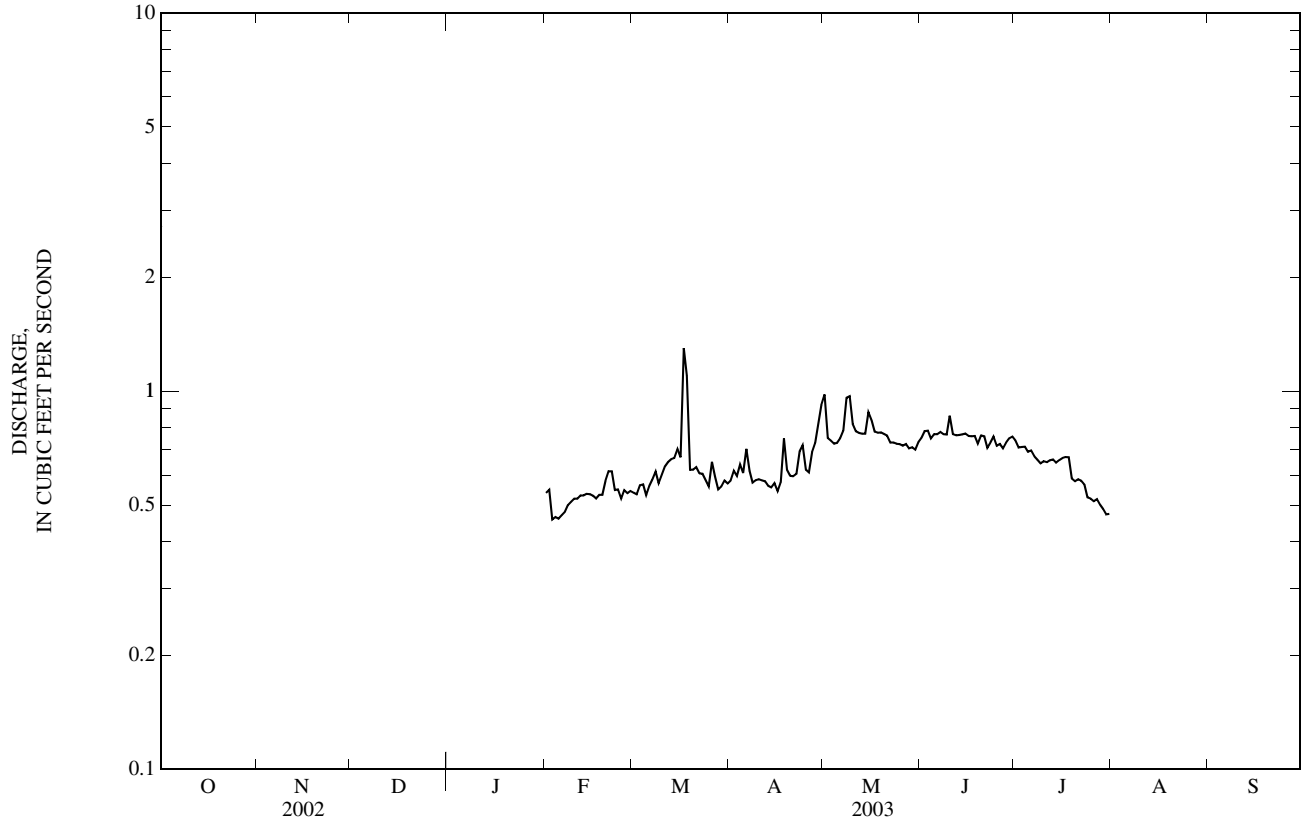
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1978, BY WATER YEAR (WY)*

MEAN	9.65	11.2	14.1	18.1	27.7	31.7	30.5	205	314	108	25.2	10.9
MAX	104	103	108	118	211	174	188	2,203	2,802	1,210	201	158
(WY)	(1953)	(1953)	(1953)	(1953)	(1974)	(1967)	(1952)	(1978)	(1962)	(1962)	(1958)	(1952)
MIN	0.81	0.79	0.75	0.84	0.66	0.82	0.87	0.42	0.78	0.89	0.70	0.70
(WY)	(1961)	(1961)	(1961)	(1961)	(1970)	(1970)	(1962)	(1951)	(1977)	(1961)	(1961)	(1960)

06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, SD—Continued

SUMMARY STATISTICS	WATER YEARS 1951 - 1978*	
ANNUAL MEAN	67.1	
HIGHEST ANNUAL MEAN	404	1962
LOWEST ANNUAL MEAN	0.83	1961
HIGHEST DAILY MEAN	20,600	Jun 18, 1962
LOWEST DAILY MEAN	0.00	Apr 28, 1951
ANNUAL SEVEN-DAY MINIMUM	0.20	Apr 26, 1951
MAXIMUM PEAK FLOW	30,300	May 20, 1978
MAXIMUM PEAK STAGE	15.97	May 20, 1978
ANNUAL RUNOFF (AC-FT)	48,630	
10 PERCENT EXCEEDS	107	
50 PERCENT EXCEEDS	1.4	
90 PERCENT EXCEEDS	0.91	

* Period reflects regulated and complete water years.
e Estimated.



06402000 FALL RIVER AT HOT SPRINGS, SD

LOCATION.--Lat 43° 25'50", long 103° 28'33", in $NW^1/_4$ $NW^1/_4$ sec.24, T.7 S., R.5 E., Fall River County, Hydrologic Unit 10120109, on left bank at intersection of River Street and University Avenue in Hot Springs, and 6.0 mi upstream from mouth.

DRAINAGE AREA.--137 mi^2.

PERIOD OF RECORD.--October 1937 to current year (monthly discharge only for October 1937, published in WSP 1309). Daily discharge November 1937 to September 2001, stage only October 2001 to current year.

REVISED RECORDS.--WSP 1279: 1938, 1941(M), 1947(M). WSP 1729: 1959(M).

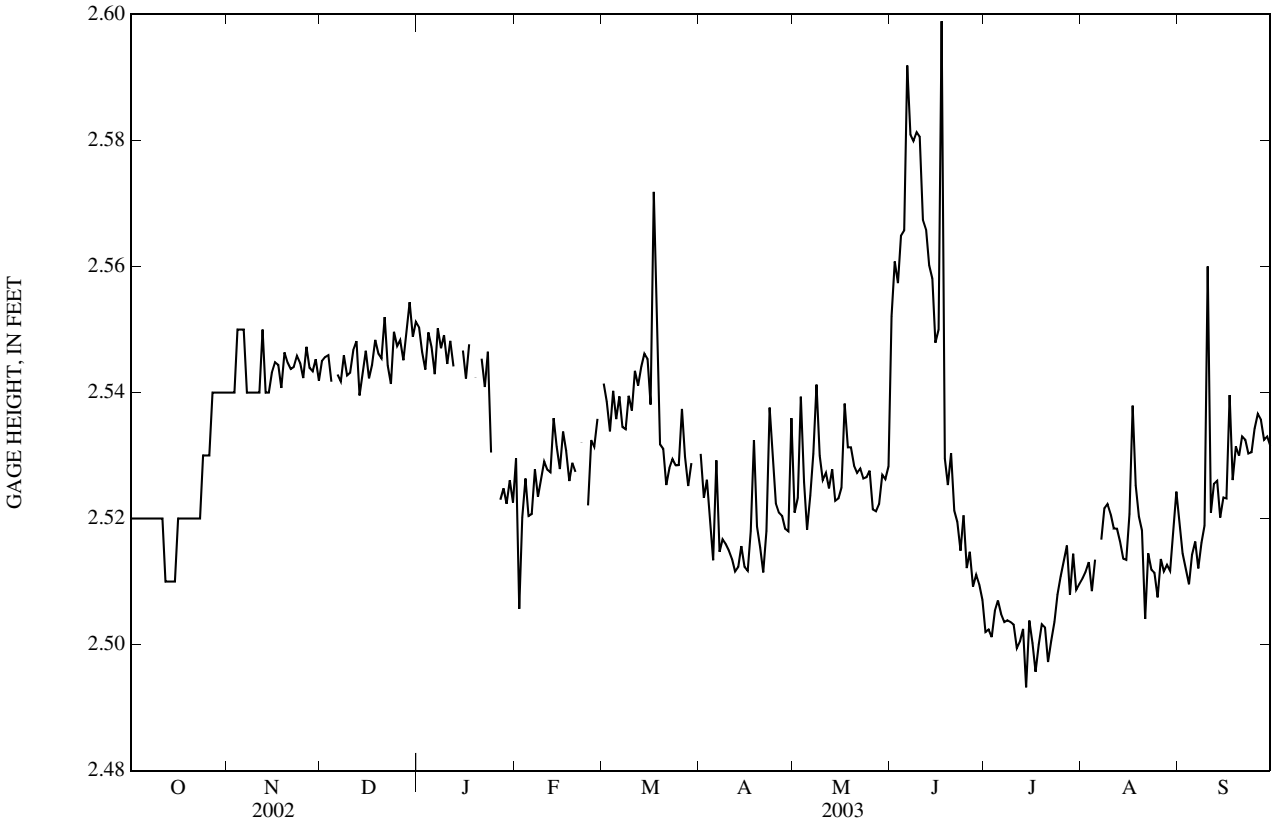
GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3,413.20 ft above NGVD of 1929. Prior to June 2, 1939, nonrecording gage at site 300 ft upstream at datum 3.00 ft higher.

REMARKS.--Records good. Flow regulated by dam forming Coldbrook Reservoir, capacity, 7,200 acre-ft, since September 1952, and dam forming Cottonwood Springs Lake, capacity, 8,385 acre-ft since June 1969. Some diversions above station for municipal supply of Hot Springs. U.S. Army Corps of Engineers satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.52	2.54	2.54	2.55	2.53	2.54	2.53	2.52	2.55	2.50	2.51	2.52
2	2.52	2.54	2.55	2.55	2.51	2.54	2.52	2.52	2.56	2.50	2.51	2.51
3	2.52	2.54	2.55	2.54	2.52	2.53	2.53	2.54	2.56	2.50	2.51	2.51
4	2.52	2.55	2.54	2.55	2.53	2.54	2.52	2.53	2.56	2.51	2.51	2.51
5	2.52	2.55	---	2.55	2.52	2.54	2.51	2.52	2.57	2.51	2.51	2.51
6	2.52	2.55	2.54	2.54	2.52	2.54	2.53	2.52	2.59	2.50	---	2.52
7	2.52	2.54	2.54	2.55	2.53	2.53	2.51	2.53	2.58	2.50	2.52	2.51
8	2.52	2.54	2.55	2.55	2.52	2.53	2.52	2.54	2.58	2.50	2.52	2.52
9	2.52	2.54	2.54	2.55	2.53	2.54	2.52	2.53	2.58	2.50	2.52	2.52
10	2.52	2.54	2.54	2.54	2.53	2.54	2.51	2.53	2.58	2.50	2.52	2.56
11	2.52	2.54	2.55	2.55	2.53	2.54	2.51	2.53	2.57	2.50	2.52	2.52
12	2.51	2.55	2.55	2.54	2.53	2.54	2.51	2.52	2.57	2.50	2.52	2.53
13	2.51	2.54	2.54	---	2.54	2.54	2.51	2.53	2.56	2.50	2.52	2.53
14	2.51	2.54	2.54	---	2.53	2.55	2.52	2.52	2.56	2.49	2.51	2.52
15	2.51	2.54	2.55	2.55	2.53	2.55	2.51	2.52	2.55	2.50	2.51	2.52
16	2.52	2.54	2.54	2.54	2.53	2.54	2.51	2.52	2.55	2.50	2.52	2.52
17	2.52	2.54	2.54	2.55	2.53	2.57	2.52	2.54	2.60	2.50	2.54	2.54
18	2.52	2.54	2.55	---	2.53	2.55	2.53	2.53	2.53	2.50	2.53	2.53
19	2.52	2.55	2.55	2.54	2.53	2.53	2.52	2.53	2.53	2.50	2.52	2.53
20	2.52	2.54	2.55	---	2.53	2.53	2.52	2.53	2.53	2.50	2.52	2.53
21	2.52	2.54	2.55	2.55	---	2.53	2.51	2.53	2.52	2.50	2.50	2.53
22	2.52	2.54	2.54	2.54	2.53	2.53	2.52	2.53	2.52	2.50	2.51	2.53
23	2.52	2.55	2.54	2.55	---	2.53	2.54	2.53	2.51	2.50	2.51	2.53
24	2.53	2.54	2.55	2.53	2.52	2.53	2.53	2.53	2.52	2.51	2.51	2.53
25	2.53	2.54	2.55	---	2.53	2.53	2.52	2.53	2.51	2.51	2.51	2.53
26	2.53	2.55	2.55	---	2.53	2.54	2.52	2.52	2.51	2.51	2.51	2.54
27	2.54	2.54	2.55	2.52	2.54	2.53	2.52	2.52	2.51	2.52	2.51	2.54
28	2.54	2.54	2.55	2.52	---	2.53	2.52	2.52	2.51	2.51	2.51	2.53
29	2.54	2.55	2.55	2.52	---	2.53	2.52	2.53	2.51	2.51	2.51	2.53
30	2.54	2.54	2.55	2.53	---	---	2.54	2.53	2.51	2.51	2.52	2.53
31	2.54	---	2.55	2.52	---	---	---	2.53	---	2.51	2.52	---
MEAN	2.52	2.54	---	---	---	---	2.52	2.53	2.55	2.50	---	2.53
MAX	2.54	2.55	---	---	---	---	2.54	2.54	2.60	2.52	---	2.56
MIN	2.51	2.54	---	---	---	---	2.51	2.52	2.51	2.49	---	2.51

06402000 FALL RIVER AT HOT SPRINGS, SD—Continued



06402430 BEAVER CREEK NEAR PRINGLE, SD

LOCATION.--Lat 43° 34'53", long 103° 28'34", in NE$^1/_4$ SW$^1/_4$ SW$^1/_4$ sec.25, T.5 S., R.5 E., Custer County, Hydrologic Unit 10120109, on right bank 2.0 mi north of Wind Cave National Park Headquarters.

DRAINAGE AREA.--45.8 mi^2.

PERIOD OF RECORD.--October 1990 to current year. Partial monthly discharge October 1990.

GAGE.--Water-stage recorder. Datum of gage is 4,180 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good. Minor diversions for irrigation of hay meadows and domestic use may occur upstream of the gage. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.83	e0.69	0.80	0.74	0.92	0.75	0.69	2.9	0.91	0.71	0.58	0.52
2	0.84	e0.69	0.76	0.73	0.89	0.77	0.70	2.3	0.93	0.73	0.65	0.38
3	0.87	0.69	0.74	0.76	0.67	0.80	0.73	1.7	0.86	0.49	0.64	0.39
4	0.86	0.73	0.67	0.81	0.65	0.79	0.74	1.5	0.75	0.44	0.93	0.39
5	0.79	0.73	0.59	0.83	0.62	0.77	0.73	1.2	0.79	0.42	1.1	0.39
6	0.73	0.73	0.83	0.83	0.61	e0.75	0.76	1.1	0.77	0.40	0.84	0.41
7	0.70	0.73	0.78	0.82	0.61	e0.73	0.76	1.1	0.85	0.43	0.96	0.39
8	0.74	0.71	0.70	0.78	0.78	e0.71	0.76	2.0	0.77	0.47	1.3	0.46
9	0.81	0.74	0.70	0.73	0.73	e0.70	0.73	2.5	0.70	0.54	1.3	0.49
10	0.73	0.74	0.72	0.53	0.74	e0.68	0.71	2.0	0.67	0.64	1.5	1.0
11	0.74	0.74	0.74	0.60	0.73	e0.70	0.70	1.6	0.66	0.68	1.2	0.60
12	0.80	0.76	0.69	0.56	0.75	0.98	0.70	1.4	0.63	0.51	1.3	0.44
13	0.79	0.74	0.68	0.63	0.77	0.98	0.70	1.3	0.65	0.42	1.4	0.46
14	0.91	0.71	0.72	e0.63	0.78	0.92	0.70	1.2	0.60	0.38	0.92	0.38
15	0.92	0.73	0.82	e0.55	0.74	0.81	0.72	1.1	0.54	0.34	1.3	0.39
16	0.97	0.74	0.76	e0.55	0.75	0.77	0.73	1.1	0.51	0.44	0.36	0.38
17	0.96	0.74	0.76	e0.55	0.80	1.0	0.75	0.95	0.76	0.77	0.94	0.52
18	0.96	0.75	0.74	e0.60	0.67	1.7	1.3	0.92	0.64	0.97	2.7	0.49
19	0.96	0.74	0.70	e0.66	0.66	1.5	1.2	0.98	0.57	0.45	0.69	0.42
20	0.96	0.74	0.65	e0.75	0.66	1.1	0.88	0.87	0.68	0.37	0.51	0.42
21	0.99	0.78	0.65	0.77	0.68	0.89	0.83	0.87	0.69	0.37	0.56	0.43
22	e0.96	0.84	0.50	0.74	0.63	0.84	0.76	0.82	0.67	0.51	0.51	0.43
23	e0.95	0.94	0.41	0.73	0.56	0.82	1.1	0.80	0.70	0.45	0.42	0.40
24	e0.95	0.86	0.43	0.76	e0.55	0.80	2.5	0.79	0.91	0.39	0.52	0.29
25	0.96	0.62	0.38	0.75	e0.50	0.76	1.6	0.76	0.79	0.38	0.50	0.29
26	0.81	0.65	0.34	0.74	e0.57	0.82	1.1	0.78	0.75	0.42	0.50	0.28
27	0.84	0.66	0.40	0.79	e0.65	0.90	0.99	0.80	0.59	0.37	0.46	0.29
28	0.84	0.83	0.48	0.84	0.75	0.80	1.2	0.77	0.51	0.34	0.39	0.30
29	0.73	0.94	0.61	0.77	---	0.78	1.1	0.62	0.42	0.37	0.45	0.34
30	0.69	0.66	0.68	0.75	---	0.82	1.8	0.57	0.39	0.42	0.50	0.38
31	e0.69	---	0.71	0.76	---	0.71	---	0.72	---	0.60	0.56	---
TOTAL	26.28	22.35	20.14	22.04	19.42	26.85	28.67	38.02	20.66	15.22	26.49	12.75
MEAN	0.85	0.74	0.65	0.71	0.69	0.87	0.96	1.23	0.69	0.49	0.85	0.42
MAX	0.99	0.94	0.83	0.84	0.92	1.7	2.5	2.9	0.93	0.97	2.7	1.0
MIN	0.69	0.62	0.34	0.53	0.50	0.68	0.69	0.57	0.39	0.34	0.36	0.28
AC-FT	52	44	40	44	39	53	57	75	41	30	53	25

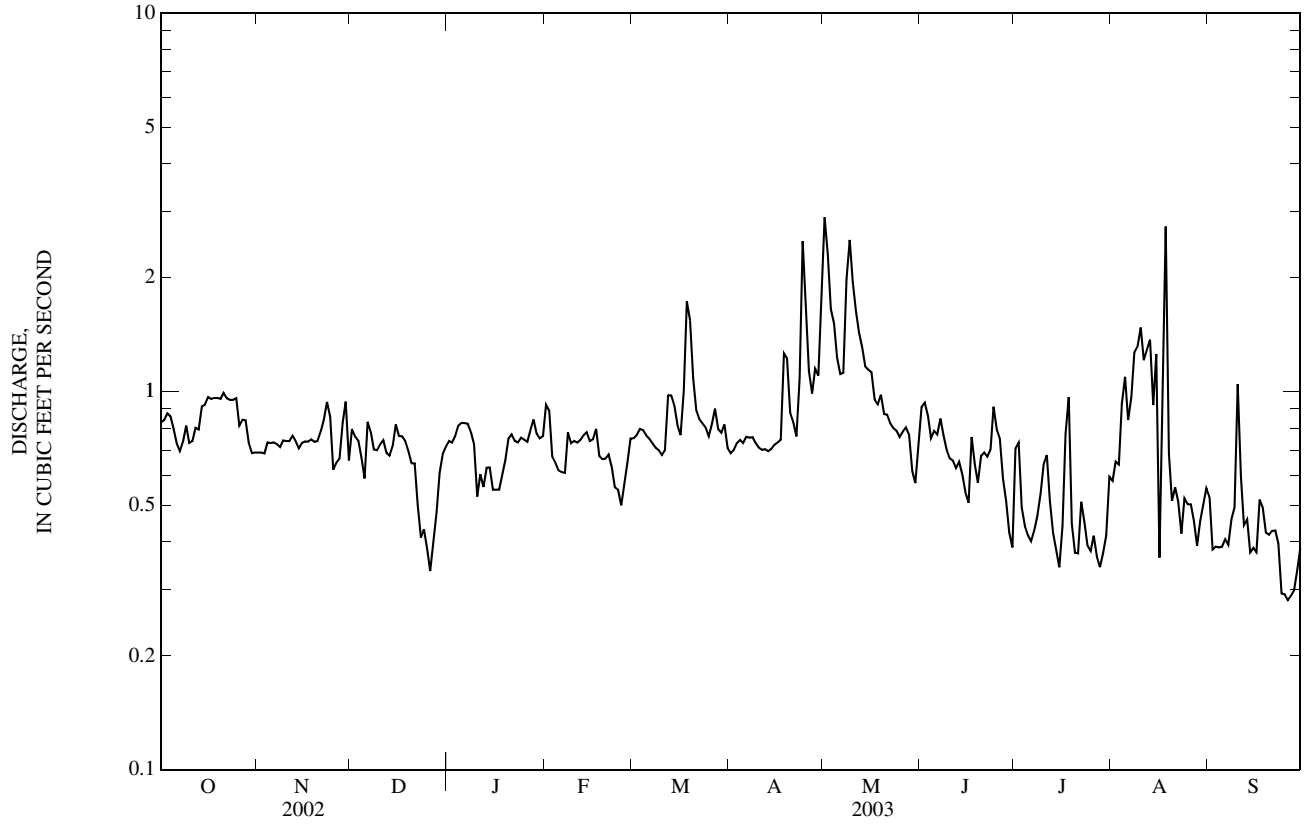
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

MEAN	2.30	2.44	1.97	1.62	1.64	2.57	3.13	4.92	7.23	4.70	3.17	2.45
MAX	5.78	6.90	5.35	4.19	3.81	4.72	8.24	16.2	35.8	16.8	12.0	7.69
(WY)	(2000)	(1999)	(1999)	(1999)	(1997)	(1997)	(1999)	(1999)	(1995)	(1999)	(1999)	(1999)
MIN	0.095	0.21	0.22	0.14	0.25	0.45	0.39	0.54	0.59	0.49	0.23	0.18
(WY)	(1992)	(1992)	(1993)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(2002)	(1992)	(1992)

06402430 BEAVER CREEK NEAR PRINGLE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	301.80		278.89			
ANNUAL MEAN	0.83		0.76		[a]3.18	
HIGHEST ANNUAL MEAN					8.93	1999
LOWEST ANNUAL MEAN					0.32	1992
HIGHEST DAILY MEAN	2.3	May 11	2.9	May 1	85	Jun 10, 1995
LOWEST DAILY MEAN	0.33	Jan 1	0.28	Sep 26	0.06	Oct 1, 1991
ANNUAL SEVEN-DAY MINIMUM	0.38	Jul 13	0.31	Sep 24	0.07	Oct 1, 1991
MAXIMUM PEAK FLOW			8.5	Aug 18	90	Jun 10, 1995
MAXIMUM PEAK STAGE			8.29	Aug 18	9.17	Jun 10, 1995
ANNUAL RUNOFF (AC-FT)	599		553		2,310	
10 PERCENT EXCEEDS	1.2		1.1		6.8	
50 PERCENT EXCEEDS	0.78		0.73		1.5	
90 PERCENT EXCEEDS	0.43		0.42		0.39	

a Median of annual mean discharges, 2.4 ft^3/s.
e Estimated.



06402500 BEAVER CREEK NEAR BUFFALO GAP, SD

LOCATION.--Lat 43° 28'00", long 103° 18'20", in NE$^1/_4$ SE$^1/_4$ sec.5, T.7 S., R.7 E., Fall River County, Hydrologic Unit 10120109, on left bank 1.5 mi south of Buffalo Gap and 4.5 mi upstream from mouth.

DRAINAGE AREA.--130 mi^2, approximately.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October, November, 1957, published in WSP 1309.

REVISED RECORDS.--WSP 956: 1941. WSP 1309: 1939-40(M), 1947(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,150 ft above NGVD of 1929, from topographic map. Prior to June 20, 1939, nonrecording gage at site 0.8 mi downstream at different datum.

REMARKS.--Records good. Nearly all flow is diverted above station during irrigation season. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1927 reached a stage of 18.0 ft, former site and datum, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	9.2	9.2	8.9	9.3	9.3	8.8	6.9	5.3	6.7	2.1	2.7
2	4.1	9.1	9.2	8.9	9.4	9.3	8.9	6.2	4.5	6.0	0.91	2.5
3	4.4	9.1	9.3	8.9	9.2	e9.4	8.9	6.4	4.8	5.6	1.1	1.5
4	4.4	9.1	9.2	9.0	9.2	9.4	9.0	6.5	4.9	5.6	3.5	1.8
5	4.7	9.2	e9.0	9.0	9.2	9.4	8.9	6.2	5.1	5.7	2.7	2.5
6	4.8	9.2	9.3	9.0	8.9	9.4	9.2	6.1	6.5	5.8	1.2	2.8
7	4.5	9.2	9.2	8.9	e8.8	e9.4	9.1	6.1	6.5	5.5	1.0	2.3
8	4.3	9.1	9.2	8.9	9.1	e9.4	8.8	6.9	6.2	3.7	1.3	2.9
9	4.5	9.1	9.2	8.9	9.1	e9.4	8.7	6.8	6.2	3.7	1.3	2.1
10	4.7	9.1	9.2	9.1	9.1	9.6	8.7	6.4	6.2	3.9	0.67	4.5
11	4.8	9.1	9.1	e9.0	9.0	9.5	8.7	6.2	6.0	4.4	1.1	3.8
12	6.0	9.1	9.1	9.1	9.0	9.3	8.2	6.1	4.7	4.5	0.85	4.2
13	6.4	9.1	9.1	9.1	9.0	9.4	6.4	6.3	5.4	3.8	1.2	4.3
14	6.6	9.2	9.1	9.0	e9.0	9.4	6.3	6.2	4.6	2.2	1.8	4.1
15	6.7	9.2	9.2	9.1	9.0	9.1	6.5	6.3	4.1	1.9	1.6	4.1
16	6.8	9.2	9.1	9.2	9.0	9.2	6.6	6.3	4.2	1.9	2.8	5.3
17	6.8	9.2	9.2	e9.0	9.1	9.4	6.8	6.5	6.2	1.6	1.4	8.3
18	6.3	9.1	9.1	9.1	9.0	10	7.5	6.8	6.2	2.2	2.6	8.6
19	6.6	9.2	9.2	9.0	9.0	9.7	6.9	6.8	6.0	2.4	3.5	8.2
20	6.7	9.2	9.2	9.0	9.0	9.3	6.5	7.0	6.0	1.9	3.0	8.1
21	6.7	9.1	9.1	9.1	8.8	9.3	6.5	6.4	6.0	2.2	0.83	8.1
22	6.8	9.1	9.1	11	e8.8	9.3	6.5	5.3	7.4	1.6	1.3	8.1
23	7.1	9.1	e9.0	14	e8.7	9.5	6.9	5.1	8.0	1.3	1.3	8.0
24	7.1	9.3	e8.5	11	e8.5	9.1	7.2	5.1	8.3	1.0	1.2	7.9
25	7.2	9.2	e8.5	9.2	e8.4	9.0	7.0	5.2	7.8	1.1	1.3	7.9
26	7.1	9.2	e9.0	11	e8.4	9.1	6.4	5.5	7.0	2.1	1.2	7.9
27	7.3	9.2	9.3	9.6	e8.7	9.1	6.1	6.6	7.9	1.8	1.2	7.8
28	7.8	9.4	9.0	9.6	e9.0	8.9	6.1	6.3	7.7	2.2	1.2	7.9
29	9.0	9.2	9.1	9.3	---	8.8	6.1	4.5	8.0	2.4	1.5	8.1
30	9.0	9.1	8.8	9.3	---	8.9	6.9	4.1	7.4	2.3	1.8	8.1
31	9.1	---	8.8	9.3	---	9.0	---	5.3	---	2.1	2.2	---
TOTAL	193.3	274.9	281.6	292.5	250.7	288.3	225.1	188.4	185.1	99.1	50.66	164.4
MEAN	6.24	9.16	9.08	9.44	8.95	9.30	7.50	6.08	6.17	3.20	1.63	5.48
MAX	9.1	9.4	9.3	14	9.4	10	9.2	7.0	8.3	6.7	3.5	8.6
MIN	4.1	9.1	8.5	8.9	8.4	8.8	6.1	4.1	4.1	1.0	0.67	1.5
AC-FT	383	545	559	580	497	572	446	374	367	197	100	326

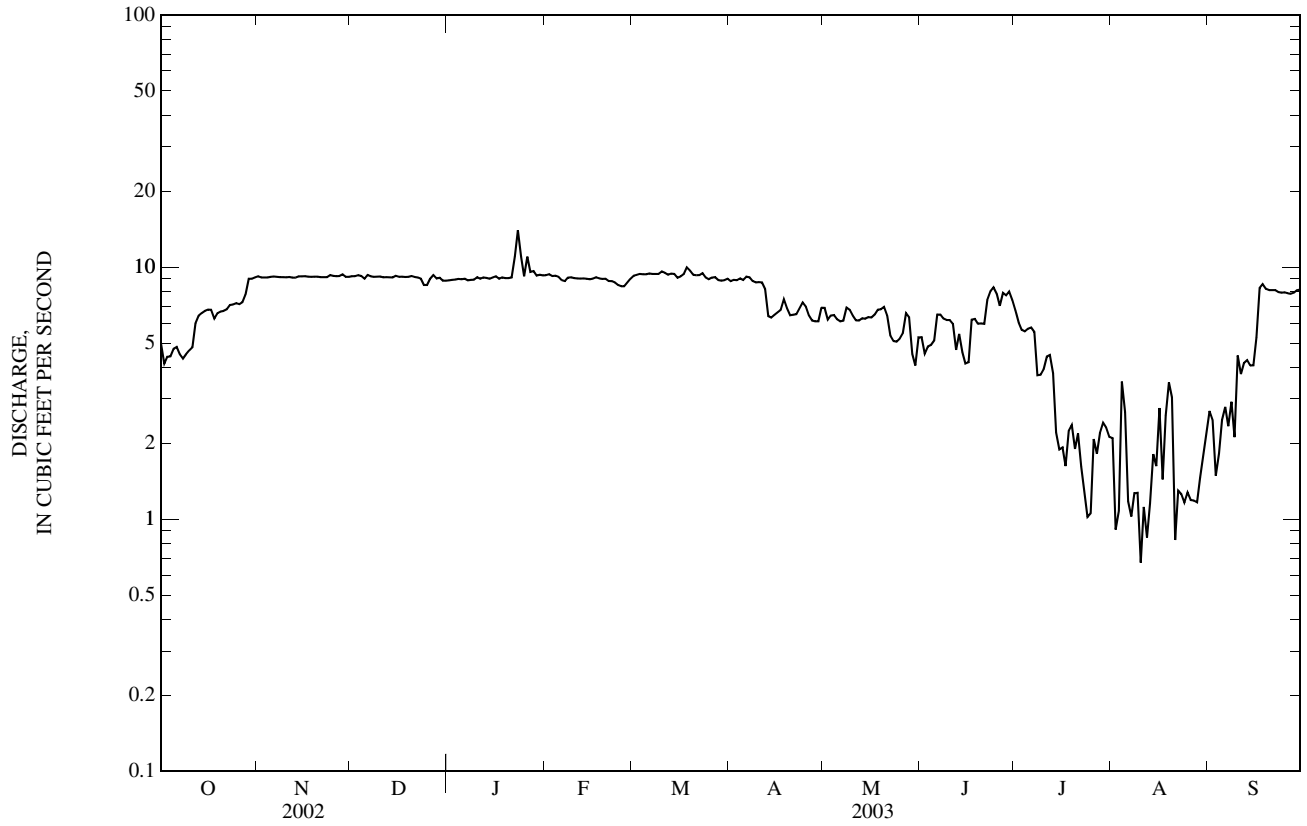
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

MEAN	7.40	9.09	9.68	9.90	9.91	9.26	6.82	5.16	7.66	5.58	4.18	5.56
MAX	16.0	19.9	19.3	18.4	15.1	16.1	16.9	21.7	43.4	32.4	22.3	15.4
(WY)	(1999)	(1999)	(1999)	(1999)	(1999)	(1978)	(1941)	(1999)	(1999)	(1999)	(1999)	(1999)
MIN	0.67	3.40	5.96	7.08	7.00	4.34	0.79	0.61	0.39	0.24	0.25	0.37
(WY)	(1961)	(1950)	(1991)	(2002)	(1942)	(1961)	(1967)	(1960)	(1974)	(1953)	(1961)	(1960)

06402500 BEAVER CREEK NEAR BUFFALO GAP, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	2,196.67		2,494.06			
ANNUAL MEAN	6.02		6.83		7.50	
HIGHEST ANNUAL MEAN					21.2	1999
LOWEST ANNUAL MEAN					3.78	1961
HIGHEST DAILY MEAN	9.6	Mar 13	14	Jan 23	313	Aug 10, 1955
LOWEST DAILY MEAN	0.35	Jul 27	0.67	Aug 10	[a]0.00	Jul 29, 1952
ANNUAL SEVEN-DAY MINIMUM	0.53	Jul 14	1.1	Aug 6	0.06	Jul 28, 1952
MAXIMUM PEAK FLOW			21	Jan 23	[b]11,700	Sep 4, 1938
MAXIMUM PEAK STAGE			4.29	Jan 23	[c]16.46	Sep 4, 1938
ANNUAL RUNOFF (AC-FT)	4,360		4,950		5,430	
10 PERCENT EXCEEDS	9.3		9.3		12	
50 PERCENT EXCEEDS	6.8		7.9		8.0	
90 PERCENT EXCEEDS	1.1		2.1		0.74	

a No flow at times in some years.
b From rating curve extended above 11 ft^3/s on basis of slope-area measurement.
c Site and datum then in use.
e Estimated.



06403300 FRENCH CREEK ABOVE FAIRBURN, SD

LOCATION.--Lat 43° 43'02", long 103° 22'03", in $SW^1/_4$ $SW^1/_4$ $NE^1/_4$ sec.11, T.4 S., R.6 E., Custer County, Hydrologic Unit 10120109, on right bank 500 ft upstream from concrete diversion dam, 1.0 mi southwest of landing strip in Custer State Park, 1.5 mi west of east boundary of Custer State Park, 2.6 mi southwest of abandoned Fairview School, and 3.5 mi southeast of Custer State Park Headquarters.

DRAINAGE AREA.--105 mi^2, approximately.

PERIOD OF RECORD.--April 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,850 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Stockade Reservoir, capacity, 1,820 acre-ft, 12 mi upstream. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	e1.6	e2.5	5.0	e1.6	e1.3	6.0	25	7.0	6.7	1.6	1.2
2	1.8	e1.6	e2.4	6.2	e1.6	e1.3	6.2	30	8.6	6.6	1.6	1.1
3	1.8	e1.5	e2.3	6.3	e1.6	e1.3	6.4	28	11	5.6	1.6	1.1
4	1.9	e1.5	e2.2	5.7	e1.6	e1.3	7.3	26	9.7	4.8	1.5	1.1
5	2.2	e2.0	e2.1	4.6	e1.5	e1.3	9.1	23	8.6	4.3	1.5	0.95
6	1.9	e2.6	e2.0	4.0	e1.5	e1.3	9.8	20	7.5	4.2	1.3	0.88
7	2.0	3.2	e2.5	3.8	e1.5	e1.3	8.8	17	7.3	3.3	1.3	0.83
8	2.0	3.2	e3.0	e3.7	e1.5	e1.3	8.6	20	7.6	3.2	1.7	0.88
9	2.0	3.0	4.0	e3.5	e1.5	e1.3	7.9	28	8.2	2.7	1.5	0.91
10	2.0	3.0	3.9	e3.0	e1.5	e1.3	8.4	25	7.7	2.3	1.6	2.3
11	2.1	3.1	3.7	e2.9	e1.5	e1.4	10	23	7.2	2.0	4.9	2.1
12	2.3	3.1	3.4	e2.6	e1.5	e1.6	11	20	7.5	1.9	4.6	2.0
13	2.4	3.2	3.3	e2.5	e1.5	e6.0	10	17	9.5	1.7	2.9	2.0
14	2.4	3.0	3.1	e2.3	e1.5	e22	9.3	15	15	1.5	2.2	1.7
15	2.3	3.0	3.2	e2.0	e1.5	e26	8.3	14	20	1.4	1.7	1.5
16	2.2	3.0	3.4	e1.9	e1.6	28	8.1	13	15	1.4	1.4	1.4
17	2.4	3.0	3.6	e1.8	e1.6	19	7.9	12	15	1.7	1.2	1.4
18	2.3	3.0	5.1	e1.7	e1.7	20	9.0	12	18	3.2	2.2	1.7
19	2.2	3.0	e5.2	e1.7	e1.7	40	12	12	17	3.9	3.3	1.7
20	2.1	3.1	e5.8	e1.6	e1.6	29	12	11	14	2.7	2.4	1.6
21	2.2	3.2	3.5	e1.6	e1.6	21	9.8	9.9	12	2.1	1.9	1.6
22	e2.1	3.3	2.9	e1.5	e1.5	15	8.5	8.9	11	1.9	1.6	1.6
23	e2.0	3.3	e2.9	e1.5	e1.5	13	8.8	9.1	9.7	1.8	1.3	1.5
24	e2.0	3.2	e2.9	e1.5	e1.4	12	16	9.1	8.7	1.7	1.3	1.5
25	e1.9	e3.1	e2.8	e1.4	e1.4	11	22	8.9	10	1.5	1.3	1.4
26	e1.9	e3.0	e2.8	e1.4	e1.3	9.9	19	8.3	10	1.4	1.2	1.3
27	e1.8	e2.9	e2.8	e1.8	e1.3	9.4	15	7.9	9.3	1.4	1.1	1.2
28	e1.8	e2.8	e3.3	e1.7	e1.3	9.7	13	7.9	7.9	1.3	1.0	1.2
29	e1.7	e2.7	e3.8	e1.7	---	7.8	13	7.6	7.3	1.5	0.97	1.2
30	e1.7	e2.6	e4.1	e1.7	---	7.0	15	6.9	7.1	1.7	1.1	1.3
31	e1.7	---	4.8	e1.7	---	6.0	---	6.7	---	1.8	1.2	---
TOTAL	62.9	83.8	103.3	84.3	42.4	327.8	316.2	482.2	314.4	83.2	55.97	42.15
MEAN	2.03	2.79	3.33	2.72	1.51	10.6	10.5	15.6	10.5	2.68	1.81	1.41
MAX	2.4	3.3	5.8	6.3	1.7	40	22	30	20	6.7	4.9	2.3
MIN	1.7	1.5	2.0	1.4	1.3	1.3	6.0	6.7	7.0	1.3	0.97	0.83
AC-FT	125	166	205	167	84	650	627	956	624	165	111	84

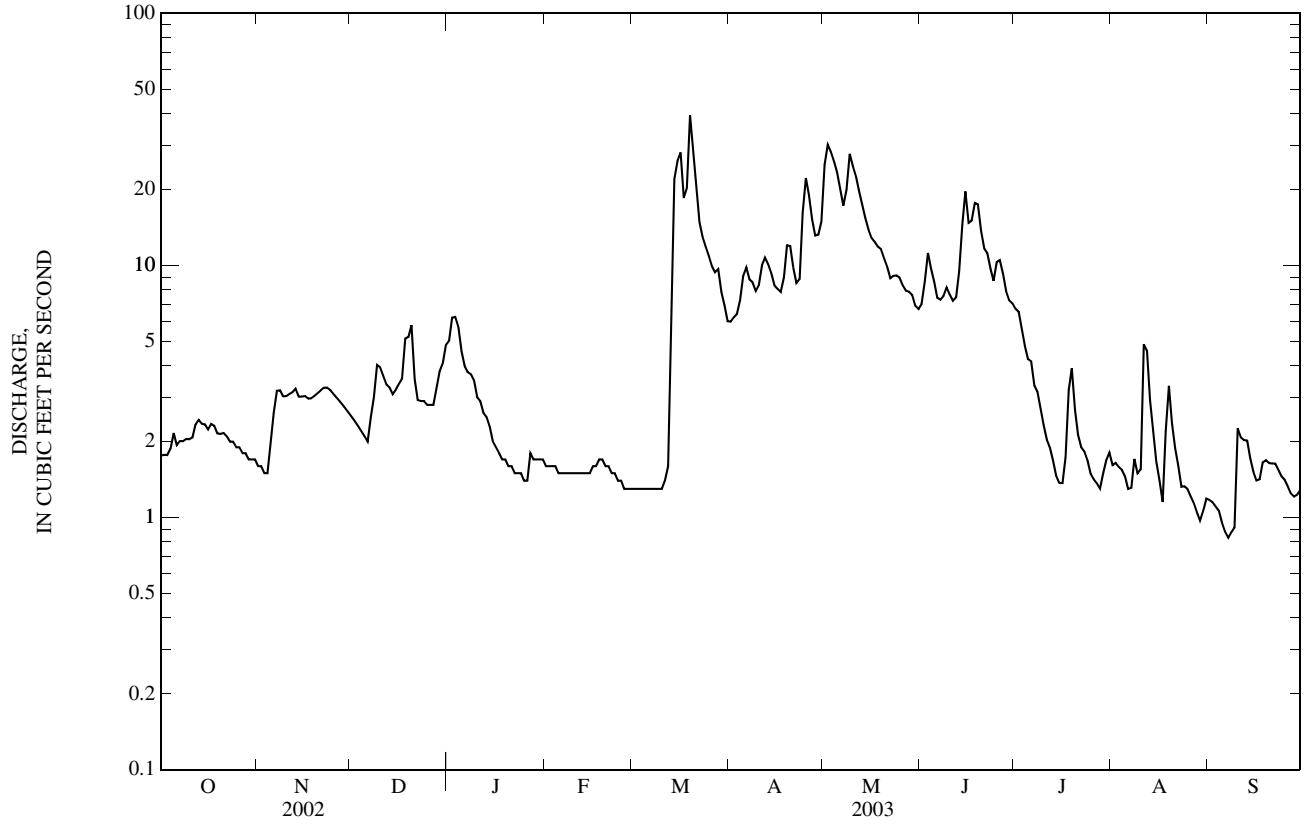
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

MEAN	6.96	7.34	4.37	3.98	4.52	10.8	13.4	27.6	29.7	13.1	9.47	5.41
MAX	24.8	46.0	24.5	15.0	17.8	24.8	45.4	147	143	46.4	42.7	17.3
(WY)	(1999)	(1999)	(1999)	(1999)	(1999)	(1987)	(1999)	(1995)	(1995)	(1995)	(1997)	(1999)
MIN	0.84	1.07	0.69	0.39	0.19	1.55	1.63	1.00	0.46	0.44	0.53	0.65
(WY)	(1988)	(1986)	(1990)	(1989)	(1989)	(2002)	(1989)	(1989)	(1989)	(1985)	(1985)	(1987)

06403300 FRENCH CREEK ABOVE FAIRBURN, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	1,689.61		1,998.62			
ANNUAL MEAN	4.63		5.48		[a]11.4	
HIGHEST ANNUAL MEAN					34.7	1995
LOWEST ANNUAL MEAN					1.01	1989
HIGHEST DAILY MEAN	29	Apr 9	40	Mar 19	536	May 8, 1995
LOWEST DAILY MEAN	0.72	Aug 20	0.83	Sep 7	[b]0.02	Feb 3, 1989
ANNUAL SEVEN-DAY MINIMUM	0.87	Aug 15	0.95	Sep 3	0.03	Feb 2, 1989
MAXIMUM PEAK FLOW			47	Mar 19	[c]1,060	May 8, 1995
MAXIMUM PEAK STAGE			1.43	Mar 19	[d]4.08	May 8, 1995
ANNUAL RUNOFF (AC-FT)	3,350		3,960		8,270	
10 PERCENT EXCEEDS	12		13		25	
50 PERCENT EXCEEDS	2.8		2.7		5.1	
90 PERCENT EXCEEDS	1.0		1.3		0.91	

a Median of annual mean discharges, 7.6 ft^3/s.
b Also Feb. 4, 5, 1989.
c Peak flow determined from slope-area measurement.
d From floodmarks.
e Estimated.



06403700 CHEYENNE RIVER AT REDSHIRT, SD

LOCATION.--Lat 43° 40'23", long 102° 53'36", in $SW^1/_4$ $SE^1/_4$ $NW^1/_4$ sec.26, T.4 S., R.10 E., Custer County, Hydrologic Unit 10120109, 0.8 mi northeast of Redshirt, approximately 22 mi southeast of Hermosa on State Highway 40, on right stream bank.

DRAINAGE AREA.--10,220 mi^2, approximately.

PERIOD OF RECORD.--October 1998 to current year.

REVISED RECORDS.--WDR SD-99-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,670 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Angostura Dam, conservation capacity, 82,400 acre-ft, 45 mi upstream since October 1949. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	e75	81	e75	e130	e46	65	305	53	48	37	81
2	86	e78	80	e70	e140	e47	64	157	64	45	37	78
3	84	e80	81	e70	e140	e45	65	118	64	41	40	69
4	85	81	e75	e70	e130	e44	69	128	70	41	47	e67
5	85	79	e68	e75	e120	e43	69	138	66	43	54	65
6	84	78	e45	e78	e110	e45	69	108	63	41	51	64
7	81	78	e60	e80	e110	e45	71	84	67	58	48	63
8	80	75	e70	e85	e100	e43	70	151	72	57	52	68
9	82	75	e80	e80	e100	e41	64	207	61	43	53	76
10	83	76	e85	e72	e100	e50	61	175	55	41	54	112
11	81	75	e85	e60	e120	e60	60	146	61	40	55	121
12	82	75	e88	e50	e100	e70	64	111	65	37	48	90
13	84	74	e90	e67	e100	e90	64	95	75	35	44	90
14	84	74	e95	e96	e110	95	59	83	80	34	45	83
15	86	74	e120	e96	e100	74	58	76	64	34	43	79
16	87	73	e80	e96	e110	72	53	72	61	34	46	78
17	88	85	e80	e100	e120	76	58	75	54	41	49	76
18	88	77	e79	e120	e120	109	62	90	103	48	57	e77
19	88	75	e78	e120	e120	117	77	82	117	48	62	e88
20	87	73	e78	e140	e110	97	71	75	77	54	64	e86
21	87	73	e60	e140	e100	83	69	73	67	52	66	e83
22	88	77	e50	e110	e78	76	65	74	72	49	59	e80
23	90	74	e40	e80	e60	73	66	87	61	45	56	e77
24	91	72	e45	e70	e45	74	79	94	61	44	55	e77
25	92	70	e55	e80	e43	73	84	78	59	43	55	e77
26	91	e67	e65	e75	e44	70	78	67	51	39	58	77
27	90	e65	e75	e100	e45	72	74	63	e50	38	57	76
28	91	e70	e85	e110	e46	75	70	55	e49	34	61	75
29	91	82	e100	e110	---	69	71	71	e48	34	63	75
30	e85	79	e80	e110	---	65	105	60	e47	33	63	74
31	e75	---	e75	e120	---	65	---	48	---	41	73	---
TOTAL	2,660	2,259	2,328	2,805	2,751	2,104	2,054	3,246	1,957	1,315	1,652	2,382
MEAN	85.8	75.3	75.1	90.5	98.2	67.9	68.5	105	65.2	42.4	53.3	79.4
MAX	92	85	120	140	140	117	105	305	117	58	73	121
MIN	75	65	40	50	43	41	53	48	47	33	37	63
AC-FT	5,280	4,480	4,620	5,560	5,460	4,170	4,070	6,440	3,880	2,610	3,280	4,720

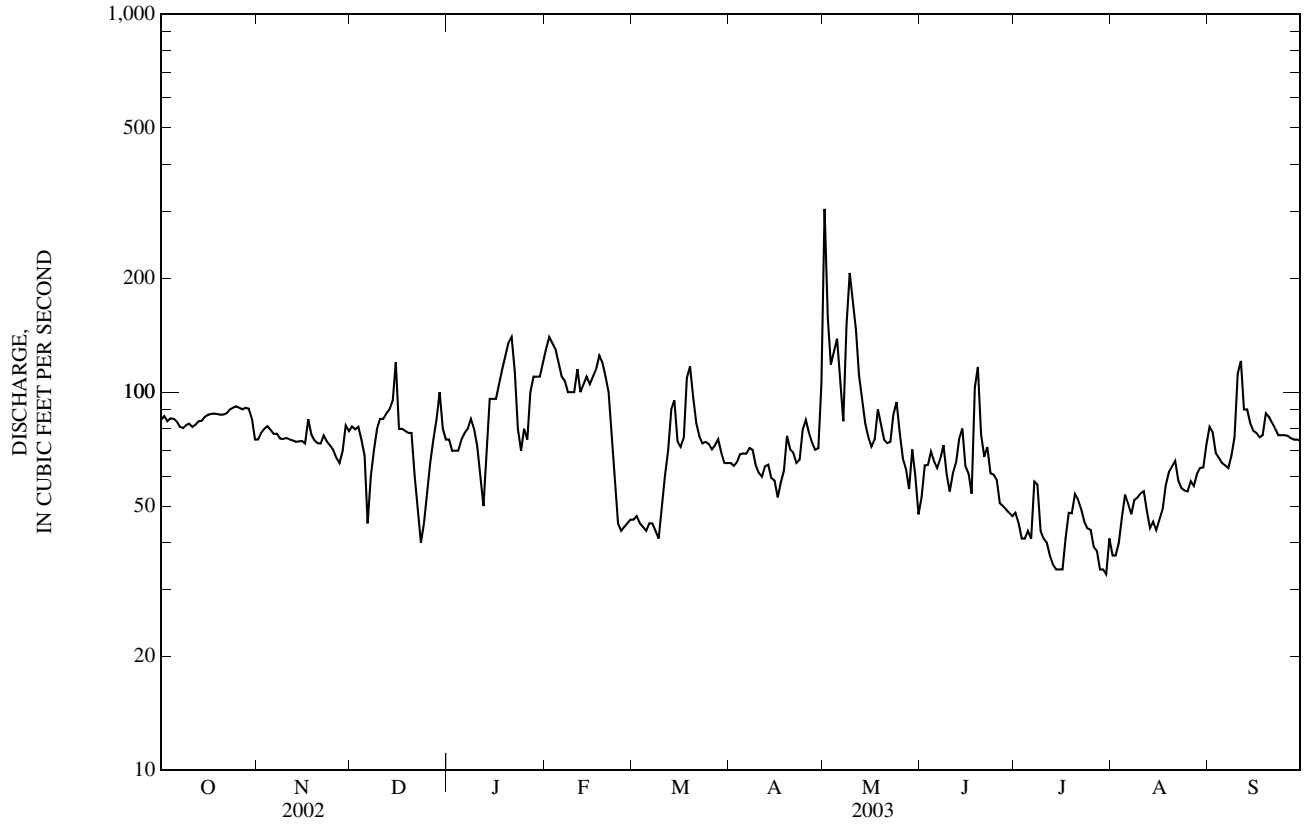
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

MEAN	132	258	91.7	80.5	87.7	158	406	231	334	95.1	88.1	93.5
MAX	277	926	147	116	139	287	1,215	441	1,344	262	185	132
(WY)	(1999)	(1999)	(1999)	(1999)	(1999)	(2001)	(2000)	(2000)	(1999)	(1999)	(1999)	(1999)
MIN	85.8	75.3	59.4	60.6	61.9	67.9	68.5	80.5	56.1	35.2	53.3	79.4
(WY)	(2003)	(2003)	(2001)	(2002)	(2001)	(2003)	(2003)	(2001)	(2002)	(2002)	(2003)	(2003)

06403700 CHEYENNE RIVER AT REDSHIRT, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	25,957		27,513			
ANNUAL MEAN	71.1		75.4		171	
HIGHEST ANNUAL MEAN					395	1999
LOWEST ANNUAL MEAN					72.1	2002
HIGHEST DAILY MEAN	173	Sep 13	305	May 1	7,320	Apr 24, 2000
LOWEST DAILY MEAN	20	Jan 1	33	Jul 30	20	Jan 1, 2002
ANNUAL SEVEN-DAY MINIMUM	29	Jun 30	36	Jul 27	29	Jun 30, 2002
MAXIMUM PEAK FLOW			405	May 1	9,070	Apr 23, 2000
MAXIMUM PEAK STAGE			11.32	May 1	17.48	Apr 23, 2000
ANNUAL RUNOFF (AC-FT)	51,490		54,570		123,700	
10 PERCENT EXCEEDS	91		110		263	
50 PERCENT EXCEEDS	75		74		86	
90 PERCENT EXCEEDS	40		45		53	

e Estimated.



06404000 BATTLE CREEK NEAR KEYSTONE, SD

LOCATION.--Lat 43° 52'21", long 103° 20'10", in $SW^1/_4$ $SW^1/_4$ sec.18, T.2 S., R.7 E., Pennington County, Hydrologic Unit 10120109, at right downstream end county highway bridge, 0.6 mi downstream from Iron Creek, and 4.5 mi southeast of Keystone.

DRAINAGE AREA.--58.5 mi^2 (revised).

PERIOD OF RECORD.--July 1945 to July 1947, October 1961 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,800 ft above NGVD of 1929, from topographic map. Prior to Nov. 13, 1961, nonrecording gage at site 250 ft downstream at different datum and Nov. 13 to Dec. 5, 1961, at same site at present datum. Dec. 6, 1961, to June 9, 1972, water-stage recorder at site 210 ft downstream at present datum (destroyed by flood); June 10 to Nov. 20, 1972, nonrecording gage 180 ft downstream at present datum; Nov. 21, 1972, to Nov. 27, 1973, water-stage recorder at present site and datum; Nov. 28, 1973, to Nov. 7, 1974, nonrecording gage 180 ft downstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.87	e1.0	e1.3	1.3	1.8	e0.50	4.8	44	11	3.6	0.09	0.00
2	0.99	e1.1	e1.2	0.89	2.0	e0.50	4.8	56	13	4.2	0.11	e0.00
3	0.90	e1.3	e1.1	1.2	e1.9	e0.50	5.0	49	13	3.1	0.01	e0.00
4	0.88	e1.4	e1.1	1.6	e1.5	e1.0	5.5	42	12	2.6	0.00	e0.00
5	1.0	1.6	e1.0	1.5	e1.3	e0.70	4.9	36	9.9	5.4	0.02	e0.00
6	1.0	1.7	e0.90	1.4	e1.0	e0.50	5.1	30	8.3	4.6	0.10	e0.00
7	1.0	1.8	e0.80	1.5	e1.0	e0.20	6.0	26	8.4	2.3	0.02	e0.00
8	1.2	1.8	e0.70	1.8	e1.0	e0.10	5.9	33	9.0	1.7	0.47	e0.00
9	1.3	1.8	e0.72	1.7	e1.0	e0.10	5.8	42	8.2	1.4	0.50	0.00
10	1.2	2.0	e0.85	1.2	e1.0	e0.50	5.5	34	7.6	0.90	0.55	0.00
11	1.3	2.0	e1.0	e0.60	e1.5	e1.0	5.6	31	7.3	0.66	0.57	0.01
12	1.4	2.0	e1.0	e0.38	1.9	1.9	5.6	26	6.6	0.59	0.51	0.07
13	1.0	1.5	e0.98	e0.20	1.9	3.0	4.4	23	7.6	0.54	0.39	0.09
14	0.90	1.5	e0.97	e0.17	1.7	6.2	5.5	21	7.8	0.44	0.12	0.04
15	0.83	1.4	e1.2	e0.15	e1.5	8.0	4.2	20	7.0	0.29	0.01	0.04
16	0.79	1.7	e1.3	e0.10	e1.3	6.5	3.6	17	7.6	0.13	0.00	0.02
17	0.93	1.9	e1.6	e0.10	e1.0	6.5	3.8	16	9.8	0.27	0.00	0.00
18	1.1	1.9	e1.8	e0.10	e1.6	15	6.4	16	8.0	0.63	0.13	0.08
19	1.1	2.1	e2.0	e0.50	e2.0	19	8.4	14	6.4	0.62	0.31	0.17
20	1.1	2.1	e1.8	e0.88	e2.5	18	6.6	13	5.6	0.34	0.30	0.18
21	1.0	1.5	e1.5	e0.75	e1.6	17	5.0	12	6.1	0.22	0.18	0.29
22	e0.95	1.4	e1.1	e0.50	e1.4	11	4.7	12	5.7	0.12	0.09	0.27
23	e0.85	e1.3	e0.79	e0.48	e1.0	9.6	6.0	11	5.4	0.09	0.01	0.27
24	e0.80	e1.3	e0.60	e0.48	e0.70	7.9	18	11	7.9	0.03	0.00	0.16
25	e0.90	e1.2	e0.50	e0.70	e0.50	6.2	21	10	9.0	0.07	0.00	0.14
26	e1.1	e1.1	e0.40	e0.75	e0.50	6.7	15	9.7	6.8	0.07	0.00	0.12
27	e1.2	e1.1	e0.20	e0.70	e0.50	6.1	12	9.4	4.9	0.06	0.00	0.04
28	e1.3	e1.3	0.13	e0.50	e0.50	4.8	11	9.2	4.7	0.02	0.00	0.01
29	e1.3	e1.3	0.80	e1.0	---	4.6	11	8.2	4.6	0.27	0.00	0.01
30	e1.1	e1.3	1.2	e1.2	---	5.7	14	8.2	4.6	0.46	0.00	0.04
31	e1.0	---	1.4	1.5	---	5.7	---	7.8	---	0.30	0.00	---
TOTAL	32.29	46.4	31.94	25.83	37.10	175.00	225.1	697.5	233.8	36.02	4.49	2.05
MEAN	1.04	1.55	1.03	0.83	1.32	5.65	7.50	22.5	7.79	1.16	0.14	0.068
MAX	1.4	2.1	2.0	1.8	2.5	19	21	56	13	5.4	0.57	0.29
MIN	0.79	1.0	0.13	0.10	0.50	0.10	3.6	7.8	4.6	0.02	0.00	0.00
AC-FT	64	92	63	51	74	347	446	1,380	464	71	8.9	4.1

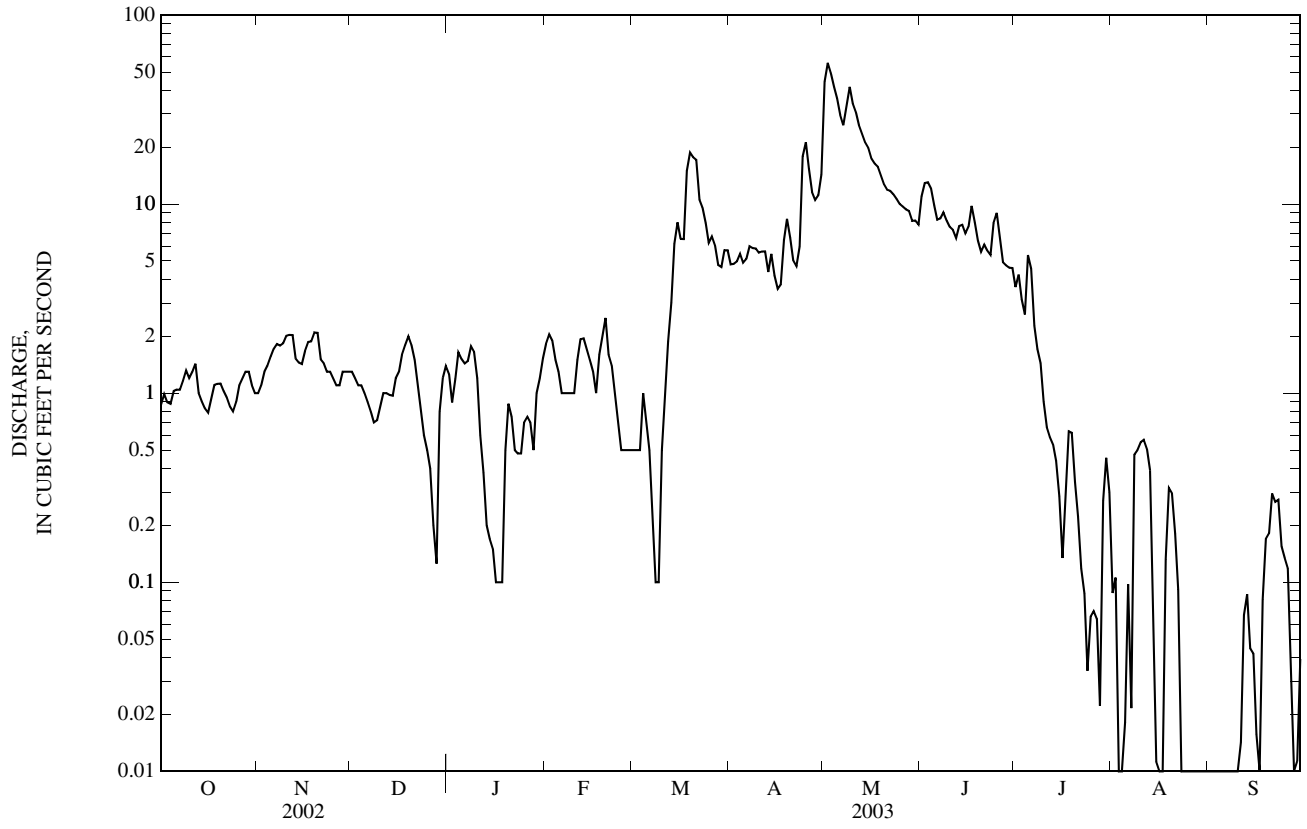
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

MEAN	3.06	3.50	2.51	1.81	2.06	3.96	9.99	29.2	37.7	12.1	4.97	2.22
MAX	22.5	36.0	25.8	12.7	9.57	12.8	38.8	153	199	46.3	20.5	7.20
(WY)	(1999)	(1999)	(1999)	(1997)	(1996)	(1987)	(1971)	(1995)	(1972)	(1962)	(1999)	(1997)
MIN	0.000	0.000	0.000	0.000	0.000	0.46	1.49	1.24	0.22	0.039	0.000	0.000
(WY)	(1962)	(1989)	(1989)	(1962)	(1989)	(1962)	(1981)	(1985)	(1985)	(1989)	(1989)	(1975)

06404000 BATTLE CREEK NEAR KEYSTONE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	976.59		1,547.52			
ANNUAL MEAN	2.68		4.24		[a]9.43	
HIGHEST ANNUAL MEAN					27.7	1995
LOWEST ANNUAL MEAN					0.69	1988
HIGHEST DAILY MEAN	22	May 12	56	May 2	2,400	Jun 10, 1972
LOWEST DAILY MEAN	0.00	Jul 17	0.00	Aug 4	[b]0.00	Oct 1, 1961
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 17	0.00	Aug 24	0.00	Oct 1, 1961
MAXIMUM PEAK FLOW			66	May 2	[c]26,200	Jun 9, 1972
MAXIMUM PEAK STAGE			4.19	May 2	[c]14.50	Jun 9, 1972
ANNUAL RUNOFF (AC-FT)	1,940		3,070		6,830	
10 PERCENT EXCEEDS	9.4		11		18	
50 PERCENT EXCEEDS	1.1		1.2		2.6	
90 PERCENT EXCEEDS	0.14		0.04		0.29	

a Median of annual mean discharges, 7.3 ft^3/s.
b No flow at times in some years.
c From floodmarks, site then in use, from rating curve extended above 5.5 ft^3/s on basis of slope-area measurement of peak flow.
e Estimated.



06404998 GRACE COOLIDGE CREEK NEAR GAME LODGE, NEAR CUSTER, SD

LOCATION.--Lat 43° 45'40", long 103° 21'49", in $SW^1/_4$ $NE^1/_4$ sec.26, T.3 S., R.6 E., Custer County, Hydrologic Unit 10120109, on right bank 0.3 mi downstream from bridge on U.S. Highway 16A, 0.9 mi east of Game Lodge, 1.5 mi southwest of junction of State Highway 36 and U.S. Highway 16A, and 11.5 mi east of Custer.

DRAINAGE AREA.--25.2 mi^2.

PERIOD OF RECORD.--October 1976 to current year.

REVISED RECORDS.--WDR SD-88-1: 1988(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,100 ft above NGVD of 1929, from topographic map. From July 17, 1945, to July 31, 1947, nonrecording gage at site 1,800 ft upstream and different datum. June 1967 to June 13, 1976, at site 500 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Considerable loss occurs to sinkholes downstream from gage. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1972, reached a stage of 10.35 ft, from floodmarks, discharge, 709 ft^3/s from slope-area measurement of peak flow. Flood of June 15, 1976, reached a stage of 10.90 ft, from floodmarks, discharge, 980 ft^3/s on basis of slope-area measurement of 10.35 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	e1.5	e1.5	1.5	1.6	e0.60	1.6	15	6.0	2.7	1.2	0.68
2	1.4	e1.5	e1.5	2.5	1.6	e0.60	1.6	18	7.5	2.4	1.2	0.59
3	1.4	e1.7	e1.5	1.4	e1.6	e1.0	1.7	17	6.2	2.1	1.1	0.55
4	1.3	e1.9	e1.5	1.5	e1.5	e1.0	2.0	15	5.6	2.0	1.1	0.54
5	1.4	2.2	e1.1	1.5	e1.4	e1.0	2.1	14	5.4	1.8	1.1	0.56
6	1.3	2.1	e1.0	1.6	e1.4	e1.0	2.2	12	4.9	1.9	1.0	0.55
7	1.3	1.9	e1.2	1.5	e1.4	e1.0	2.3	10	5.2	1.9	3.7	0.53
8	1.4	2.0	e1.0	1.5	e1.4	e1.1	2.1	19	5.2	1.8	2.5	0.57
9	1.5	2.0	e1.2	e1.5	e1.4	e1.1	2.0	33	4.6	1.7	1.2	0.65
10	1.4	2.0	e1.4	e1.5	e1.3	e1.1	1.9	28	4.2	1.6	1.4	1.3
11	1.5	2.1	e1.6	e1.5	e1.2	e1.3	1.9	22	4.0	1.5	1.0	0.93
12	1.6	2.0	1.9	1.5	e1.2	e1.4	1.7	19	3.8	1.5	0.85	0.84
13	1.5	2.1	1.6	1.5	e1.2	1.8	1.7	16	4.8	1.4	0.75	0.90
14	1.6	2.1	1.6	2.5	e1.2	2.0	1.7	14	4.2	1.4	0.68	0.84
15	1.8	2.2	1.6	1.5	e1.2	1.8	1.7	13	3.7	1.4	0.66	0.82
16	1.6	2.0	1.7	e1.4	e1.4	1.7	1.9	12	3.7	1.4	0.63	0.80
17	1.8	1.9	1.6	e1.3	1.5	1.7	1.9	11	3.9	1.6	0.64	0.86
18	1.7	2.0	1.6	e1.3	1.7	3.1	2.6	11	3.6	2.1	1.0	0.97
19	1.7	1.9	e1.4	1.9	1.8	3.9	3.4	9.7	3.3	1.8	0.89	0.90
20	1.7	2.1	e1.3	1.5	1.5	3.0	2.7	9.1	3.3	1.6	0.78	0.85
21	1.7	2.0	e1.2	1.5	1.2	2.3	2.3	8.6	3.3	1.6	0.73	0.84
22	e1.6	1.8	e1.1	e1.5	e1.1	2.0	2.1	8.3	3.0	1.4	0.72	0.85
23	e1.6	1.9	e1.0	e1.5	e0.98	1.9	2.8	7.7	2.9	1.4	0.66	0.83
24	e1.6	1.9	e1.6	e1.8	e0.78	1.8	6.5	7.2	3.3	1.3	0.65	0.81
25	e1.6	e1.8	e2.2	e1.7	e0.60	1.8	7.0	6.6	3.7	1.2	0.64	0.80
26	e1.7	e1.6	e2.7	1.7	e0.60	1.8	4.9	6.2	3.2	1.2	0.61	0.81
27	e1.8	e1.5	3.6	1.7	e0.60	2.0	3.9	6.1	3.0	1.1	0.57	0.83
28	e1.8	e1.5	1.4	1.8	e0.60	1.8	4.0	6.2	2.7	1.2	0.54	0.86
29	e1.9	e1.6	1.4	1.6	---	1.8	4.2	5.8	2.7	1.2	0.58	0.90
30	e1.8	e1.6	1.7	1.5	---	1.5	6.2	5.2	3.3	1.3	0.64	0.94
31	e1.6	---	2.2	1.7	---	1.6	---	5.0	---	1.2	0.71	---
TOTAL	48.9	56.4	48.9	49.9	34.96	51.50	84.6	390.7	124.2	49.7	30.43	23.70
MEAN	1.58	1.88	1.58	1.61	1.25	1.66	2.82	12.6	4.14	1.60	0.98	0.79
MAX	1.9	2.2	3.6	2.5	1.8	3.9	7.0	33	7.5	2.7	3.7	1.3
MIN	1.3	1.5	1.0	1.3	0.60	0.60	1.6	5.0	2.7	1.1	0.54	0.53
AC-FT	97	112	97	99	69	102	168	775	246	99	60	47

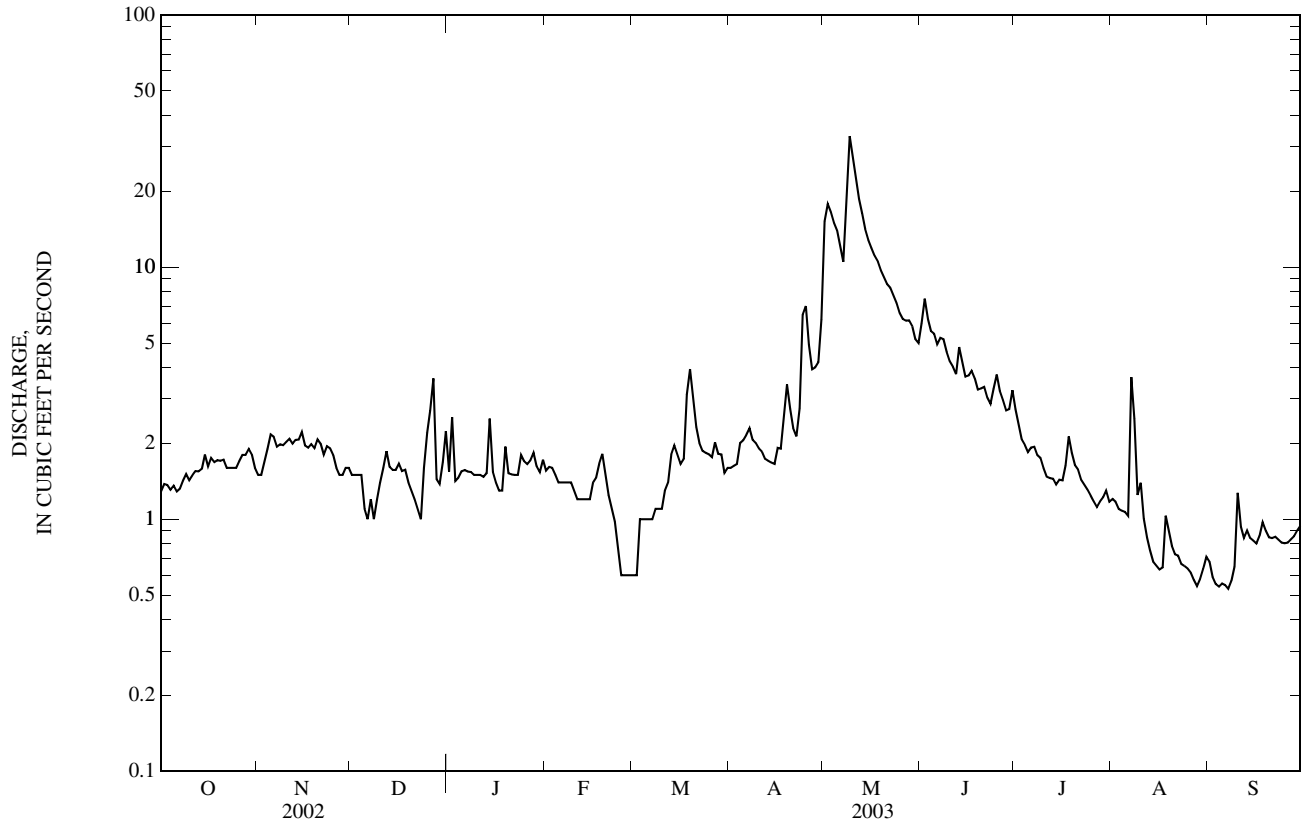
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

MEAN	3.23	3.35	2.26	1.95	1.76	2.44	4.59	16.9	13.1	5.55	3.97	2.64
MAX	14.7	25.2	11.9	8.13	6.44	6.41	25.3	115	66.8	22.3	14.3	7.51
(WY)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1995)	(1995)	(1979)	(1997)	(1997)
MIN	0.36	0.41	0.32	0.45	0.004	0.61	0.63	0.67	0.25	0.097	0.26	0.13
(WY)	(1989)	(1986)	(1986)	(1988)	(1989)	(1981)	(1981)	(1977)	(1988)	(1988)	(1985)	(1988)

06404998 GRACE COOLIDGE CREEK NEAR GAME LODGE, NEAR CUSTER, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1977 - 2003	
ANNUAL TOTAL	761.36		993.89			
ANNUAL MEAN	2.09		2.72		5.16	
HIGHEST ANNUAL MEAN					19.1	1995
LOWEST ANNUAL MEAN					0.61	1988
HIGHEST DAILY MEAN	9.6	May 12	33	May 9	505	May 8, 1995
LOWEST DAILY MEAN	0.59	Sep 6	0.53	Sep 7	[a]0.00	Jun 5, 1977
ANNUAL SEVEN-DAY MINIMUM	0.66	Sep 1	0.56	Sep 2	0.00	Sep 1, 1988
MAXIMUM PEAK FLOW			45	May 8	[b]1,030	Sep 7, 1989
MAXIMUM PEAK STAGE			7.80	May 8	[c]12.76	Feb 9, 1979
ANNUAL RUNOFF (AC-FT)	1,510		1,970		3,740	
10 PERCENT EXCEEDS	4.0		5.5		10	
50 PERCENT EXCEEDS	1.6		1.6		2.1	
90 PERCENT EXCEEDS	0.91		0.81		0.58	

a No flow for some days in 1977, part of June 14, 1979, 1985, 1988, and 1989.
b Gage height, 10.84 ft, from floodmarks, from rating curve extended above 709 ft^3/s on basis of slope-area measurement of peak flow.
c Backwater from ice.
e Estimated.



06406000 BATTLE CREEK AT HERMOSA, SD

LOCATION.--Lat 43° 49'41", long 103° 11'44", in NE$^1/_4$ SW$^1/_4$ SW$^1/_4$ sec.32, T.2 S., R.8 E., Custer County, Hydrologic Unit 10120109, on right bank 50 ft downstream from Chicago and North Western Transportation Company bridge, 0.8 mi south of Hermosa, and 2.9 mi downstream from Grace Coolidge Creek.

DRAINAGE AREA.--178 mi^2.

PERIOD OF RECORD.--August to December 1903 (gage heights only), July 1949 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,290 ft above NGVD of 1929, from topographic map. Nonrecording gage, August to December 1903, at site 50 ft upstream, July 7, 1949, to Nov. 2, 1950, at site 0.5 mi upstream, Nov. 3, 1950, to Dec. 6, 1961, at site 170 ft downstream, all at different datum. Dec. 7, 1961, to June 10, 1972, water-stage recorder (destroyed by flood), and June 11, 1972, to Aug. 28, 1972, nonrecording gage at site 80 ft downstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	e11	11	10	11	e8.8	9.6	15	18	13	9.4	7.7
2	9.8	e11	e10	12	11	e8.6	9.5	17	18	13	8.7	7.2
3	10	e11	e10	11	10	e8.5	9.7	25	17	13	8.6	5.0
4	9.9	e11	e10	11	e10	e8.0	9.9	24	17	13	8.4	5.7
5	10	e12	e9.8	11	e10	e8.3	9.3	24	17	14	8.0	5.9
6	9.9	e12	e9.6	10	e9.7	e8.5	9.3	21	17	26	6.8	5.5
7	9.9	12	e9.4	10	e9.5	e8.4	9.7	18	17	16	7.1	5.7
8	10	12	e9.6	10	e9.3	e7.7	9.5	18	16	16	7.7	6.5
9	11	12	e8.8	10	e9.2	9.0	9.3	32	16	15	7.2	6.6
10	10	12	e9.2	e9.6	e9.2	9.3	9.0	34	16	14	7.4	10
11	10	12	e9.6	e9.5	e9.2	9.7	8.9	31	16	14	6.6	7.9
12	11	12	e9.6	e10	e9.3	9.3	8.3	28	16	13	6.5	7.7
13	11	12	e9.6	e10	e9.5	9.1	8.3	26	16	14	7.5	8.0
14	11	12	e9.8	e9.8	e9.3	8.7	8.1	25	16	13	7.0	7.5
15	11	12	e10	e9.0	e8.8	8.4	8.2	24	16	13	7.4	7.4
16	11	12	10	e9.0	e9.0	8.3	8.4	22	15	13	7.1	7.2
17	11	12	11	e9.5	e10	9.3	8.4	22	15	13	4.7	7.7
18	11	12	11	e10	9.8	10	9.3	22	16	14	7.5	8.4
19	11	12	10	e9.6	9.7	10	8.4	21	15	14	5.8	8.2
20	11	11	10	e9.3	9.6	9.6	6.5	20	16	13	5.3	8.1
21	11	11	e9.8	e8.8	e9.4	9.5	6.4	20	16	11	5.2	8.1
22	e11	11	e9.6	e8.5	e9.0	9.6	6.8	19	15	11	4.5	8.1
23	e11	11	e9.4	e8.0	e8.8	9.7	6.9	19	16	11	6.3	8.3
24	e11	e11	e9.2	e8.5	e8.6	9.6	10	19	16	9.3	5.8	8.1
25	e11	e11	e9.1	e8.8	e8.5	9.8	10	19	17	8.2	6.4	8.1
26	e11	e11	9.3	e8.8	e8.5	9.9	9.5	18	16	8.7	5.9	7.9
27	e12	e11	9.8	e9.5	e8.6	10	8.5	18	16	7.6	4.5	8.2
28	e12	e11	11	e10	e8.8	10	8.7	18	15	6.9	7.1	8.6
29	e12	12	10	11	---	9.8	9.1	17	14	8.1	7.3	8.1
30	e12	11	10	11	---	9.8	11	17	14	8.2	7.0	8.4
31	e11	---	10	11	---	9.7	---	17	---	8.9	6.7	---
TOTAL	334.2	346	305.2	304.2	263.3	284.9	264.5	670	481	385.9	211.4	225.8
MEAN	10.8	11.5	9.85	9.81	9.40	9.19	8.82	21.6	16.0	12.4	6.82	7.53
MAX	12	12	11	12	11	10	11	34	18	26	9.4	10
MIN	9.7	11	8.8	8.0	8.5	7.7	6.4	15	14	6.9	4.5	5.0
AC-FT	663	686	605	603	522	565	525	1,330	954	765	419	448

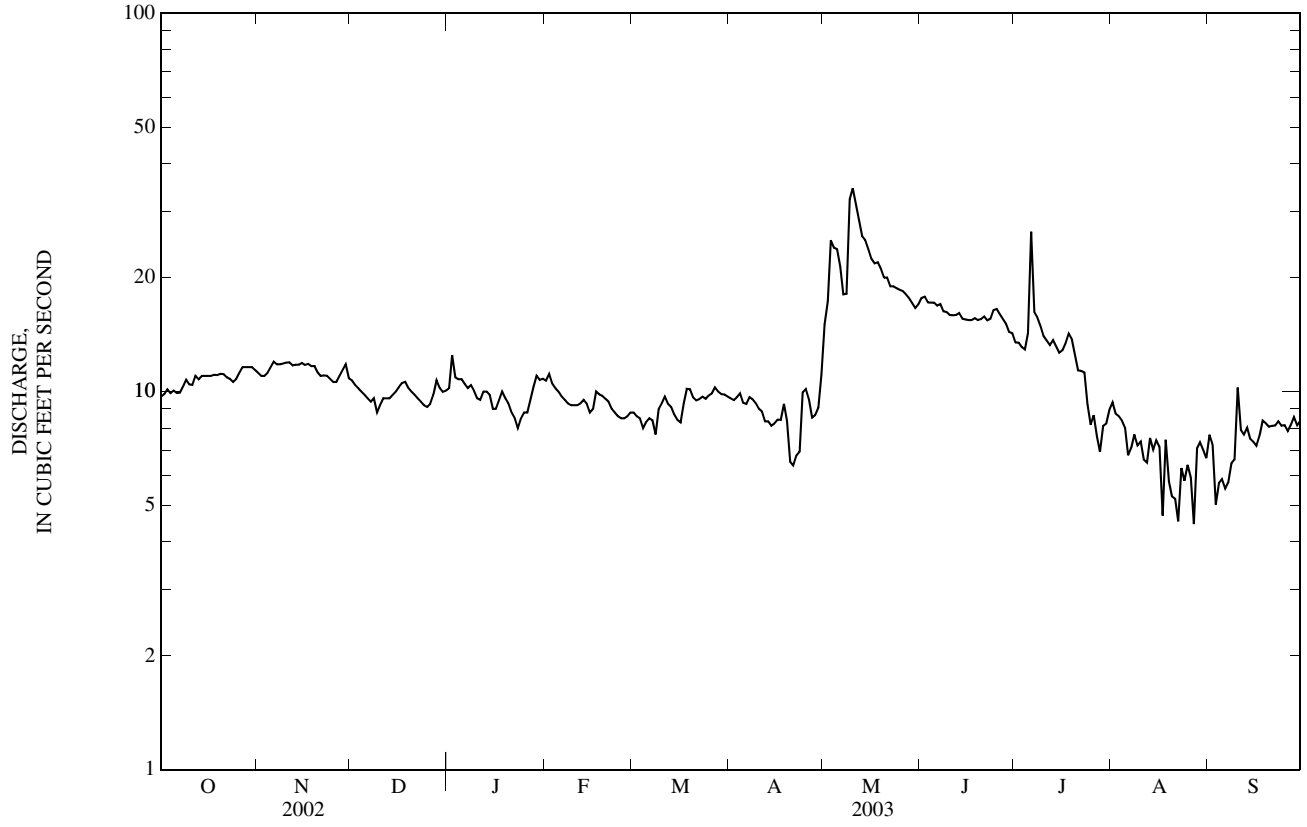
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

MEAN	7.74	8.35	7.13	6.42	6.06	6.51	9.27	32.7	42.8	16.6	9.32	7.28
MAX	39.5	62.4	48.3	41.6	38.0	34.8	68.7	234	231	75.5	53.1	41.7
(WY)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1995)	(1995)	(1962)	(1999)	(1999)
MIN	0.10	0.10	0.10	0.19	0.31	0.41	0.34	0.74	0.78	0.23	0.17	0.050
(WY)	(1956)	(1962)	(1962)	(1962)	(1962)	(1962)	(1962)	(1955)	(1954)	(1989)	(1961)	(1955)

06406000 BATTLE CREEK AT HERMOSA, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1950 - 2003	
ANNUAL TOTAL	4,339.9		4,076.4			
ANNUAL MEAN	11.9		11.2		[a]13.4	
HIGHEST ANNUAL MEAN					59.8	1999
LOWEST ANNUAL MEAN					0.99	1955
HIGHEST DAILY MEAN	25	May 11	34	May 10	1,750	Jun 10, 1972
LOWEST DAILY MEAN	4.2	Aug 22	4.5	Aug 22	[b]0.00	Oct 6, 1954
ANNUAL SEVEN-DAY MINIMUM	4.6	Aug 21	5.5	Aug 21	0.00	Oct 9, 1954
MAXIMUM PEAK FLOW			61	Jul 6	[c]21,400	Jun 10, 1972
MAXIMUM PEAK STAGE			3.45	Jul 6	[c]17.72	Jun 10, 1972
ANNUAL RUNOFF (AC-FT)	8,610		8,090		9,690	
10 PERCENT EXCEEDS	17		17		29	
50 PERCENT EXCEEDS	12		10		4.5	
90 PERCENT EXCEEDS	7.4		7.4		1.2	

a Median of annual mean discharges, 6.9 ft^3/s.
b No flow at times in 1954-57, 1959, and 1989.
c From floodmarks, from rating curve extended above 2,800 ft^3/s on basis of contracted-opening and flow-over-railroad embankment measurement of peak flow.
e Estimated.



06406500 BATTLE CREEK BELOW HERMOSA, SD

LOCATION.--Lat 43° 43'30", long 102° 54'15", in NE$^1/_4$ SW$^1/_4$ SE$^1/_4$ sec.3, T.4 S., R.10 E., Pennington County, Hydrologic Unit 10120109, at left downstream side of bridge on State Highway 40, approximately 9 mi upstream from mouth, and 18.0 mi southeast of Hermosa.

DRAINAGE AREA.--285 mi^2.

PERIOD OF RECORD.--October 1950 to September 1953, October 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,810 ft above NGVD of 1929, from topographic map. Oct. 1, 1950, to Sept. 30, 1953, nonrecording gage at same site and different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Most of the flow is diverted, except after large storm events, for irrigation of about 1,000 acres upstream from station during irrigation season. Satellite data-collection platform at site. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of about 4 ft (present datum) higher than that of May 23, 1952, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	e9.4	e10	e8.5	e8.0	e5.0	10	20	20	14	4.6	4.0
2	7.2	e9.3	e10	e9.0	e8.0	e5.0	8.3	22	22	13	3.6	3.6
3	7.4	e9.3	e9.5	e10	e9.0	e5.0	6.4	20	22	14	3.7	2.6
4	7.6	e9.6	e9.4	e9.6	e9.6	e5.0	5.7	24	22	13	3.9	3.2
5	8.7	e9.8	e9.1	e9.5	e9.0	e4.8	6.9	29	22	13	3.9	3.2
6	7.5	e10	e8.8	e9.0	e8.4	e4.0	8.6	26	22	19	3.6	2.8
7	7.5	11	e8.5	e8.6	e8.0	e4.0	9.4	26	22	22	3.3	2.8
8	8.4	11	e8.3	e8.7	e7.5	e4.0	9.0	28	21	18	3.8	2.5
9	8.2	10	e8.0	e8.5	e7.0	e4.0	9.2	e30	21	14	4.2	2.3
10	7.8	10	e8.0	e8.1	e7.0	e5.5	8.8	e32	21	9.8	4.4	7.9
11	8.1	10	e8.3	e8.0	e6.9	e8.0	7.0	e34	20	8.3	3.9	5.9
12	7.1	10	e8.5	e8.4	e6.9	e10	7.1	e34	20	7.9	2.9	6.6
13	6.9	10	e8.5	e8.0	e6.9	e14	7.2	32	20	8.2	3.0	6.1
14	7.9	10	e8.5	e7.5	e7.0	e14	8.3	29	20	6.0	2.9	5.0
15	7.3	10	e8.7	e8.0	e7.0	e12	8.1	27	20	6.2	1.8	4.8
16	7.7	10	e9.0	e8.0	e7.0	12	7.8	25	19	6.7	1.7	4.7
17	8.3	11	e9.2	e7.5	e8.0	12	7.1	26	18	5.6	1.6	4.8
18	8.6	10	e9.5	e7.0	e9.0	11	8.5	24	19	7.9	1.8	4.9
19	8.7	10	e9.0	e7.5	e8.4	11	8.3	24	17	11	2.8	4.9
20	8.8	10	e8.9	e7.8	e8.0	11	8.1	23	14	8.8	2.2	5.0
21	9.1	10	e8.6	e7.0	e7.5	11	8.2	23	15	8.1	2.5	5.1
22	e9.0	10	e8.4	e6.8	e7.0	10	6.9	23	17	6.7	2.1	5.1
23	e8.8	10	e8.1	e6.0	e6.0	9.6	7.6	23	16	6.5	1.6	4.2
24	e8.5	11	e8.0	e6.0	e5.5	9.0	9.1	23	15	6.0	1.4	3.8
25	e8.5	e10	e8.0	e6.2	e5.0	8.6	9.4	22	15	4.5	1.4	4.5
26	e8.8	e10	e8.0	e6.7	e5.0	8.7	10	22	15	4.1	1.4	4.6
27	e9.0	e10	e8.1	e7.0	e5.0	9.3	11	22	15	4.7	1.5	4.6
28	e9.5	e11	e8.5	e8.0	e4.9	8.1	11	22	14	4.5	1.2	4.6
29	e9.5	e11	e9.0	e8.5	---	8.8	11	21	14	4.7	1.7	4.6
30	e9.5	e11	e8.6	e9.0	---	9.7	15	19	14	4.1	2.4	4.9
31	e9.5	---	e8.5	e8.0	---	10	---	19	---	4.7	3.0	---
TOTAL	255.3	304.4	269.5	246.4	202.5	264.1	259.0	774	552	285.0	83.8	133.6
MEAN	8.24	10.1	8.69	7.95	7.23	8.52	8.63	25.0	18.4	9.19	2.70	4.45
MAX	9.5	11	10	10	9.6	14	15	34	22	22	4.6	7.9
MIN	5.9	9.3	8.0	6.0	4.9	4.0	5.7	19	14	4.1	1.2	2.3
AC-FT	506	604	535	489	402	524	514	1,540	1,090	565	166	265

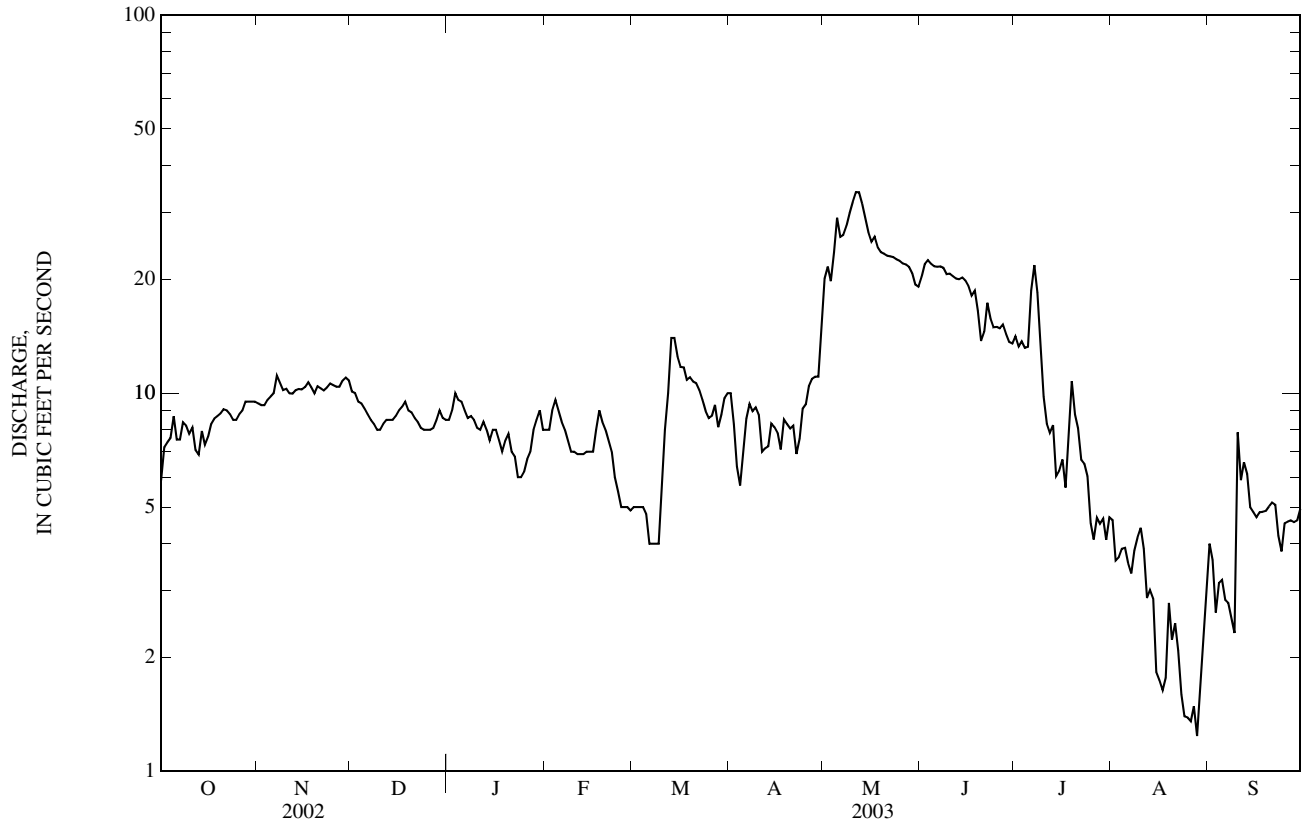
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1953, 1989 - 2003, BY WATER YEAR (WY)

MEAN	13.9	16.3	12.9	12.2	14.8	14.9	19.3	63.3	70.4	23.2	16.4	13.1
MAX	41.5	59.7	39.4	37.4	68.9	41.5	78.9	233	266	72.1	57.9	44.4
(WY)	(2000)	(1999)	(1999)	(1997)	(1997)	(1999)	(1999)	(1995)	(1995)	(1999)	(1999)	(1999)
MIN	0.000	0.000	0.000	0.000	0.000	0.44	0.59	0.71	0.032	0.000	0.000	0.000
(WY)	(1953)	(1989)	(1989)	(1989)	(1989)	(1990)	(1990)	(1989)	(1989)	(1989)	(1989)	(1952)

06406500 BATTLE CREEK BELOW HERMOSA, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1951-1953, 1989-2003	
ANNUAL TOTAL	3,902.27		3,629.6			
ANNUAL MEAN	10.7		9.94		[a]24.2	
HIGHEST ANNUAL MEAN					63.3	1999
LOWEST ANNUAL MEAN					0.40	1989
HIGHEST DAILY MEAN	25	May 12	34	May 11	1,760	May 23, 1952
LOWEST DAILY MEAN	0.41	Aug 4	1.2	Aug 28	[b]0.00	Oct 1, 1950
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 2	1.5	Aug 23	0.00	Oct 1, 1950
MAXIMUM PEAK FLOW			35	May 12	[c]2,060	May 23, 1952
MAXIMUM PEAK STAGE			2.89	May 12	9.30	May 9, 1995
ANNUAL RUNOFF (AC-FT)	7,740		7,200		17,560	
10 PERCENT EXCEEDS	18		21		47	
50 PERCENT EXCEEDS	10		8.5		10	
90 PERCENT EXCEEDS	2.0		3.9		0.00	

a Median of annual mean discharges, 21 ft^3/s.
b No flow for many days in most years.
c From rating curve extended above 110 ft^3/s, gage height, 8.13 ft, different datum.
e Estimated.



06406920 SPRING CREEK ABOVE SHERIDAN LAKE, NEAR KEYSTONE, SD

LOCATION.--Lat 43° 57'39", long 103° 29'18", in SE$^1/_4$ NE$^1/_4$ SW$^1/_4$ sec.14, T.1 S., R.5 E., Pennington County, Hydrologic Unit 10120109, on left bank 0.25 mi upstream from Sheridan Lake and 1.5 mi northeast of the junction of State Highways 16 and 385.

DRAINAGE AREA.--127 mi^2.

REVISED RECORDS.--WDR SD-93-1: Drainage area.

PERIOD OF RECORD.--August 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 4,650 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	e3.2	e2.8	e0.88	e2.2	e1.8	e14	34	22	13	2.6	4.4
2	5.9	e3.2	e2.9	e0.90	e2.4	e1.7	e15	38	27	12	2.5	3.9
3	5.5	e3.3	e3.1	e0.90	e2.7	e1.8	e15	47	23	10	2.6	3.3
4	4.9	e3.3	e3.2	e0.92	e2.9	e1.9	13	50	21	9.4	2.5	3.1
5	4.6	e3.3	e3.2	e0.98	e3.0	e2.0	9.6	50	19	9.1	2.2	2.8
6	4.5	e3.4	e3.2	e1.0	e3.0	e2.1	12	45	19	8.9	2.0	2.7
7	4.3	e3.5	e3.1	e1.1	e3.0	e2.2	11	42	20	8.2	3.3	2.5
8	4.5	e3.8	e3.1	e1.2	e3.0	e2.3	8.9	42	23	7.9	14	2.4
9	4.8	e4.0	e3.1	e1.0	e2.9	e2.4	12	49	19	7.3	6.7	2.5
10	4.7	e4.1	e3.2	e0.88	e2.8	e2.8	18	45	17	6.6	12	4.8
11	4.5	e3.8	e3.3	e0.72	e2.7	e3.0	20	44	16	6.3	7.8	6.9
12	4.6	e3.9	e3.1	e0.65	e2.6	e3.4	17	40	15	6.0	5.6	5.0
13	4.4	e3.9	e3.0	e0.62	e2.6	e4.1	16	38	18	5.7	4.4	4.5
14	4.2	e3.7	e3.0	e0.70	e2.6	e5.0	15	37	21	5.3	3.7	4.3
15	3.8	e3.8	e3.1	e0.75	e2.7	e6.5	15	35	22	4.8	3.3	3.9
16	3.8	e3.8	e3.2	e0.88	e2.7	e11	14	35	27	4.6	3.0	3.5
17	3.8	e4.0	e3.1	e1.0	e2.7	e17	14	34	27	5.0	2.8	3.3
18	3.7	e4.7	e2.9	e1.1	e2.7	e20	18	33	25	4.8	6.3	3.8
19	3.7	e3.5	e2.5	e1.2	e2.6	e22	19	31	21	4.7	8.4	4.0
20	3.6	e3.5	e2.0	e1.3	e2.5	e18	16	30	19	4.4	12	3.9
21	3.7	e3.5	e1.4	e1.3	e2.4	e17	14	29	19	3.9	8.7	3.6
22	4.0	e3.5	e1.3	e1.4	e2.3	e16	14	29	17	3.7	5.8	3.6
23	4.0	e3.6	e1.1	e1.4	e2.2	e14	16	28	16	3.4	4.7	3.3
24	4.1	e3.6	e0.94	e1.4	e2.2	e13	23	26	18	3.3	4.1	3.0
25	4.3	e3.5	e0.85	e1.4	e2.1	e10	25	25	20	3.1	3.8	2.8
26	e4.2	e3.5	e0.80	e1.5	e2.0	e10	21	24	18	2.9	3.5	2.7
27	e4.0	e3.5	e0.80	e1.5	e1.9	e9.1	18	23	16	2.9	3.4	2.6
28	e3.9	e3.6	e0.80	e1.6	e1.8	e9.1	18	23	15	3.0	3.1	2.6
29	e3.9	e3.6	e0.81	e1.7	---	e9.1	21	21	14	2.9	3.2	2.6
30	e3.9	e3.2	e0.85	e2.0	---	e9.1	25	19	14	2.7	3.4	2.6
31	e3.6	---	e0.87	e2.1	---	e11	---	19	---	2.5	3.9	---
TOTAL	132.6	108.8	70.62	35.98	71.2	258.4	487.5	1,065	588	178.3	155.3	104.9
MEAN	4.28	3.63	2.28	1.16	2.54	8.34	16.2	34.4	19.6	5.75	5.01	3.50
MAX	5.9	4.7	3.3	2.1	3.0	22	25	50	27	13	14	6.9
MIN	3.6	3.2	0.80	0.62	1.8	1.7	8.9	19	14	2.5	2.0	2.4
AC-FT	263	216	140	71	141	513	967	2,110	1,170	354	308	208

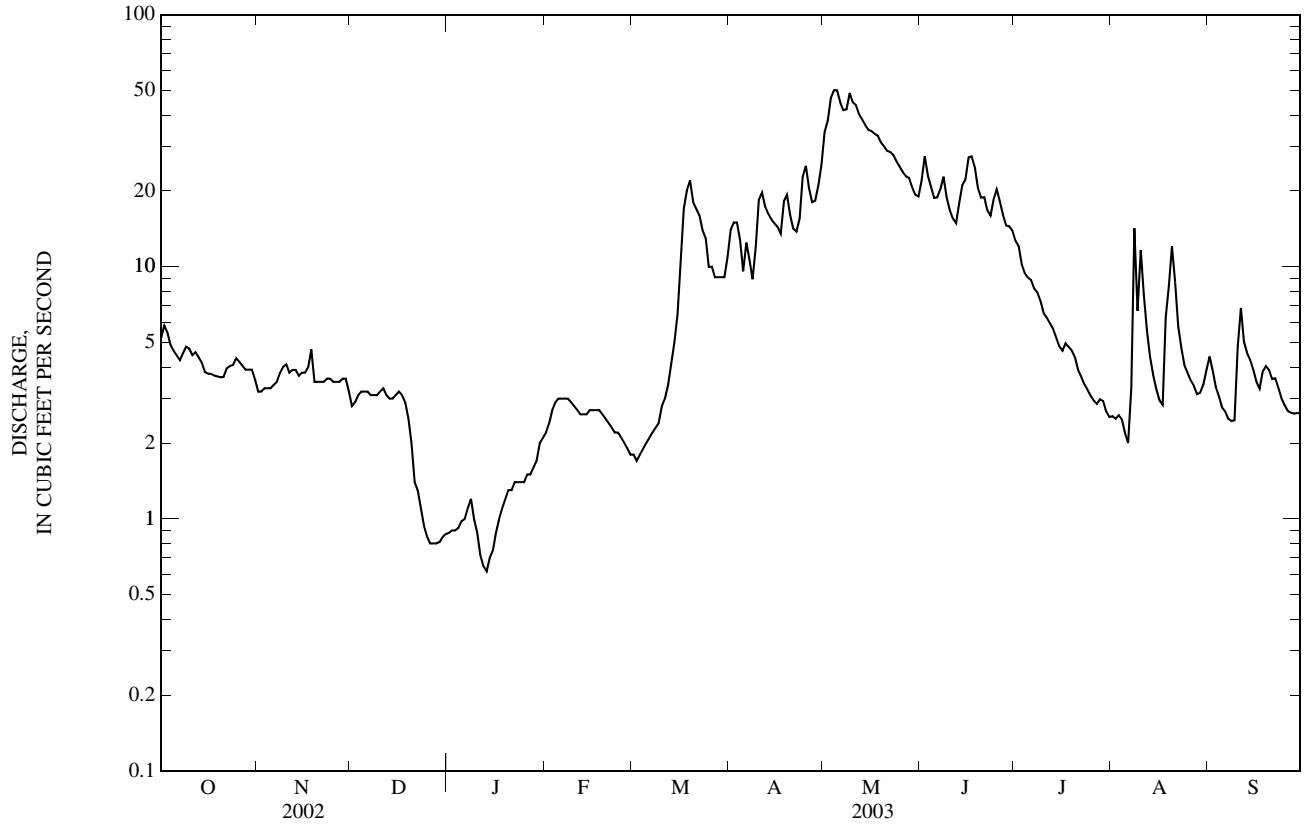
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

MEAN	11.5	11.9	8.68	6.11	6.59	12.1	22.1	59.2	77.4	30.4	18.5	11.5
MAX	35.8	51.2	34.8	21.9	19.2	21.8	64.2	144	185	63.3	50.1	26.2
(WY)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1995)	(1995)	(1998)	(1997)	(1997)
MIN	2.61	2.37	1.62	1.16	2.16	4.66	7.20	5.64	8.14	3.94	2.78	1.54
(WY)	(1991)	(1993)	(1993)	(2003)	(1991)	(2002)	(1992)	(1992)	(1992)	(2002)	(1994)	(1994)

06406920 SPRING CREEK ABOVE SHERIDAN LAKE, NEAR KEYSTONE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1991 - 2003	
ANNUAL TOTAL	2,250.42		3,256.60			
ANNUAL MEAN	6.17		8.92		23.0	
HIGHEST ANNUAL MEAN					50.7	1999
LOWEST ANNUAL MEAN					6.06	1992
HIGHEST DAILY MEAN	25	May 18	50	May 4	525	May 8, 1995
LOWEST DAILY MEAN	0.80	Jan 3	0.62	Jan 13	0.62	Jan 13, 2003
ANNUAL SEVEN-DAY MINIMUM	0.83	Dec 25	0.74	Jan 10	0.74	Jan 10, 2003
MAXIMUM PEAK FLOW			[a]54	May 4	809	Jun 18, 1999
MAXIMUM PEAK STAGE			[b]11.74	Mar 14	12.58	Jun 18, 1999
ANNUAL RUNOFF (AC-FT)	4,460		6,460		16,700	
10 PERCENT EXCEEDS	15		23		50	
50 PERCENT EXCEEDS	3.9		3.9		11	
90 PERCENT EXCEEDS	1.7		1.5		2.6	

a Gage height, 8.69 ft.
b Backwater from ice.
e Estimated.



06407500 SPRING CREEK NEAR KEYSTONE, SD
(Formerly published as 06407900 Spring Creek near Rockerville)

LOCATION.--Lat 43° 58'45", long 103° 20'25", in $SW^1/_4$ $NE^1/_4$ sec.12, T.1 S., R.6 E., Pennington County, Hydrologic Unit 10120109, on right bank 0.5 mi upstream from Deadman Creek tributary at bottom of Stratosphere Bowl.

DRAINAGE AREA.--163 mi^2.

PERIOD OF RECORD.--July 1945 to July 1947, October 1986 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,885 ft above NGVD of 1929, from topographic map. Prior to October 1986, nonrecording gage 0.2 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Sheridan Lake, capacity, 12,657 acre-ft, 11.2 mi upstream from station. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1972, reached a stage of about 14 ft, present datum.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	e3.4	e3.0	e1.6	e4.1	e3.3	11	44	23	18	0.91	1.2
2	5.4	e3.5	e3.4	e2.0	e4.2	e3.2	12	47	25	17	0.76	1.4
3	5.5	e3.6	e3.6	e1.7	e4.4	e3.2	13	47	29	16	0.62	1.4
4	5.4	e3.6	e3.6	e1.8	e4.5	e3.7	15	54	27	14	0.58	1.2
5	5.2	e3.6	e3.6	e1.8	e4.4	e4.0	13	59	25	15	0.61	1.1
6	5.2	e3.6	e3.6	e2.0	e4.3	e3.9	12	57	23	13	0.78	0.99
7	4.8	e3.9	e3.4	e2.1	e4.2	e4.0	12	53	23	11	0.93	0.80
8	4.8	e4.2	e3.4	e2.3	e4.2	e4.0	12	53	23	10	1.5	0.73
9	4.8	e4.8	e3.4	e2.8	e4.1	e4.1	11	59	24	9.8	6.0	0.67
10	4.9	e4.2	e3.6	e2.7	e4.0	e4.3	11	61	22	8.9	6.4	1.5
11	4.9	e3.9	e3.5	e1.6	e4.0	e4.9	12	59	21	7.8	6.0	1.8
12	4.6	e4.0	e3.2	e1.3	e3.9	5.9	14	54	26	7.0	5.7	2.2
13	4.6	e3.9	e3.2	e1.5	e3.8	7.9	15	52	26	6.7	5.0	2.8
14	4.3	e3.8	e3.2	e1.8	e3.8	11	14	48	24	6.5	4.0	3.0
15	3.9	e4.0	e3.4	e1.7	e3.9	22	14	45	26	5.5	3.0	2.4
16	3.5	e3.9	e3.5	e1.9	e4.0	26	13	43	27	4.9	2.3	2.3
17	3.4	e3.9	e3.4	e2.1	e4.1	23	13	42	31	5.0	1.9	2.5
18	3.4	e3.7	e3.0	e2.3	e4.3	28	16	40	33	5.6	2.1	2.6
19	3.4	e3.7	e2.9	e2.4	e4.2	30	18	38	30	5.6	2.5	2.5
20	3.2	e3.7	e2.8	e2.3	e4.0	24	17	35	28	5.3	3.3	2.1
21	3.3	e3.8	e2.5	e2.3	e3.9	23	15	33	27	4.6	4.6	2.1
22	3.5	e3.8	e1.9	e2.3	e3.8	19	14	32	24	3.8	5.1	2.2
23	4.0	e3.8	e1.5	e2.3	e3.7	20	15	32	21	3.3	4.8	2.1
24	4.2	e3.7	e1.4	e2.3	e3.7	23	20	31	22	2.9	4.1	2.1
25	4.1	e3.6	e1.3	e2.4	e3.8	22	23	29	23	2.8	3.4	1.9
26	4.1	e3.7	e1.1	e2.4	e3.9	19	23	27	23	2.4	2.8	1.8
27	4.0	e3.8	e1.5	e2.5	e3.8	17	20	26	21	2.1	2.3	1.5
28	e4.1	e3.8	e1.6	e2.9	e3.4	15	19	25	20	1.7	2.0	1.3
29	e4.1	e3.8	e2.1	e3.2	---	13	20	24	19	1.5	1.6	1.1
30	e4.1	e3.2	e2.0	e3.6	---	11	26	24	18	1.3	1.3	0.97
31	e3.8	---	e1.6	e3.9	---	11	---	22	---	1.1	1.2	---
TOTAL	132.9	113.9	85.2	69.8	112.4	413.4	463	1,295	734	220.1	88.09	52.26
MEAN	4.29	3.80	2.75	2.25	4.01	13.3	15.4	41.8	24.5	7.10	2.84	1.74
MAX	5.5	4.8	3.6	3.9	4.5	30	26	61	33	18	6.4	3.0
MIN	3.2	3.2	1.1	1.3	3.4	3.2	11	22	18	1.1	0.58	0.67
AC-FT	264	226	169	138	223	820	918	2,570	1,460	437	175	104

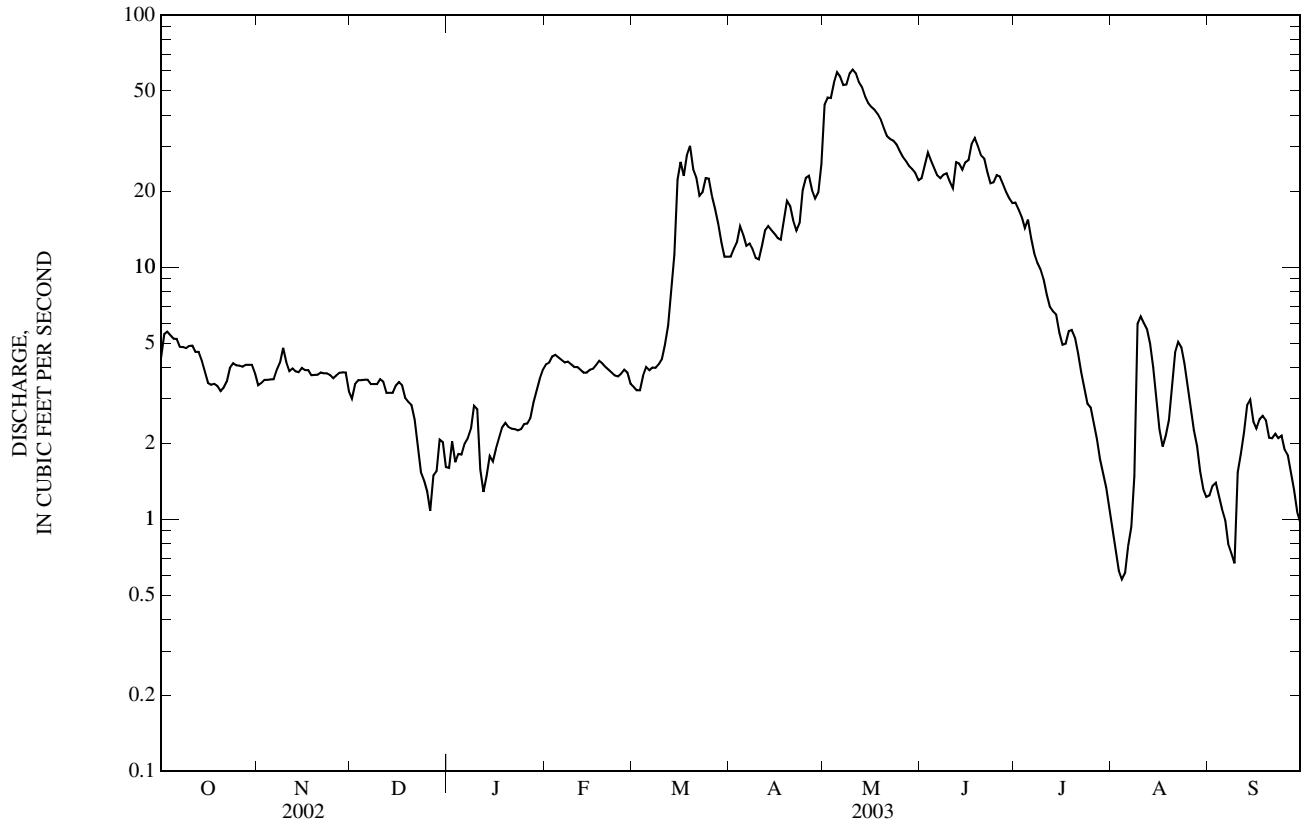
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2003, BY WATER YEAR (WY)*

MEAN	11.5	11.7	8.28	6.42	6.51	13.4	23.1	63.9	84.3	33.7	18.3	9.94
MAX	42.1	63.8	43.6	29.7	22.6	25.2	76.9	211	292	95.8	67.0	32.5
(WY)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1995)	(1995)	(1995)	(1997)	(1997)
MIN	0.000	0.006	0.076	0.10	0.010	0.74	3.47	5.11	1.58	0.047	0.001	0.000
(WY)	(1989)	(1989)	(1989)	(1989)	(1989)	(1989)	(1989)	(1989)	(1988)	(1988)	(1989)	(1988)

06407500 SPRING CREEK NEAR KEYSTONE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1987 - 2003*	
ANNUAL TOTAL	2,532.62		3,780.05			
ANNUAL MEAN	6.94		10.4		[a]24.3	
HIGHEST ANNUAL MEAN					64.7	1999
LOWEST ANNUAL MEAN					0.98	1989
HIGHEST DAILY MEAN	29	Apr 9	61	May 10	771	May 9, 1995
LOWEST DAILY MEAN	0.35	Jul 19	0.58	Aug 4	[b]0.00	Jul 27, 1988
ANNUAL SEVEN-DAY MINIMUM	0.50	Aug 20	0.74	Aug 1	0.00	Jul 27, 1988
MAXIMUM PEAK FLOW			62	May 10	913	May 9, 1995
MAXIMUM PEAK STAGE			5.37	May 10	7.96	May 9, 1995
ANNUAL RUNOFF (AC-FT)	5,020		7,500		17,610	
10 PERCENT EXCEEDS	19		26		55	
50 PERCENT EXCEEDS	3.8		4.0		9.1	
90 PERCENT EXCEEDS	1.3		1.6		0.76	

* Period using present site and datum only. See GAGE.
a Median of annual mean discharges, 15 ft^3/s.
b No flow for many days in 1988-89.
e Estimated.



06408500 SPRING CREEK NEAR HERMOSA, SD

LOCATION.--Lat 43° 56'31", long 103° 09'32", in $SE^1/_4$ $SE^1/_4$ $SE^1/_4$ sec.21, T.1 S., R.8 E., Pennington County, Hydrologic Unit 10120109, at left upstream end of county highway bridge, 0.3 mi upstream from Dakota Minnesota and Eastern Railroad bridge, and 7.5 mi north of Hermosa.

DRAINAGE AREA.--199 mi^2.

PERIOD OF RECORD.--July 1949 to current year.

REVISED RECORDS.--WSP 1729: 1950.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3,265.30 ft above NGVD of 1929. Prior to Mar. 30, 1973, nonrecording gage and crest-stage gage 210 ft upstream, and Mar. 30 to Sept. 30, 1973, water-stage recorder at present site, both at datum 2.00 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Considerable loss occurs to sinkholes in reach 10 to 15 mi upstream from station. Flow slightly regulated by Sheridan Lake, capacity, 12,657 acre-ft, 24 mi upstream from station. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.58	e0.66	0.66	e0.66	e0.68	e0.64	0.59	1.1	0.42	0.23	0.00	0.00
2	0.64	e0.66	0.67	e0.66	e0.67	e0.64	0.61	0.68	0.43	0.22	0.00	0.00
3	0.61	e0.66	0.67	e0.66	e0.66	e0.64	0.65	0.59	0.40	0.18	0.00	0.00
4	0.58	e0.66	0.67	e0.66	e0.65	e0.64	0.67	0.62	0.35	0.17	0.00	0.00
5	0.66	0.66	e0.66	e0.65	e0.64	e0.64	0.57	0.69	0.37	0.17	0.00	0.00
6	0.67	0.66	e0.66	0.65	e0.64	e0.64	0.58	0.69	0.39	0.20	0.00	0.00
7	0.65	0.66	0.66	e0.64	e0.64	e0.64	0.60	0.62	0.36	0.20	0.00	0.00
8	0.70	0.66	0.65	e0.64	e0.64	e0.64	0.59	0.65	0.36	0.20	0.00	0.00
9	0.73	0.66	0.66	e0.64	e0.64	e0.64	0.56	0.66	0.36	0.21	0.00	0.00
10	0.73	0.66	0.65	e0.64	e0.64	e0.64	0.55	0.81	0.37	0.17	0.00	0.00
11	0.83	0.66	0.66	e0.64	e0.64	e0.64	0.57	0.70	0.31	0.12	0.00	0.00
12	0.89	0.64	0.65	e0.64	e0.64	e0.64	0.52	0.59	0.31	0.02	0.00	0.00
13	0.90	0.66	0.64	e0.64	e0.64	e0.64	0.52	0.60	0.32	0.00	0.00	0.00
14	0.91	0.66	0.64	e0.64	e0.64	e0.65	0.54	0.59	0.28	0.00	0.00	0.00
15	1.00	0.66	0.65	e0.64	e0.64	e0.65	0.54	0.54	0.29	0.00	0.00	0.00
16	1.0	0.66	0.63	e0.64	e0.64	e0.66	0.49	0.52	0.28	0.00	0.00	0.00
17	1.1	0.66	0.64	e0.64	e0.68	e0.76	0.47	0.47	0.31	0.00	0.00	0.00
18	1.1	0.66	0.63	e0.64	e0.75	0.83	0.63	0.48	0.28	0.00	0.00	0.00
19	1.1	0.66	0.63	e0.64	e0.80	0.79	0.63	0.50	0.25	0.00	0.00	0.00
20	1.0	0.66	e0.57	e0.64	e0.79	0.68	0.53	0.50	0.25	0.00	0.00	0.00
21	1.1	0.66	e0.62	e0.64	e0.78	0.66	0.50	0.49	0.26	0.00	0.00	0.00
22	1.1	0.66	e0.67	e0.64	e0.72	0.66	0.51	0.49	0.26	0.00	0.00	0.00
23	1.1	0.66	e0.66	e0.64	e0.66	0.70	0.54	0.45	0.26	0.00	0.00	0.00
24	0.98	e0.66	e0.66	e0.64	e0.64	0.65	0.79	0.46	0.31	0.00	0.00	0.00
25	0.95	e0.66	e0.66	e0.64	e0.64	0.61	0.61	0.40	0.29	0.00	0.00	0.00
26	0.72	0.67	e0.66	e0.64	e0.64	0.63	0.52	0.42	0.27	0.00	0.00	0.00
27	0.64	0.69	e0.66	e0.64	e0.64	0.64	0.46	0.43	0.27	0.00	0.00	0.00
28	0.65	0.70	e0.66	e0.68	e0.64	0.64	0.50	0.40	0.26	0.00	0.00	0.00
29	0.65	0.70	e0.66	e0.68	---	0.65	0.55	0.36	0.26	0.00	0.00	0.00
30	0.66	0.66	e0.66	e0.69	---	0.60	0.74	0.28	0.25	0.00	0.00	0.00
31	e0.66	---	e0.66	e0.69	---	0.61	---	0.34	---	0.00	0.00	---
TOTAL	25.59	19.90	20.18	20.12	18.72	20.39	17.13	17.12	9.38	2.09	0.00	0.00
MEAN	0.83	0.66	0.65	0.65	0.67	0.66	0.57	0.55	0.31	0.067	0.000	0.000
MAX	1.1	0.70	0.67	0.69	0.80	0.83	0.79	1.1	0.43	0.23	0.00	0.00
MIN	0.58	0.64	0.57	0.64	0.64	0.60	0.46	0.28	0.25	0.00	0.00	0.00
AC-FT	51	39	40	40	37	40	34	34	19	4.1	0.00	0.00

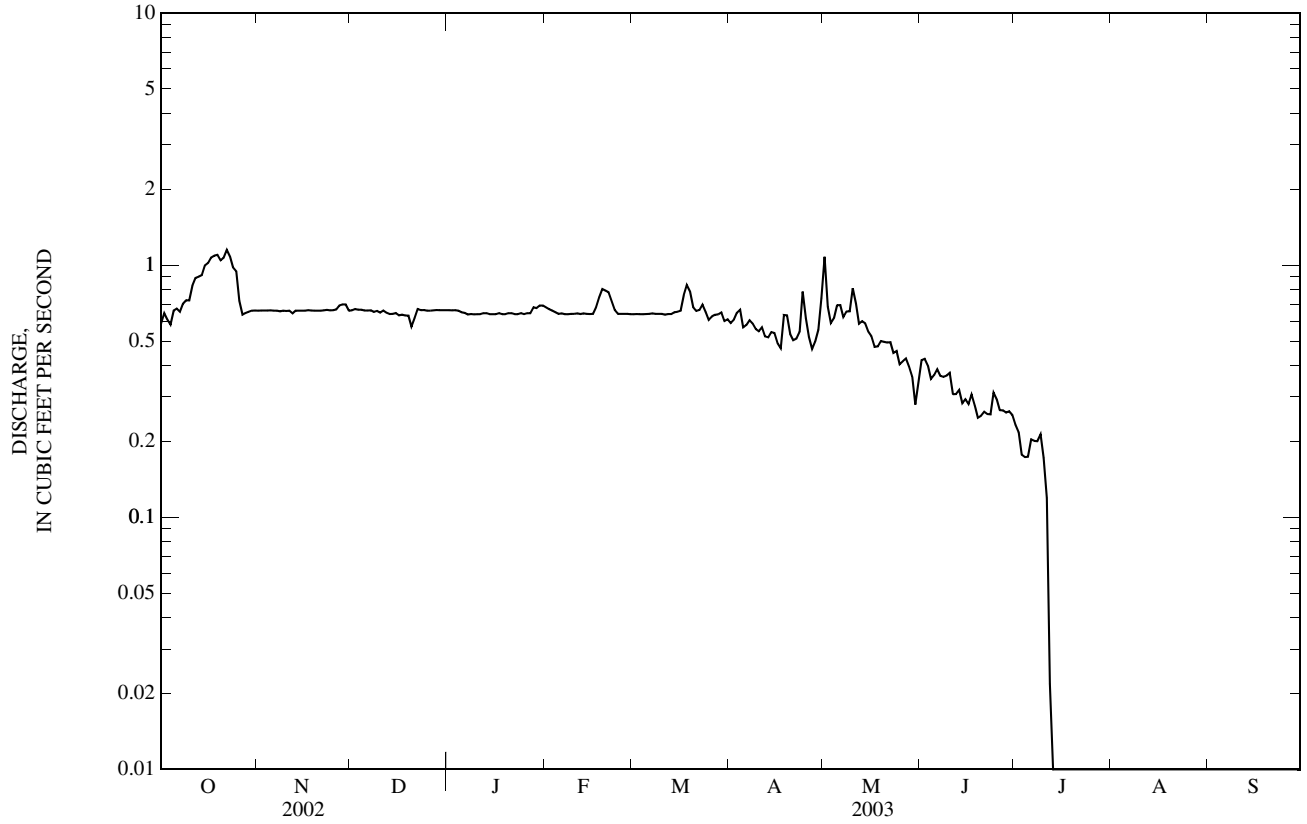
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

MEAN	1.95	2.53	1.90	1.42	1.82	1.40	2.82	18.6	40.9	12.4	4.38	1.81
MAX	24.6	48.2	28.9	10.1	20.8	7.35	54.0	166	271	73.2	53.8	17.0
(WY)	(1999)	(1999)	(1999)	(1999)	(1971)	(1999)	(1999)	(1997)	(1972)	(1962)	(1997)	(1997)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1956)	(1956)	(1957)	(1957)	(1957)	(1957)	(1961)	(1960)	(1956)	(1954)	(1951)	(1954)

06408500 SPRING CREEK NEAR HERMOSA, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1950 - 2003	
ANNUAL TOTAL	404.87		170.62			
ANNUAL MEAN	1.11		0.47		[a]7.66	
HIGHEST ANNUAL MEAN					50.7	1999
LOWEST ANNUAL MEAN					0.000	1990
HIGHEST DAILY MEAN	2.9	May 11	1.1	Oct 17	3,300	Jun 10, 1972
LOWEST DAILY MEAN	0.17	Aug 15	[b]0.00	Jul 13	[b]0.00	Jan 26, 1951
ANNUAL SEVEN-DAY MINIMUM	0.19	Aug 11	0.00	Jul 13	0.00	Jan 26, 1951
MAXIMUM PEAK FLOW			[c]1.3	Oct 22	[d]13,400	Jun 10, 1972
MAXIMUM PEAK STAGE			[f]2.65	Feb 25	[g]13.12	Jun 10, 1972
ANNUAL RUNOFF (AC-FT)	803		338		5,550	
10 PERCENT EXCEEDS	2.4		0.69		8.0	
50 PERCENT EXCEEDS	0.73		0.63		0.80	
90 PERCENT EXCEEDS	0.22		0.00		0.00	

a Median of annual mean discharges, 1.6 ft^3/s.
b No flow for many days in most years.
c Gage height, 2.38 ft.
d From rating curve extended above 350 ft^3/s on basis of contracted-opening measurement of peak flow.
e Estimated.
f Backwater from ice.
g From floodmarks, site and datum then in use.



06408700 RHOADS FORK NEAR ROCHFORD, SD

LOCATION.--Lat 44° 08'12", long 103° 51'29", in $NW^1/_4$ $SE^1/_4$ $NE^1/_4$ sec.15, T.2 N., R.2 E., Pennington County, Hydrologic Unit 10120110, Black Hills National Forest, on left bank 1.1 mi upstream from South Fork Rapid Creek and 8.7 mi west of Rochford.

DRAINAGE AREA.--7.95 mi^2, approximately.

PERIOD OF RECORD.--November 1981 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,965 ft above NGVD of 1929, from topographic map. Prior to Oct. 1, 1992, at site 35 ft downstream at datum 1.82 ft lower.

REMARKS.--Records good. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

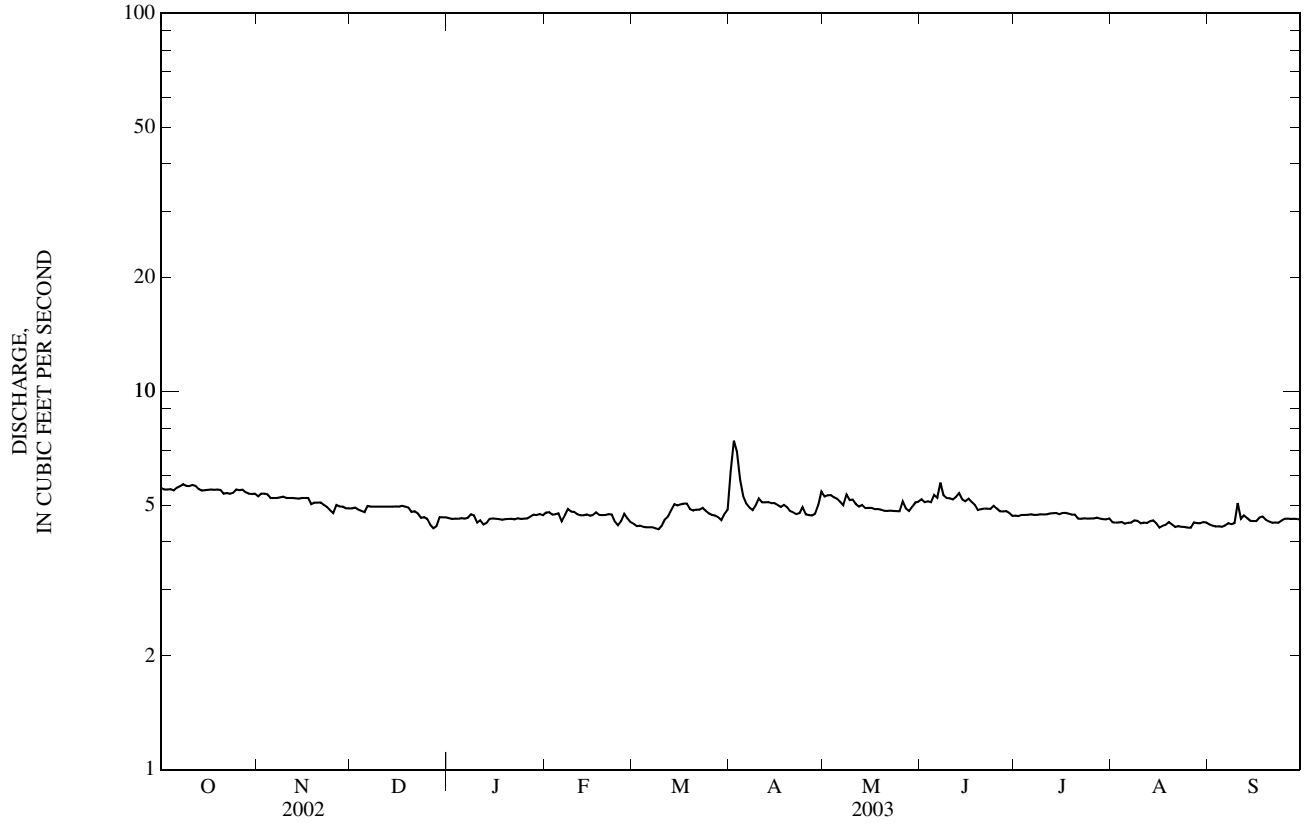
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	5.3	4.9	4.6	4.8	4.5	6.2	5.3	5.2	4.7	4.5	4.4
2	5.5	5.4	4.9	4.6	4.8	4.4	7.4	5.3	5.1	4.7	4.5	4.4
3	5.5	5.4	4.9	4.6	4.7	4.4	6.9	5.3	5.1	4.7	4.5	4.4
4	5.5	5.3	4.8	4.6	4.7	4.4	5.8	5.3	5.1	4.7	4.5	4.4
5	5.5	5.2	4.8	4.6	4.8	4.4	5.3	5.2	5.3	4.7	4.5	4.4
6	5.6	5.2	5.0	4.6	4.5	4.4	5.1	5.1	5.2	4.7	4.5	4.4
7	5.6	5.2	5.0	4.6	4.7	4.4	4.9	5.0	5.7	4.7	4.5	4.5
8	5.7	5.2	5.0	4.7	4.9	4.3	4.9	5.3	5.3	4.7	4.6	4.5
9	5.6	5.3	5.0	4.7	4.8	4.3	5.0	5.2	5.2	4.7	4.5	4.5
10	5.6	5.2	5.0	4.5	4.8	4.4	5.2	5.2	5.2	4.7	4.5	5.1
11	5.7	5.2	5.0	4.6	4.7	4.6	5.1	5.0	5.2	4.7	4.5	4.6
12	5.6	5.2	5.0	4.4	4.7	4.7	5.1	5.0	5.3	4.8	4.5	4.7
13	5.5	5.2	5.0	4.5	4.7	4.9	5.1	5.0	5.4	4.8	4.5	4.6
14	5.5	5.2	5.0	4.6	4.7	5.0	5.1	4.9	5.2	4.8	4.6	4.5
15	5.5	5.2	5.0	4.6	4.7	5.0	5.1	4.9	5.1	4.7	4.5	4.5
16	5.5	5.2	5.0	4.6	4.7	5.0	5.0	4.9	5.2	4.8	4.4	4.5
17	5.5	5.2	5.0	4.6	4.8	5.1	5.0	4.9	5.1	4.8	4.4	4.6
18	5.5	5.0	5.0	4.6	4.7	5.1	5.0	4.9	5.0	4.8	4.4	4.7
19	5.5	5.1	4.9	4.6	4.7	4.9	4.9	4.9	4.9	4.7	4.5	4.6
20	5.5	5.1	4.8	4.6	4.7	4.8	4.8	4.8	4.9	4.7	4.5	4.5
21	5.4	5.1	4.8	4.6	4.7	4.9	4.8	4.8	4.9	4.6	4.4	4.5
22	5.4	5.0	4.8	4.6	4.7	4.9	4.7	4.8	4.9	4.6	4.4	4.5
23	5.4	5.0	4.6	4.6	4.5	4.9	4.8	4.8	4.9	4.6	4.4	4.5
24	5.4	4.9	4.7	4.6	4.4	4.8	4.9	4.8	5.0	4.6	4.4	4.6
25	5.5	4.8	4.6	4.6	4.5	4.8	4.7	4.8	4.9	4.6	4.4	4.6
26	5.5	5.0	4.4	4.6	4.8	4.7	4.7	5.1	4.8	4.6	4.4	4.6
27	5.5	5.0	4.4	4.7	4.6	4.7	4.7	4.9	4.8	4.6	4.5	4.6
28	5.4	5.0	4.4	4.7	4.5	4.7	4.8	4.8	4.8	4.6	4.5	4.6
29	5.4	4.9	4.7	4.7	---	4.6	5.0	5.0	4.8	4.6	4.5	4.6
30	5.4	4.9	4.7	4.7	---	4.7	5.4	5.1	4.7	4.6	4.5	4.6
31	5.4	---	4.7	4.7	---	4.9	---	5.1	---	4.6	4.5	---
TOTAL	170.7	153.9	149.8	142.9	131.3	145.6	155.4	155.4	152.2	145.2	138.8	136.5
MEAN	5.51	5.13	4.83	4.61	4.69	4.70	5.18	5.01	5.07	4.68	4.48	4.55
MAX	5.7	5.4	5.0	4.7	4.9	5.1	7.4	5.3	5.7	4.8	4.6	5.1
MIN	5.4	4.8	4.4	4.4	4.4	4.3	4.7	4.8	4.7	4.6	4.4	4.4
AC-FT	339	305	297	283	260	289	308	308	302	288	275	271

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

MEAN	6.00	5.92	5.79	5.74	5.79	5.84	5.93	6.01	6.10	6.09	5.96	5.95
MAX	9.41	9.70	9.78	10.0	10.0	9.82	9.82	9.51	9.51	9.50	9.53	9.96
(WY)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(1999)	(1998)	(1999)
MIN	3.66	3.42	3.30	3.25	3.57	3.60	3.77	3.92	3.79	3.82	3.74	3.78
(WY)	(1991)	(1991)	(1991)	(1991)	(1993)	(1993)	(1993)	(1992)	(1992)	(1992)	(1992)	(1992)

06408700 RHOADS FORK NEAR ROCHFORD, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	2,037.8		1,777.7			
ANNUAL MEAN	5.58		4.87		5.93	
HIGHEST ANNUAL MEAN					9.55	2000
LOWEST ANNUAL MEAN					3.69	1991
HIGHEST DAILY MEAN	8.0	Apr 11	7.4	Apr 2	12	Jun 18, 1998
LOWEST DAILY MEAN	4.4	Dec 26	4.3	Mar 8	3.1	Jan 19, 1991
ANNUAL SEVEN-DAY MINIMUM	4.5	Dec 23	4.4	Mar 3	3.1	Jan 18, 1991
MAXIMUM PEAK FLOW			9.2	Apr 1	17	Jul 9, 2001
MAXIMUM PEAK STAGE			3.82	Apr 1	4.13	Jul 9, 2001
ANNUAL RUNOFF (AC-FT)	4,040		3,530		4,290	
10 PERCENT EXCEEDS	6.0		5.4		8.7	
50 PERCENT EXCEEDS	5.7		4.8		5.5	
90 PERCENT EXCEEDS	5.0		4.5		3.8	



06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD
(Hydrologic bench-mark station)

LOCATION.--Lat 44° 00'49", long 103° 49'48", in NE$^1/_4$ SW$^1/_4$ SW$^1/_4$ sec.25, T.1 N., R.2 E., Pennington County, Hydrologic Unit 10120110, at downstream end of highway culvert, 330 ft downstream from South Fork Castle Creek, 500 ft upstream from high-water line of Deerfield Reservoir, 2.5 mi southwest of Deerfield Dam, and 14 mi northwest of Hill City.

DRAINAGE AREA.--79.2 mi^2.

PERIOD OF RECORD.--June 1948 to current year. Prior to October 1953, published as "above Deerfield Reservoir, near Deerfield."

REVISED RECORDS.--WSP 1917: 1952(M). WDR SD-84-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5,920 ft above NGVD of 1929, from Highway Department bench mark. Prior to Aug. 31, 1948, nonrecording gage at site 130 ft upstream at datum 2.05 ft higher. Sept. 1, 1948, to May 17, 1983, at same location and datum. May 18, 1983, to Oct. 11, 1985, at site 300 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	e8.5	e7.2	11	e10	8.6	e83	20	14	12	9.7	11
2	13	e10	e7.0	10	e8.5	8.6	56	24	14	12	9.7	10
3	12	15	e6.8	10	e8.0	8.6	30	23	14	11	9.5	11
4	12	16	e7.0	10	e7.5	8.2	20	21	13	11	9.4	11
5	12	16	e7.0	10	e6.5	8.0	18	20	14	11	9.3	11
6	12	14	e6.8	10	e6.0	8.1	16	19	15	11	9.3	10
7	12	12	e6.8	10	e5.8	8.1	15	18	18	10	9.4	11
8	13	12	e6.8	10	e6.5	8.0	17	22	17	10	10	11
9	13	e9.7	e7.0	e7.0	e7.2	7.9	23	20	14	10	11	11
10	13	e9.4	e7.5	e6.2	9.4	8.2	31	19	14	9.9	10	15
11	12	12	e7.5	e6.5	9.2	8.6	32	18	13	10	9.7	12
12	12	12	e7.5	e7.0	8.4	e9.5	28	17	15	10	9.5	11
13	12	12	e7.2	e7.2	8.3	e12	22	17	16	9.8	9.4	11
14	12	12	e7.5	e7.0	8.4	e19	20	16	14	9.7	9.6	11
15	12	12	e8.0	e6.5	8.5	e17	19	15	16	9.5	9.6	10
16	12	13	e7.5	e6.0	8.6	e17	19	15	20	9.9	9.6	10
17	12	12	e7.2	e6.0	8.7	e18	18	15	18	9.6	10	11
18	12	12	e7.2	e7.0	8.7	e16	19	15	16	9.7	11	11
19	12	12	e7.0	e8.0	8.7	16	18	15	15	9.6	12	11
20	e11	12	e6.5	e8.2	8.6	16	17	15	14	9.4	12	11
21	e11	12	e6.5	e7.5	e7.5	e17	16	15	14	9.3	11	11
22	e11	e7.5	e6.2	e8.2	e7.6	e19	16	15	14	9.3	10	11
23	e9.2	e5.5	e6.2	e9.0	e7.0	e25	16	14	14	9.2	10	11
24	e8.0	e5.2	e6.2	e9.2	e5.5	e22	19	14	14	9.1	10	11
25	e10	e5.2	e6.2	e9.2	e5.0	20	17	14	15	9.4	10	11
26	e9.5	e6.0	e6.2	e9.2	e6.5	18	16	15	14	9.7	10	11
27	e8.5	e7.0	11	e9.2	e7.2	15	15	16	13	10	10	11
28	e8.0	e7.5	13	e9.2	8.9	14	16	14	13	10	10	10
29	e7.5	e7.5	14	e9.2	---	37	18	13	13	9.7	10	11
30	e7.2	e7.5	12	e9.0	---	e20	22	12	12	9.5	11	11
31	e7.5	---	11	e9.5	---	e110	---	13	---	9.6	11	---
TOTAL	341.4	314.5	241.5	262.0	216.7	548.4	692	519	440	309.9	312.7	330
MEAN	11.0	10.5	7.79	8.45	7.74	17.7	23.1	16.7	14.7	10.0	10.1	11.0
MAX	13	16	14	11	10	110	83	24	20	12	12	15
MIN	7.2	5.2	6.2	6.0	5.0	7.9	15	12	12	9.1	9.3	10
AC-FT	677	624	479	520	430	1,090	1,370	1,030	873	615	620	655

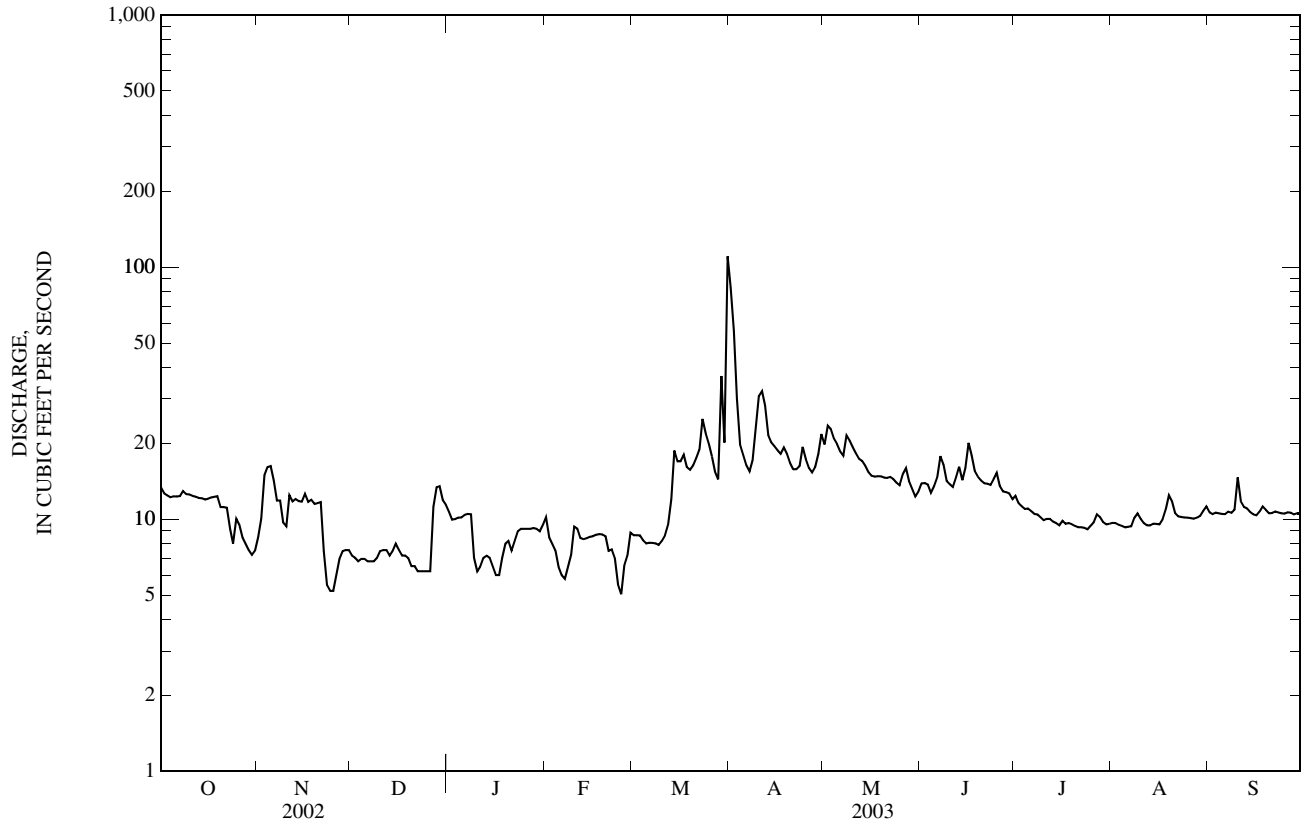
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2003, BY WATER YEAR (WY)

MEAN	11.2	10.6	9.86	9.43	9.53	12.0	17.0	18.2	16.4	13.1	11.5	11.0
MAX	26.5	25.8	22.7	21.9	23.6	34.7	36.2	45.2	50.5	42.0	34.1	30.8
(WY)	(1998)	(1999)	(2000)	(1999)	(2000)	(1999)	(1999)	(1997)	(1999)	(1999)	(1999)	(1999)
MIN	3.93	3.85	2.74	3.98	5.06	5.81	6.83	6.56	4.69	4.05	4.63	4.36
(WY)	(1961)	(1962)	(1962)	(1962)	(1962)	(1961)	(1961)	(1961)	(1961)	(1961)	(1960)	(1961)

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1949 - 2003	
ANNUAL TOTAL	4,943.4		4,528.1			
ANNUAL MEAN	13.5		12.4		12.5	
HIGHEST ANNUAL MEAN					32.1	1999
LOWEST ANNUAL MEAN					5.13	1961
HIGHEST DAILY MEAN	70	Apr 10	110	Mar 31	232	May 22, 1952
LOWEST DAILY MEAN	5.2	Nov 24	5.0	Feb 25	2.0	Dec 10, 1961
ANNUAL SEVEN-DAY MINIMUM	6.3	Nov 22	6.3	Nov 22	2.2	Dec 15, 1961
MAXIMUM PEAK FLOW			[a]288	Mar 31	[b]1,120	May 22, 1952
MAXIMUM PEAK STAGE			[c]4.50	Jan 27	5.81	May 22, 1952
ANNUAL RUNOFF (AC-FT)	9,810		8,980		9,040	
10 PERCENT EXCEEDS	18		18		21	
50 PERCENT EXCEEDS	12		11		10	
90 PERCENT EXCEEDS	7.5		7.0		6.3	

a Gage height, 4.38 ft.
b From rating curve extended on basis of slope-area measurement.
c Backwater from ice.
e Estimated.



06409500 DEERFIELD RESERVOIR NEAR HILL CITY, SD

LOCATION.--Lat 44°01'41", long 103°47'09", in NE$^1/_4$ SW$^1/_4$ sec.20, T.1 N., R.3 E., at dam on Castle Creek, Hydrologic Unit 10120110, 0.4 mi upstream from Dutchman Creek and 12.5 mi northwest of Hill City.

DRAINAGE AREA.--95 mi^2, approximately.

PERIOD OF RECORD.--May 1947 to current year (monthend contents only). Some elevations obtained during period of initial filling, December 1945 to May 1947, are available in Bureau of Reclamation files. Prior to October 1953, published as "near Deerfield."

GAGE.--Water-stage recorder. Elevations listed to NGVD of 1929 (levels by Bureau of Reclamation). Prior to July 20, 1964, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 3, 1945; dam completed in 1947. Conservation capacity, 15,504 acre-ft between elevations 5,839.0 ft (lowest outlet) and 5,908.0 ft (crest of spillway). Dead storage below elevation 5,839.0 ft, 151 acre-ft. Surcharge capacity, 26,700 acre-ft between elevations 5,908.0 ft and 5,953.0 ft. Figures given herein represent conservation and surcharge contents above elevation 5,839.0 ft. Water is used to supplement Rapid City water supply and for irrigation in Rapid Creek basin downstream from Rapid City.

COOPERATION.--Records of elevation and contents provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 16,006 acre-ft Feb. 25, 1985 (elevation, 5,909.05 ft); minimum observed, 429 acre-ft, Oct. 2, 1959 (elevation, 5,839.10 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,400 acre-ft, Apr. 15, elevation, 5,907.74 ft; minimum, 14,000 acre-ft, Mar. 13, elevation, 5,904.22 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	5,906.55	14,900	--
Oct. 31	5,906.23	14,800	-100
Nov. 30	5,905.84	14,600	-200
Dec. 31	5,905.56	14,500	-100
CAL YR 2002	--	--	-500
Jan. 31	5,904.77	14,200	-300
Feb. 28	5,904.27	14,000	-200
Mar. 31	5,906.31	14,800	+800
Apr. 30	5,907.49	15,300	+700
May 31	5,907.45	15,300	0
June 30	5,907.56	15,300	0
July 31	5,907.17	15,200	-100
Aug. 31	5,906.96	15,100	-100
Sept. 30	5,906.84	15,000	-100
WTR YR 2003	--	--	+300

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06410000 CASTLE CREEK BELOW DEERFIELD DAM, SD

LOCATION.--Lat 44° 01'45", long 103° 46'53", in NW$^1/_4$ SE$^1/_4$ sec.20, T.1 N., R.3 E., Pennington County, Hydrologic Unit 10120110, on left bank 200 ft upstream from Dutchman Creek, 1,100 ft downstream from Deerfield Dam, and 12.5 mi northwest of Hill City.

DRAINAGE AREA.--96 mi^2, approximately.

PERIOD OF RECORD.--July 1946 to current year, seasonal records only beginning October 1983.

GAGE.--Water-stage recorder. Datum of gage is 5,784.52 ft above NGVD of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 15, 1947, at site 400 ft downstream at datum 0.23 ft higher. Oct. 15, 1947, to Sept. 1, 1948, at site 550 ft downstream at datum 1.77 ft lower, and Sept. 2, 1948, to Nov. 2, 1971, at site 300 ft upstream at datum 4.0 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Deerfield Dam, 1,100 ft upstream. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 200 ft^3/s, May 22, 1952; maximum gage height, 5.08 ft, present datum, June 5, 1991; no flow at times in 1948, 1950-60.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 47 ft^3/s, Sept. 17, gage height, 4.42 ft; minimum daily discharge, 7.7 ft^3/s, Apr. 8, 9.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	16	11	27	16	18	9.2	10
2	---	---	---	---	---	16	9.2	27	16	18	9.1	10
3	---	---	---	---	---	16	8.0	27	16	17	8.9	9.6
4	---	---	---	---	---	16	7.9	27	16	17	9.1	9.5
5	---	---	---	---	---	16	7.8	27	16	17	9.5	9.6
6	---	---	---	---	---	16	7.8	26	17	17	9.4	9.9
7	---	---	---	---	---	16	7.8	25	17	18	9.5	11
8	---	---	---	---	---	16	7.7	26	17	14	9.6	11
9	---	---	---	---	---	16	7.7	26	17	11	9.8	11
10	---	---	---	---	---	16	7.8	26	16	11	9.7	11
11	---	---	---	---	---	15	9.9	26	16	10	9.5	12
12	---	---	---	---	---	14	13	25	16	11	9.6	11
13	---	---	---	---	---	14	13	25	17	10	9.7	11
14	---	---	---	---	---	15	13	21	18	11	9.6	11
15	---	---	---	---	---	14	13	15	17	10	9.7	11
16	---	---	---	---	---	15	18	15	16	8.9	10	11
17	---	---	---	---	---	16	24	15	17	8.9	10	8.9
18	---	---	---	---	---	16	24	15	17	9.0	10	10
19	---	---	---	---	---	15	24	15	17	8.9	10	9.9
20	---	---	---	---	---	15	24	15	18	8.9	10	9.9
21	---	---	---	---	---	14	24	15	18	8.9	10	10
22	---	---	---	---	---	14	24	16	18	9.1	10	10
23	---	---	---	---	---	14	24	16	17	9.2	10	11
24	---	---	---	---	---	14	24	16	17	9.2	9.6	10
25	---	---	---	---	---	13	24	16	17	9.3	9.5	9.7
26	---	---	---	---	---	11	24	16	18	9.3	9.7	9.6
27	---	---	---	---	---	10	24	16	18	9.2	9.7	9.9
28	---	---	---	---	---	11	24	16	18	9.4	9.8	9.9
29	---	---	---	---	---	11	24	16	18	9.3	9.6	10
30	---	---	---	---	---	11	26	16	19	9.1	9.5	10
31	---	---	---	---	---	10	---	17	---	9.0	9.9	---
TOTAL	---	---	---	---	---	442	500.6	627	511	355.6	299.2	308.4
MEAN	---	---	---	---	---	14.3	16.7	20.2	17.0	11.5	9.65	10.3
MAX	---	---	---	---	---	16	26	27	19	18	10	12
MIN	---	---	---	---	---	10	7.7	15	16	8.9	8.9	8.9
AC-FT	---	---	---	---	---	877	993	1,240	1,010	705	593	612

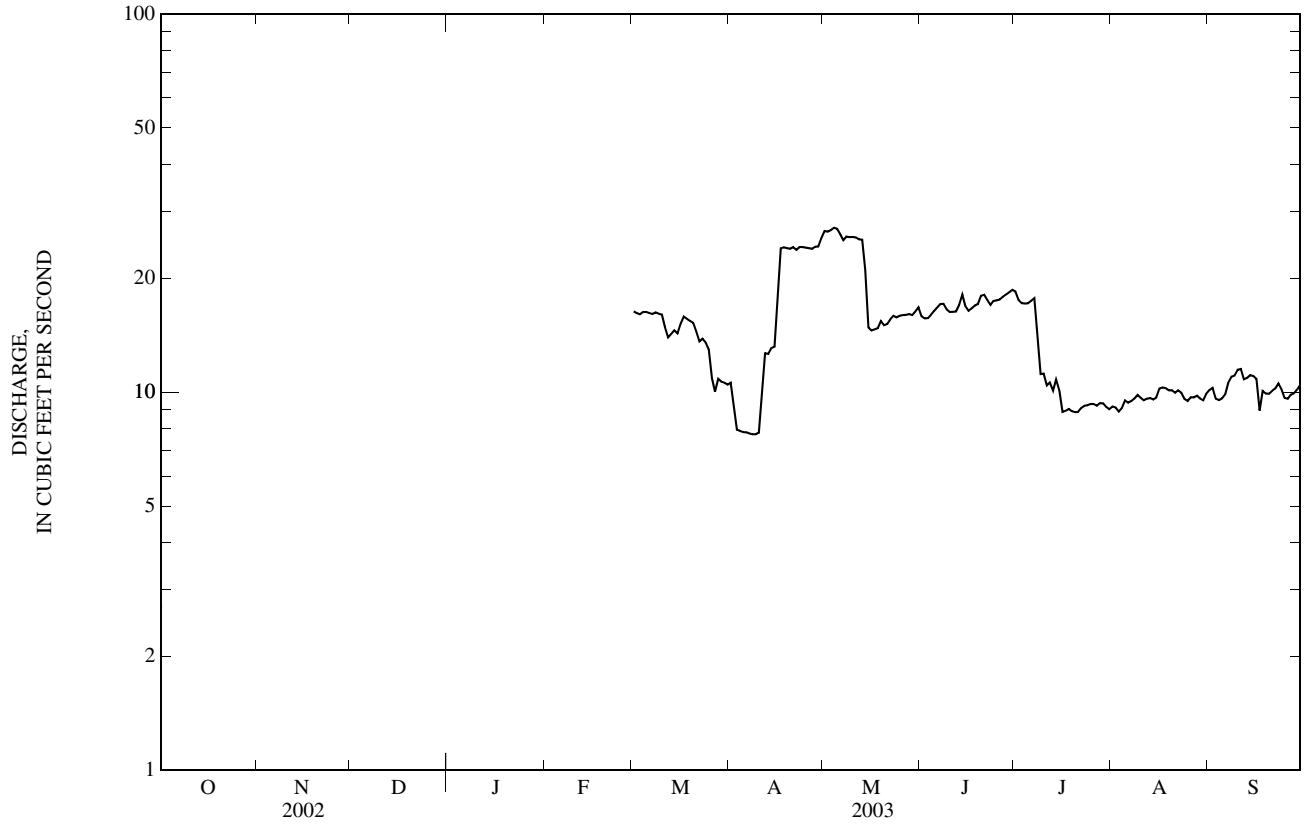
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1983, BY WATER YEAR (WY)*

MEAN	11.2	2.43	2.08	2.22	2.85	5.25	14.1	19.0	16.9	16.7	18.8	21.1
MAX	40.0	7.69	2.72	3.48	12.6	15.5	44.1	46.8	50.0	81.1	72.7	64.2
(WY)	(1966)	(1949)	(1948)	(1978)	(1979)	(1979)	(1982)	(1978)	(1965)	(1982)	(1982)	(1959)
MIN	0.20	0.017	0.22	1.53	1.26	1.56	1.59	1.59	2.39	2.13	3.78	4.05
(WY)	(1947)	(1960)	(1947)	(1983)	(1971)	(1960)	(1960)	(1960)	(1962)	(1962)	(1962)	(1983)

06410000 CASTLE CREEK BELOW DEERFIELD DAM, SD—Continued

SUMMARY STATISTICS	WATER YEARS 1947 - 1983*	
ANNUAL MEAN	11.1	
HIGHEST ANNUAL MEAN	30.9	1982
LOWEST ANNUAL MEAN	2.62	1960
HIGHEST DAILY MEAN	200	May 22, 1952
LOWEST DAILY MEAN	0.00	Sep 9, 1948
ANNUAL SEVEN-DAY MINIMUM	0.00	Oct 15, 1959
ANNUAL RUNOFF (AC-FT)	8,030	
10 PERCENT EXCEEDS	26	
50 PERCENT EXCEEDS	4.9	
90 PERCENT EXCEEDS	1.9	

* Period reflects complete water years.



06410500 RAPID CREEK ABOVE PACTOLA RESERVOIR, AT SILVER CITY, SD

LOCATION.--Lat 44° 05'05", long 103° 34'48", in $SW^1/_4$ $SE^1/_4$ sec.36, T.2 N., R.4 E., Pennington County, Hydrologic Unit 10120110, on right bank 0.8 mi west of Silver City and 3.0 mi downstream from Slate Creek.

DRAINAGE AREA.--292 mi^2.

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,620.00 ft above NGVD of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Deerfield Dam on Castle Creek since December 1945. Satellite data-collection platform at site. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	e22	e19	e22	e23	e19	51	91	67	57	28	28
2	32	e22	e19	e23	e24	e20	54	96	69	54	28	26
3	31	e22	e18	e25	e23	e20	45	117	66	51	28	25
4	29	e22	e18	e26	e22	e21	40	126	65	51	27	24
5	29	e22	e17	e27	e20	e22	35	125	64	51	26	23
6	28	e22	e17	e25	e19	e22	38	126	70	50	26	23
7	28	e22	e18	e22	e18	e23	35	124	71	48	26	23
8	29	e23	e18	e19	e18	e24	32	129	79	47	27	23
9	29	e23	e18	e18	e18	e25	36	146	65	41	28	22
10	28	e22	e18	e17	e18	e28	39	136	61	38	27	32
11	28	e22	e18	e17	e19	e31	40	136	63	37	26	30
12	28	e22	e19	e18	e21	e37	42	129	58	37	31	26
13	27	e22	e20	e19	e25	e58	43	125	60	36	25	28
14	28	e21	e20	e19	e29	e190	42	119	80	35	23	26
15	28	e19	e21	e19	e30	e150	41	107	98	34	23	25
16	28	e19	e21	e18	e31	e66	41	101	97	33	22	24
17	27	e19	e20	e18	e31	e51	44	100	110	33	22	25
18	27	e18	e19	e19	e31	e42	50	97	97	33	28	26
19	27	e18	e18	e19	e30	e37	55	91	89	33	27	27
20	27	e18	e17	e19	e28	36	53	92	85	32	35	25
21	27	e19	e17	e17	e25	36	51	87	80	31	29	25
22	28	e19	e17	e16	e21	39	50	83	75	31	26	24
23	27	e18	e17	e15	e18	49	52	82	74	30	24	23
24	26	e18	e17	e16	e18	58	58	78	76	29	23	23
25	e26	e17	e18	e17	e18	46	57	77	82	29	23	23
26	e26	e17	e18	e18	e18	45	51	76	71	28	22	23
27	e26	e18	e19	e19	e19	41	48	76	65	32	22	24
28	e25	e18	e20	e21	e19	34	51	70	62	32	23	24
29	e24	e19	e20	e22	---	36	62	67	61	30	24	23
30	e23	e19	e20	e22	---	41	84	64	59	29	26	24
31	e23	---	e21	e23	---	43	---	65	---	28	28	---
TOTAL	851	602	577	615	634	1,390	1,420	3,138	2,219	1,160	803	747
MEAN	27.5	20.1	18.6	19.8	22.6	44.8	47.3	101	74.0	37.4	25.9	24.9
MAX	32	23	21	27	31	190	84	146	110	57	35	32
MIN	23	17	17	15	18	19	32	64	58	28	22	22
AC-FT	1,690	1,190	1,140	1,220	1,260	2,760	2,820	6,220	4,400	2,300	1,590	1,480

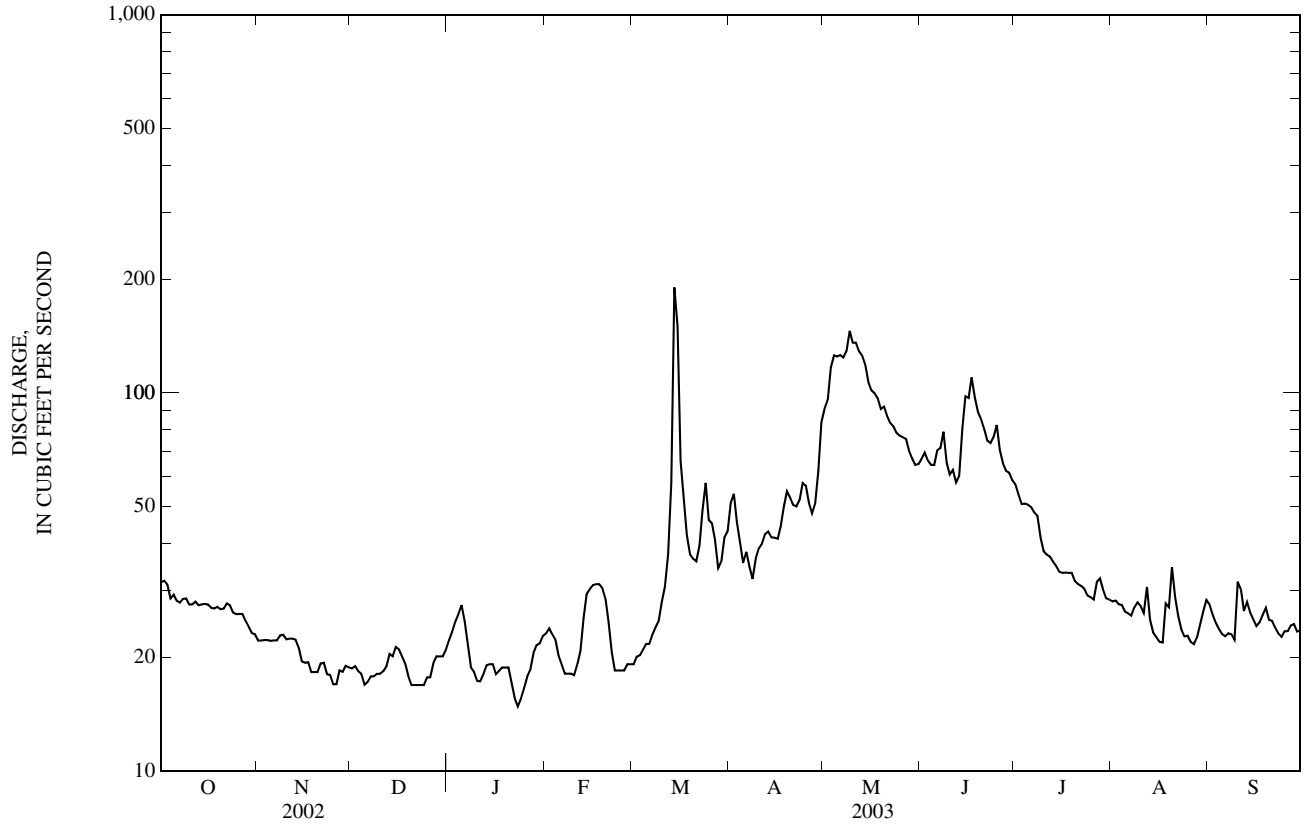
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)

MEAN	33.6	24.8	20.0	19.2	21.9	36.9	68.7	97.3	102	59.5	48.1	40.5
MAX	134	129	103	83.7	68.4	118	232	322	330	230	205	117
(WY)	(1999)	(1999)	(1999)	(1999)	(1999)	(1996)	(1997)	(1997)	(1999)	(1998)	(1997)	(1998)
MIN	10.2	10.3	7.77	8.61	8.34	12.1	16.5	14.5	14.7	15.2	11.5	10.5
(WY)	(1962)	(1962)	(1962)	(1962)	(1993)	(1962)	(1961)	(1961)	(1961)	(1961)	(1961)	(1961)

06410500 RAPID CREEK ABOVE PACTOLA RESERVOIR, AT SILVER CITY, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003	
ANNUAL TOTAL	11,837		14,156			
ANNUAL MEAN	32.4		38.8		47.8	
HIGHEST ANNUAL MEAN					142	1999
LOWEST ANNUAL MEAN					15.1	1961
HIGHEST DAILY MEAN	99	Apr 8	190	Mar 14	1,330	May 15, 1965
LOWEST DAILY MEAN	17	Nov 25	15	Jan 23	2.5	Dec 2, 1985
ANNUAL SEVEN-DAY MINIMUM	17	Dec 19	17	Jan 20	3.6	Nov 27, 1985
MAXIMUM PEAK FLOW			210	Mar 15	[a]2,060	May 15, 1965
MAXIMUM PEAK STAGE			[b]6.04	Mar 15	10.44	May 15, 1965
ANNUAL RUNOFF (AC-FT)	23,480		28,080		34,630	
10 PERCENT EXCEEDS	55		78		95	
50 PERCENT EXCEEDS	28		27		31	
90 PERCENT EXCEEDS	19		18		13	

a From rating curve extended above 1,000 ft^3/s on basis of slope-area measurement of peak flow.
b Backwater from ice.
e Estimated.



06411000 PACTOLA RESERVOIR NEAR SILVER CITY, SD

LOCATION.--Lat 44°04'20", long 103°29'17", in NE$^1/_4$ SW$^1/_4$ sec.2, T.1 N., R.5 E., Pennington County, Hydrologic Unit 10120110, in outlet works of dam on Rapid Creek, 3.8 mi east of Silver City.

DRAINAGE AREA.--319 mi^2.

PERIOD OF RECORD.--August 1956 to current year (monthend contents only).

GAGE.--Water-stage recorder. Elevations listed to NGVD of 1929 (Bureau of Reclamation datum). Prior to Feb. 18, 1970, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by an earthfill dam completed August 1956. Storage began Aug. 22, 1956. Conservation capacity, 54,955 acre-ft between elevations 4,456.1 ft and 4,580.2 ft. Combined dead and inactive storage below elevation 4,456.1 ft is 1,017 acre-ft. Flood storage capacity, 43,057 acre-ft between elevations 4,580.2 ft and 4,621.5 ft (crest of spillway). Surcharge capacity, 41,892 acre-ft between elevations 4,621.5 ft and 4,651.7 ft (maximum pool elevation). Figures given herein represent contents above elevation 4,456.1 ft. Reservoir provides flood control and water for municipal and irrigation uses.

COOPERATION.--Records of elevation and contents provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 60,970 acre-ft, May 19, 1965, elevation, 4,585.87 ft; minimum observed, 24,000 acre-ft, Sept. 30, 1990, elevation, 4,531.74 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 55,400 acre-ft, June 17, elevation, 4,580.71 ft; minimum, 45,200 acre-ft, Oct. 1, elevation, 4,568.02 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	4,568.00	45,200	--
Oct. 31	4,568.38	45,500	+300
Nov. 30	4,568.68	45,700	+200
Dec. 31	4,568.75	45,800	+100
CAL YR 2002	--	--	-6,600
Jan. 31	4,569.30	46,200	+400
Feb. 28	4,569.74	46,500	+300
Mar. 31	4,572.29	48,500	+2,000
Apr. 30	4,575.50	51,000	+2,500
May 31	4,580.35	55,100	+4,100
June 30	4,580.30	55,000	-100
July 31	4,576.51	51,800	-3,200
Aug. 31	4,571.72	48,000	-3,800
Sept. 30	4,570.44	47,000	-1,000
WTR YR 2003	--	--	+1,800

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06411500 RAPID CREEK BELOW PACTOLA DAM, SD

LOCATION.--Lat 44° 04'36", long 103° 28'54", in $SW^1/_4$ $NE^1/_4$ sec.2, T.1 N., R.5 E., Pennington County, Hydrologic Unit 10120110, on right bank 2,000 ft downstream from Pactola Dam, 3.9 mi upstream from Deer Creek, and 13.0 mi west of Rapid City.

DRAINAGE AREA.--320 mi^2, approximately.

PERIOD OF RECORD.--October 1928 to September 1932 (combined records of Creek and Dakota Power and Light Co. flume), July 1946 to current year. Prior to October 1953, published as "near Pactola." Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1931(M).

GAGE.--Water-stage recorder and concrete control since Oct. 16, 1962. Datum of gage is 4,406.00 ft above NGVD of 1929 (Bureau of Reclamation bench mark). Apr. 19, 1929, to June 30, 1932, nonrecording gage at site 3,500 ft upstream at different datum. July 24, 1946, to Aug. 24, 1947, nonrecording gage and Aug. 25, 1947, to Nov. 18, 1953, water-stage recorder, at site 2.0 mi upstream at different datum.

REMARKS.--Records good. Flow regulated by dam on Castle Creek since Dec. 3, 1945, and completely regulated by Pactola Dam 2,000 ft upstream since Aug. 22, 1956 (reservoir filled from August 1956 to June 1963). Maximum discharge prior to Sept. 30, 1963, 2,170 ft^3/s, May 22, 1952, gage height, 6.74 ft, site and datum then in use; minimum daily discharge, 0.0 ft^3/s, Oct. 11-17, 1962. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	21	21	21	20	19	20	21	64	81	83	65
2	26	21	21	21	20	19	20	20	64	81	83	59
3	21	21	21	21	20	19	20	20	64	e66	83	57
4	20	21	21	21	20	19	20	20	64	e60	78	57
5	20	21	21	21	20	19	20	20	64	e60	77	56
6	20	21	21	21	20	20	20	20	64	e60	89	57
7	20	21	21	21	e20	19	20	20	64	e60	90	57
8	21	21	22	21	20	19	20	20	64	e60	90	57
9	20	21	22	20	19	19	20	20	64	e77	90	57
10	21	21	22	20	19	19	20	20	64	e88	90	43
11	21	21	21	20	19	20	20	20	64	84	86	36
12	20	21	21	21	19	20	20	20	64	84	77	36
13	20	21	21	20	19	20	20	20	64	86	74	36
14	20	21	21	21	20	20	20	20	64	86	75	36
15	21	22	21	21	20	20	19	20	64	87	84	36
16	21	21	20	21	20	20	20	29	68	91	90	29
17	21	21	21	21	20	20	20	39	74	91	89	25
18	21	21	21	21	20	20	20	39	94	e80	89	25
19	21	21	20	20	20	20	20	45	107	e75	90	25
20	20	21	21	20	20	20	20	51	107	e83	84	25
21	20	21	21	20	20	20	20	57	107	e87	79	26
22	21	21	21	20	20	20	20	64	106	e83	83	25
23	21	21	20	20	20	20	20	69	98	e86	85	25
24	21	21	21	20	20	20	20	73	91	96	85	25
25	21	21	21	20	20	20	20	74	90	99	85	25
26	21	21	21	20	20	20	20	73	91	99	84	25
27	21	21	21	20	19	20	20	73	86	98	80	25
28	21	21	21	20	19	20	20	73	81	96	77	25
29	21	21	21	20	---	20	20	74	81	88	70	25
30	21	21	21	20	---	20	21	69	81	83	65	25
31	21	---	21	20	---	20	---	64	---	83	65	---
TOTAL	659	631	651	634	553	611	600	1,267	2,322	2,538	2,549	1,125
MEAN	21.3	21.0	21.0	20.5	19.8	19.7	20.0	40.9	77.4	81.9	82.2	37.5
MAX	34	22	22	21	20	20	21	74	107	99	90	65
MIN	20	21	20	20	19	19	19	20	64	60	65	25
AC-FT	1,310	1,250	1,290	1,260	1,100	1,210	1,190	2,510	4,610	5,030	5,060	2,230

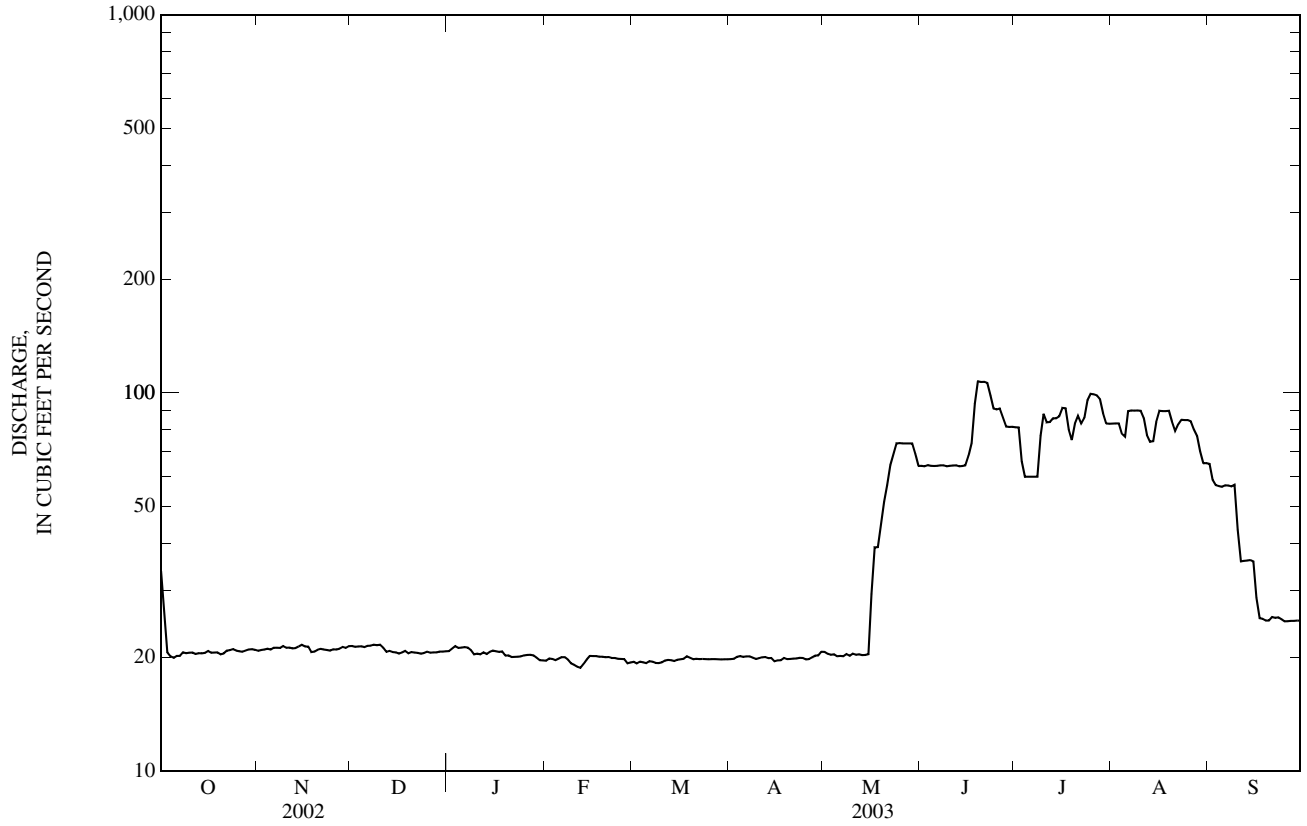
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)*

MEAN	29.0	25.2	25.3	23.3	23.6	32.5	54.7	101	116	92.3	72.2	48.2
MAX	127	150	130	71.4	73.8	125	182	324	415	227	213	120
(WY)	(1999)	(1999)	(1999)	(1997)	(1997)	(1996)	(1999)	(1997)	(1965)	(1998)	(1998)	(1997)
MIN	11.1	9.07	12.3	10.6	10.9	11.2	11.3	11.1	17.7	30.5	29.5	21.5
(WY)	(1991)	(1982)	(1991)	(1991)	(1991)	(1991)	(1991)	(1991)	(1991)	(1992)	(1966)	(1989)

06411500 RAPID CREEK BELOW PACTOLA DAM, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003*	
ANNUAL TOTAL	14,828		14,140			
ANNUAL MEAN	40.6		38.7		53.7	
HIGHEST ANNUAL MEAN					149	1999
LOWEST ANNUAL MEAN					20.7	1991
HIGHEST DAILY MEAN	125	Jul 6	107	Jun 19	[a]515	May 20, 1965
LOWEST DAILY MEAN	20	Oct 4	19	Feb 9	1.4	Oct 9, 1971
ANNUAL SEVEN-DAY MINIMUM	20	Oct 3	19	Feb 27	6.7	Oct 6, 1971
MAXIMUM PEAK FLOW			111	Jun 18	547	May 19, 1965
MAXIMUM PEAK STAGE			7.94	Jun 18	9.00	May 19, 1965
ANNUAL RUNOFF (AC-FT)	29,410		28,050		38,920	
10 PERCENT EXCEEDS	71		85		107	
50 PERCENT EXCEEDS	28		21		33	
90 PERCENT EXCEEDS	21		20		14	

* Regulated period only (1964-2003). See REMARKS.
a Also May 28, 29, 1965.
e Estimated.



06412500 RAPID CREEK ABOVE CANYON LAKE, NEAR RAPID CITY, SD

LOCATION.--Lat 44° 03'10", long 103° 18'41", in $NW^1/_4$ $NW^1/_4$ $NW^1/_4$ sec.17, T.1 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on left bank between bridges on State Highway 44, at city limits of Rapid City, and 2.9 mi downstream from Victoria Creek.

DRAINAGE AREA.--371 mi^2.

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder and concrete broad-crested, V-notch weir. Datum of gage is 3,398.17 ft above NGVD of 1929. Prior to Oct. 6, 1947, nonrecording gage, Oct. 6, 1947, to Nov. 2, 1967, and Oct. 1, 1968, to Sept. 30, 1976, water-stage recorder all at datum 9.25 ft higher. Nov. 3, 1967, to Sept. 30, 1968, nonrecording gage at site 0.1 mi downstream at datum 6.13 ft higher. Oct. 1, 1968, to Oct. 1, 1989, at datum 7.22 ft higher. Prior to Oct. 1, 1991, at site 0.1 mi upstream at datum 7.25 ft higher.

REMARKS.--Records good. Flow regulated by Deerfield Reservoir since December 1945 and by Pactola Dam 21.0 mi upstream since August 1956 (reservoir filled from August 1956 to June 1963). Maximum discharge prior to Sept. 30, 1963, 2,600 ft^3/s, May 23, 1952, gage height, 10.08 ft, site and datum then in use; minimum daily discharge, no flow Jan. 6-8, 1959, Apr. 4-5, 1960. Gage located in loss zone and analysis of low-flow data would be unreliable due to differences in respective gage locations. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section. Satellite data-collection platform and National Weather Service telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	12	16	18	17	17	16	31	63	76	73	48
2	24	17	17	16	17	14	16	29	62	74	72	46
3	16	16	16	18	14	19	16	24	61	72	72	39
4	15	15	14	19	16	15	18	23	61	57	72	39
5	14	16	6.1	18	12	14	17	22	61	58	58	38
6	14	16	14	18	11	18	17	21	61	57	76	38
7	14	15	15	17	8.8	18	17	20	61	56	82	38
8	14	15	14	16	16	15	17	20	61	56	81	38
9	14	15	16	12	14	13	17	20	61	55	80	39
10	14	15	17	4.1	17	16	16	22	61	59	82	41
11	14	15	17	2.6	16	20	16	22	61	78	79	25
12	14	15	17	7.0	15	19	16	20	60	79	69	24
13	14	15	16	17	16	20	16	20	60	79	60	24
14	14	15	17	19	17	21	16	20	60	79	59	23
15	14	15	18	15	16	20	16	20	59	78	62	23
16	14	15	17	14	16	18	16	20	59	84	76	23
17	15	15	17	13	18	20	16	31	70	87	78	17
18	14	15	16	12	16	22	18	35	71	85	82	17
19	14	16	8.7	19	16	20	18	36	111	75	80	16
20	14	16	8.1	20	16	18	17	45	112	75	78	15
21	15	16	10	17	16	17	17	47	113	84	67	15
22	15	16	8.2	13	13	17	16	59	112	83	66	15
23	15	16	7.9	11	8.3	17	17	61	109	83	71	15
24	15	16	7.7	13	6.4	17	21	72	97	84	71	15
25	15	11	8.6	17	8.3	17	20	73	95	93	71	15
26	15	12	9.2	16	14	17	19	73	94	93	71	15
27	15	18	13	16	17	16	18	73	91	94	68	15
28	15	20	24	18	16	16	18	73	80	92	61	15
29	15	19	24	17	---	16	19	73	79	89	60	15
30	15	15	22	16	---	17	21	71	78	74	49	15
31	14	---	18	17	---	17	---	61	---	73	49	---
TOTAL	470	463	449.5	465.7	403.8	541	518	1,237	2,284	2,361	2,175	761
MEAN	15.2	15.4	14.5	15.0	14.4	17.5	17.3	39.9	76.1	76.2	70.2	25.4
MAX	26	20	24	20	18	22	21	73	113	94	82	48
MIN	14	11	6.1	2.6	6.4	13	16	20	59	55	49	15
AC-FT	932	918	892	924	801	1,070	1,030	2,450	4,530	4,680	4,310	1,510

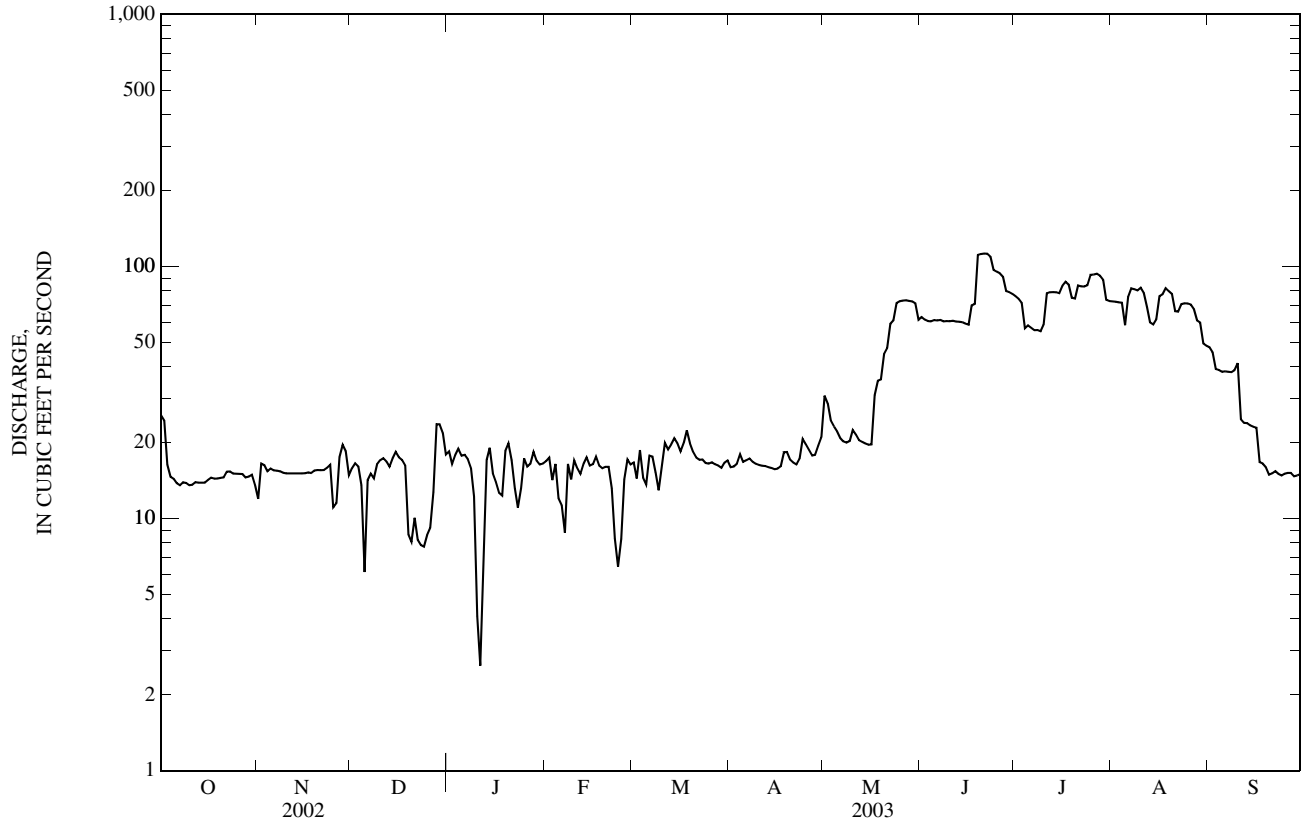
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)*

MEAN	25.7	20.9	19.5	18.2	19.1	29.0	53.9	110	140	96.2	69.3	42.6
MAX	135	154	135	80.4	84.1	133	217	449	466	275	239	123
(WY)	(1999)	(1999)	(1999)	(1997)	(1997)	(1996)	(1997)	(1997)	(1999)	(1998)	(1997)	(1997)
MIN	1.38	0.71	0.12	0.094	0.094	0.29	3.55	22.0	20.8	23.2	27.0	14.1
(WY)	(1991)	(1982)	(1991)	(1991)	(1991)	(1991)	(1991)	(1986)	(1990)	(1992)	(1966)	(1989)

06412500 RAPID CREEK ABOVE CANYON LAKE, NEAR RAPID CITY, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003*	
ANNUAL TOTAL	12,719.5		12,129.0			
ANNUAL MEAN	34.8		33.2		53.9	
HIGHEST ANNUAL MEAN					173	1997
LOWEST ANNUAL MEAN					17.5	1991
HIGHEST DAILY MEAN	129	Jul 6	113	Jun 21	2,600	Jun 10, 1972
LOWEST DAILY MEAN	6.1	Dec 5	2.6	Jan 11	[a]0.00	Dec 12, 1990
ANNUAL SEVEN-DAY MINIMUM	8.5	Dec 19	8.5	Dec 19	0.00	Dec 20, 1990
MAXIMUM PEAK FLOW			115	Jun 21	31,200	Jun 9, 1972
MAXIMUM PEAK STAGE			2.66	Jun 21	17.77	Jun 9, 1972
ANNUAL RUNOFF (AC-FT)	25,230		24,060		39,020	
10 PERCENT EXCEEDS	64		78		113	
50 PERCENT EXCEEDS	26		17		29	
90 PERCENT EXCEEDS	15		14		7.0	

* Regulated period only (1964-2003). See REMARKS.
a No flow for many days in 1991 water year.



06412810 CLEGHORN SPRINGS AT RAPID CITY, SD

LOCATION.--Lat 44° 03'32", long 103° 17'49", in $SE^1/_4$ $NW^1/_4$ $SE^1/_4$ sec.8, T.1 N, R.7 E., Pennington County, Hydrologic Unit 10120110, on left bank of the outflow of Cleghorn Springs, within Cleghorn Springs Fish Hatchery, and 0.2 mi west of Canyon Lake on State Highway 44.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 3,369.1 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Records good. Discharges are the result of three springs routed into one. Flows may vary depending on operational activities of fish hatchery. From October 1987 to September 1992, Cleghorn Springs was published as three gaging stations: 06412600, 06412700, and 06412800. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

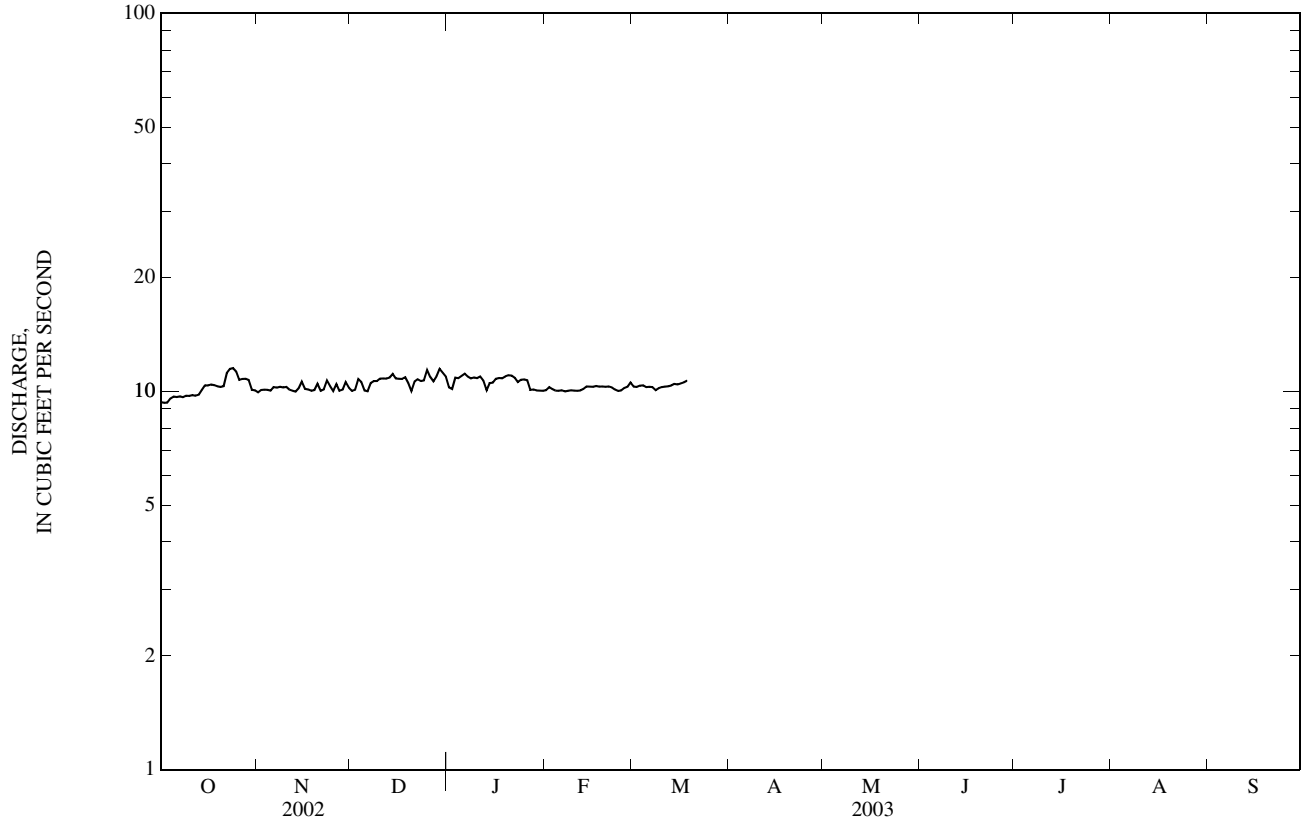
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	10	10	10	10	10	11	12	11	9.9	9.4	9.4
2	9.3	10	10	10	10	10	11	12	11	9.8	9.4	9.3
3	9.3	10	11	11	10	10	11	12	11	9.9	9.6	9.1
4	9.6	10	11	11	10	10	11	12	11	9.6	9.5	9.1
5	9.7	10	10	11	10	10	11	11	11	9.7	9.3	9.1
6	9.7	10	10	11	10	10	11	11	11	9.8	9.4	9.0
7	9.7	10	11	11	10	10	11	11	11	9.6	9.6	9.0
8	9.7	10	11	11	10	10	11	11	11	9.5	9.7	9.1
9	9.7	10	11	11	10	10	11	11	10	9.4	9.7	9.2
10	9.7	10	11	11	10	10	11	12	10	9.3	9.8	9.4
11	9.8	10	11	11	10	10	11	12	10	9.5	9.5	9.1
12	9.7	10	11	11	10	10	11	11	10	9.5	9.4	9.0
13	9.8	10	11	10	10	10	11	11	10	9.4	9.1	9.0
14	10	10	11	11	10	10	11	11	10	9.3	8.9	9.0
15	10	11	11	11	10	10	11	11	10	9.3	8.7	8.8
16	10	10	11	11	10	10	11	11	10	9.3	8.9	8.7
17	10	10	11	11	10	11	11	11	10	9.4	9.0	8.7
18	10	10	11	11	10	11	11	11	10	9.5	9.6	8.7
19	10	10	11	11	10	11	11	11	11	9.3	9.7	8.7
20	10	10	10	11	10	11	11	11	11	9.1	9.7	8.6
21	10	10	11	11	10	11	11	11	11	9.3	9.5	8.6
22	11	10	11	11	10	11	11	11	11	9.4	9.6	8.7
23	11	11	11	11	10	11	11	11	10	9.3	9.6	8.6
24	12	10	11	11	10	11	11	11	10	9.2	9.4	8.6
25	11	10	11	11	10	11	11	11	10	9.2	9.4	8.6
26	11	10	11	11	10	11	11	11	10	9.2	9.4	8.6
27	11	10	11	10	10	11	11	11	10	9.6	9.3	8.5
28	11	10	11	10	11	11	11	11	10	9.8	9.3	8.5
29	11	11	11	10	---	11	11	11	10	9.7	9.3	8.6
30	10	10	11	10	---	11	12	11	10	9.6	9.2	8.6
31	10	---	11	10	---	11	---	11	---	9.4	9.3	---
TOTAL	314.1	303	336	333	281	325	331	347	312	293.8	291.2	265.9
MEAN	10.1	10.1	10.8	10.7	10.0	10.5	11.0	11.2	10.4	9.48	9.39	8.86
MAX	12	11	11	11	11	11	12	12	11	9.9	9.8	9.4
MIN	9.3	10	10	10	10	10	11	11	10	9.1	8.7	8.5
AC-FT	623	601	666	661	557	645	657	688	619	583	578	527

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

MEAN	11.6	11.7	11.8	11.7	11.4	11.6	12.3	12.8	12.7	11.6	11.0	10.9
MAX	14.2	14.0	13.9	13.1	13.0	13.0	13.7	15.0	14.9	13.7	13.7	12.9
(WY)	(1999)	(1999)	(1999)	(1999)	(1997)	(1997)	(1997)	(1997)	(1999)	(1998)	(1998)	(1998)
MIN	10.1	9.81	9.89	10.3	10.0	10.2	11.0	11.1	10.3	9.48	9.39	8.86
(WY)	(2003)	(1993)	(1993)	(1993)	(2003)	(1993)	(2003)	(1993)	(2002)	(2003)	(2003)	(2003)

06412810 CLEGHORN SPRINGS AT RAPID CITY, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1993 - 2003	
ANNUAL TOTAL	3,851.2		3,733.0			
ANNUAL MEAN	10.6		10.2		11.8	
HIGHEST ANNUAL MEAN					13.3	1999
LOWEST ANNUAL MEAN					10.2	2003
HIGHEST DAILY MEAN	13	Apr 27	12	Oct 24	17	Jun 2, 1997
LOWEST DAILY MEAN	8.9	Aug 31	8.5	Sep 27	8.5	Sep 27, 2003
ANNUAL SEVEN-DAY MINIMUM	9.0	Aug 29	8.6	Sep 23	8.6	Sep 23, 2003
MAXIMUM PEAK FLOW					59	Jun 2, 1997
MAXIMUM PEAK STAGE					3.76	Jun 2, 1997
ANNUAL RUNOFF (AC-FT)	7,640		7,400		8,520	
10 PERCENT EXCEEDS	11		11		14	
50 PERCENT EXCEEDS	11		10		12	
90 PERCENT EXCEEDS	9.4		9.2		10	



06425500 ELK CREEK NEAR ELM SPRINGS, SD

LOCATION.--Lat 44° 14'54", long 102° 30'10", in $SW^1/_4$ $NW^1/_4$ sec.1, T.3 N., R.13 E., Meade County, Hydrologic Unit 10120111, on left bank near downstream end of county highway bridge, 1.4 mi downstream from Hay Draw, 5.0 mi southeast of Elm Springs, and 7.0 mi upstream from mouth.

DRAINAGE AREA.--540 mi^2, approximately.

PERIOD OF RECORD.--July 1949 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,304.49 ft above NGVD of 1929. Prior to Nov. 2, 1976, nonrecording gage, and prior to Feb. 1, 1967, at site 350 ft downstream at present datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 17 ft, at former site, in May 1920, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	e0.30	5.3	0.58	0.24	0.05	0.00	e0.00
2	0.00	0.00	0.00	0.00	0.00	e0.18	5.7	0.60	0.21	0.01	0.00	e0.00
3	0.00	0.00	0.00	0.00	0.00	e0.16	5.3	0.81	0.26	0.00	0.00	e0.00
4	0.00	0.00	0.00	0.00	0.00	e0.13	4.7	0.36	0.35	0.00	e0.00	e0.00
5	0.00	0.00	0.00	0.00	0.00	e0.11	4.7	0.38	0.34	0.00	e0.00	e0.00
6	0.00	0.00	0.00	0.00	0.00	e0.10	4.5	0.39	0.31	0.00	e0.00	e0.00
7	0.00	0.00	0.00	0.00	0.00	e0.00	4.9	0.41	0.28	0.00	e0.00	e0.00
8	0.00	0.00	0.00	0.00	0.00	e0.00	4.5	0.55	0.24	0.00	e0.00	e0.00
9	0.00	0.00	0.00	0.00	0.00	e0.00	4.0	0.58	0.20	0.00	e0.00	e0.00
10	0.00	0.00	0.00	0.00	0.00	e0.07	3.8	e0.43	0.16	0.00	e0.00	e0.00
11	0.00	0.00	0.00	0.00	0.00	e0.10	2.7	e0.46	0.13	0.00	e0.00	e0.00
12	0.00	0.00	0.00	0.00	0.00	e1.0	1.8	0.38	0.12	0.00	e0.00	e0.00
13	0.00	0.00	0.00	0.00	0.00	e1.3	1.1	0.40	0.08	0.00	e0.00	e0.00
14	0.00	0.00	0.00	0.00	0.00	e1.9	0.61	0.53	0.06	0.00	e0.00	e0.00
15	0.00	0.00	0.00	0.00	0.00	e2.2	0.40	0.46	0.03	0.00	e0.00	e0.00
16	0.00	0.00	0.00	0.00	0.00	e2.4	0.52	0.63	0.05	0.00	e0.00	e0.00
17	0.00	0.00	0.00	0.00	e2.8	e3.0	0.88	0.71	0.09	0.00	e0.00	e0.00
18	0.00	0.00	0.00	0.00	e12	e4.0	1.1	0.56	0.06	0.00	e0.00	e0.00
19	0.00	0.00	0.00	0.00	e10	41	1.2	0.49	0.05	0.00	e0.00	e0.00
20	0.00	0.00	0.00	0.00	e5.0	28	0.95	0.60	0.04	0.00	e0.00	e0.00
21	0.00	0.00	0.00	0.00	e4.0	10	0.75	0.59	0.01	0.00	e0.00	e0.00
22	0.00	0.00	0.00	0.00	e3.0	5.5	0.55	0.44	0.00	0.00	e0.00	e0.00
23	0.00	0.00	0.00	0.00	e2.5	5.1	0.40	0.44	0.01	0.00	e0.00	e0.00
24	0.00	0.00	0.00	0.00	e2.0	3.8	0.71	0.39	0.09	0.00	e0.00	e0.00
25	0.00	0.00	0.00	0.00	e1.5	4.0	0.64	0.35	0.18	0.00	e0.00	e0.00
26	0.00	0.00	0.00	0.00	e1.0	3.8	0.50	0.37	0.19	0.00	e0.00	e0.00
27	0.00	0.00	0.00	0.00	e0.40	3.5	0.39	0.35	0.17	0.00	e0.00	e0.00
28	0.00	0.00	0.00	e0.05	e0.34	3.2	0.36	0.36	0.14	0.00	e0.00	e0.00
29	0.00	0.00	0.00	e0.25	---	3.9	0.37	0.34	0.14	0.00	e0.00	e0.00
30	0.00	0.00	0.00	0.00	---	3.4	0.40	0.30	0.09	0.00	e0.00	e0.00
31	0.00	---	0.00	0.00	---	4.0	---	0.27	---	0.00	e0.00	---
TOTAL	0.00	0.00	0.00	0.30	44.54	136.15	63.73	14.51	4.32	0.06	0.00	0.00
MEAN	0.000	0.000	0.000	0.010	1.59	4.39	2.12	0.47	0.14	0.002	0.000	0.000
MAX	0.00	0.00	0.00	0.25	12	41	5.7	0.81	0.35	0.05	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.27	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.6	88	270	126	29	8.6	0.1	0.00	0.00

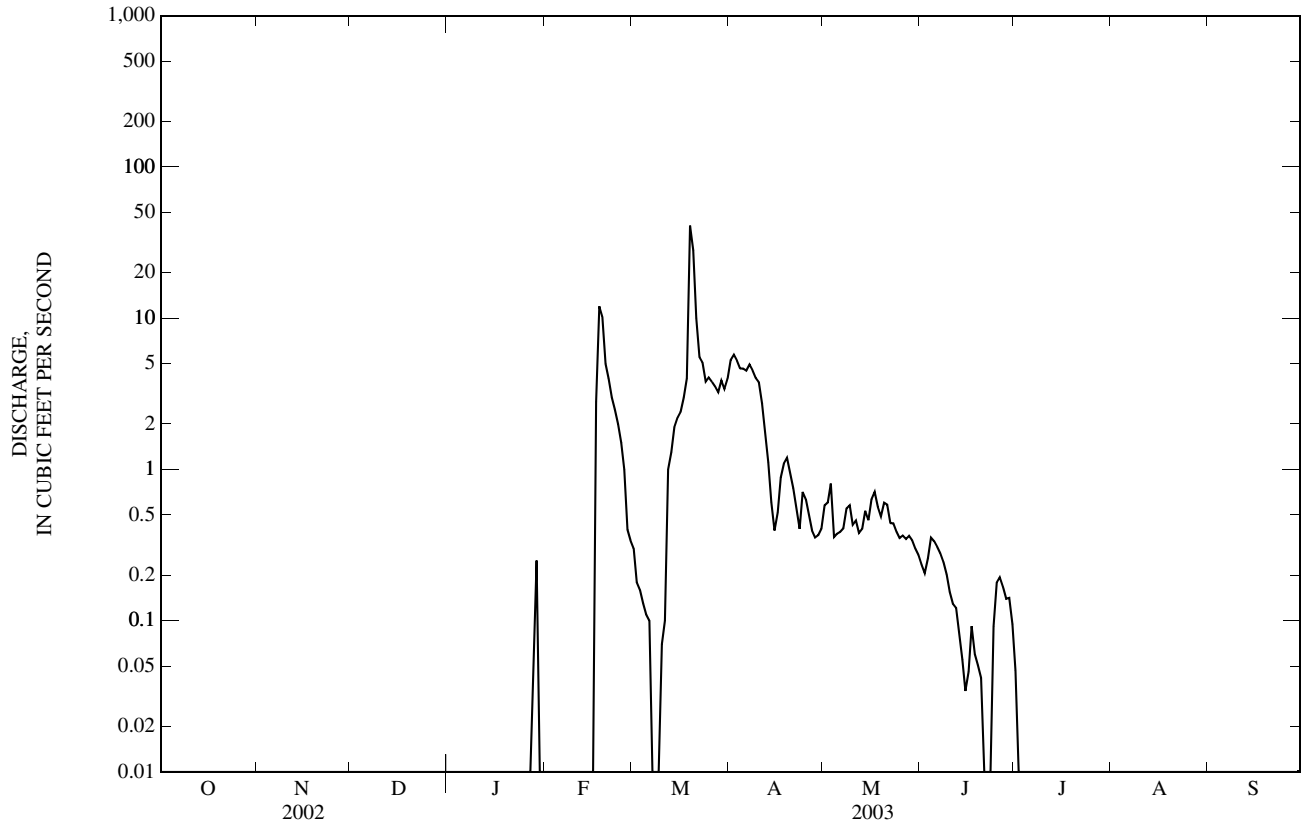
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

MEAN	9.94	4.72	2.60	4.28	16.7	41.8	60.1	99.6	67.8	12.6	4.28	2.05
MAX	295	87.2	23.7	103	334	327	493	519	708	88.8	40.4	26.8
(WY)	(1999)	(1999)	(1999)	(1997)	(1997)	(1978)	(2000)	(1995)	(1967)	(1996)	(1997)	(1951)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1950)	(1950)	(1950)	(1950)	(1950)	(1957)	(1959)	(1955)	(1955)	(1950)	(1952)	(1950)

06425500 ELK CREEK NEAR ELM SPRINGS, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1950 - 2003	
ANNUAL TOTAL	783.89		263.61			
ANNUAL MEAN	2.15		0.72		27.2	
HIGHEST ANNUAL MEAN					135	1997
LOWEST ANNUAL MEAN					0.000	1961
HIGHEST DAILY MEAN	16	Apr 28	41	Mar 19	5,010	May 28, 1996
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	[a]0.00	Oct 1, 1949
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1, 1949
MAXIMUM PEAK FLOW			[b]61	Mar 19	[c]8,540	Mar 29, 1952
MAXIMUM PEAK STAGE			[d]6.31	May 3	[f]16.22	Feb 18, 1997
ANNUAL RUNOFF (AC-FT)	1,550		523		19,710	
10 PERCENT EXCEEDS	8.2		1.9		38	
50 PERCENT EXCEEDS	0.00		0.00		0.04	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a No flow for long periods in most years.
b Gage height, 6.28 ft.
c Gage height, 10.61 ft, from floodmarks, site and datum then in use, from rating curve extended above 5,100 ft^3/s.
d Backwater from beaver dam.
e Estimated.
f Backwater from ice; from floodmark.



06427000 KEYHOLE RESERVOIR NEAR MOORCROFT, WY

LOCATION.--Lat 44°22'55", long 104°46'45", in NW$^1/_4$NW$^1/_4$ sec.27, T.51 N., R.66 W., Crook County, Hydrologic Unit 10120201, at reservoir dam on Belle Fourche River, 12 mi northeast of Moorcroft.

DRAINAGE AREA.--2,000 mi^2, approximately.

PERIOD OF RECORD.--March 1952 to current year (monthend contents only).

GAGE.--Water-stage recorder. Elevations listed to NGVD of 1929 (Bureau of Reclamation datum). Prior to May 15, 1958, and Oct. 1, 1968, to Mar. 13, 1970, nonrecording gages, and May 15, 1958, to Sept. 30, 1968, water-stage recorder, all at present site and datum.

REMARKS.--Reservoir is formed by a zoned earth-fill dam completed by the Bureau of Reclamation Oct. 25, 1952. Storage began Feb. 12, 1952. Inactive storage, between elevations 4,036.0 ft and 4,051.0 ft, 7,230 acre-ft. Total active conservation pool below elevation 4,099.3 ft (crest of spillway), 185,800 acre-ft. Dead storage below elevation 4,036.0 ft, 726 acre-ft. Figures given herein represent inactive and active contents above elevation 4,036.0 ft. The reservoir provides flood control and water for irrigation in Wyoming and near Belle Fourche, SD.

COOPERATION.--Records of elevation and contents provided by the Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 200,744 acre-ft, May 21, 1978, elevation, 4,100.38 ft; minimum daily contents (since appreciable storage was attained), 6,030 acre-ft, Mar. 8, 9, 1955, elevation, 4,046.35 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 135,500 acre-ft, July 1, elevation, 4,092.32 ft; minimum, 110,600 acre-ft, Sept. 30, elevation, 4,088.45 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	4,089.39	116,300	--
Oct. 31	4,089.20	115,100	-1,200
Nov. 30	4,089.15	114,800	-300
Dec. 31	4,089.16	114,900	+100
CAL YR 2002	--	--	-38,900
Jan. 31	4,089.28	115,600	+700
Feb. 28	4,089.44	116,600	+1,000
Mar. 31	4,091.57	130,300	+13,700
Apr. 30	4,091.69	131,100	+800
May 31	4,091.65	130,800	-300
June 30	4,092.31	135,400	+4,600
July 31	4,090.66	124,300	-11,100
Aug. 31	4,088.80	112,700	-11,600
Sept. 30	4,088.45	110,600	-2,100
WTR YR 2003	--	--	-5,700

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06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44° 44'59", long 104° 02'49", in NE$^1/_4$ NW$^1/_4$ NW$^1/_4$ sec.18, T.9 N., R.1 E., Butte County, Hydrologic Unit 10120202, on left bank 0.3 mi downstream from State line, 3.7 mi downstream from Oak Creek, and 11 mi northwest of Belle Fourche, SD.

DRAINAGE AREA.--3,280 mi^2, approximately.

PERIOD OF RECORD.--December 1946 to current year. Records for water year 1947 incomplete, yearly estimate published in WSP 1729.

GAGE.--Water-stage recorder. Datum of gage is 3,095.7 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions upstream from station for irrigation of about 5,400 acres. Flow regulated by Keyhole Dam, usable capacity, 191,600 acre-ft, 143 mi upstream since Oct. 25, 1952. Maximum discharge prior to regulation, 3,620 ft^3/s, June 23, 1947, gage height, 12.51 ft; maximum gage height, 14.33 ft, Mar. 22, 1949, backwater from ice; no flow at times some years. Bureau of Reclamation satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	16	16	e14	e17	e11	73	40	23	26	89	104
2	26	19	19	e15	e21	e11	68	43	23	22	88	104
3	25	22	21	e15	e14	e12	65	39	23	19	87	100
4	24	19	20	e15	e12	e12	62	50	23	16	89	99
5	24	23	e10	e15	e11	e13	61	80	27	14	88	98
6	24	26	e11	e16	e10	e13	58	66	33	51	88	90
7	23	25	e12	e16	e8.8	e12	55	60	35	99	87	68
8	23	22	e13	e15	e8.5	e11	52	62	48	107	88	61
9	22	20	e13	e14	e9.0	e11	49	58	39	113	90	59
10	21	20	e13	e12	e9.5	e12	48	56	62	114	89	85
11	21	19	e14	e13	e10	e13	45	60	61	112	92	153
12	22	18	e14	e14	e11	e14	42	53	53	102	98	78
13	21	18	e14	e14	e11	e40	40	52	52	98	102	59
14	20	17	e15	e14	e11	e100	38	53	46	97	99	46
15	20	17	e15	e13	e12	378	37	46	40	96	95	39
16	19	17	e15	e13	e13	841	36	43	44	89	92	33
17	19	16	e15	e12	e15	842	35	42	46	91	94	33
18	19	16	e14	e12	e50	720	37	40	30	91	99	42
19	18	16	e13	e12	e40	648	38	40	28	84	101	29
20	18	16	e11	e12	e37	478	36	40	21	97	105	26
21	18	16	e12	e10	e30	340	35	39	20	85	103	24
22	19	16	e13	e8.0	e17	230	34	39	20	87	104	22
23	19	16	e13	e9.0	e9.5	172	33	38	22	86	102	20
24	20	16	e13	e9.0	e8.2	156	33	36	30	88	97	18
25	19	16	e13	e9.3	e7.0	264	32	34	58	88	89	17
26	19	16	e13	e9.5	e7.5	222	34	31	33	86	85	16
27	19	18	e13	e9.8	e8.8	176	33	30	31	97	82	15
28	19	24	e14	e10	e10	137	32	28	30	109	81	14
29	20	26	e15	e10	---	113	35	26	28	101	83	14
30	16	19	e14	e11	---	94	35	25	27	92	91	14
31	17	---	e14	e12	---	84	---	24	---	88	99	---
TOTAL	640	565	435	383.6	428.8	6,180	1,311	1,373	1,056	2,545	2,876	1,580
MEAN	20.6	18.8	14.0	12.4	15.3	199	43.7	44.3	35.2	82.1	92.8	52.7
MAX	26	26	21	16	50	842	73	80	62	114	105	153
MIN	16	16	10	8.0	7.0	11	32	24	20	14	81	14
AC-FT	1,270	1,120	863	761	851	12,260	2,600	2,720	2,090	5,050	5,700	3,130

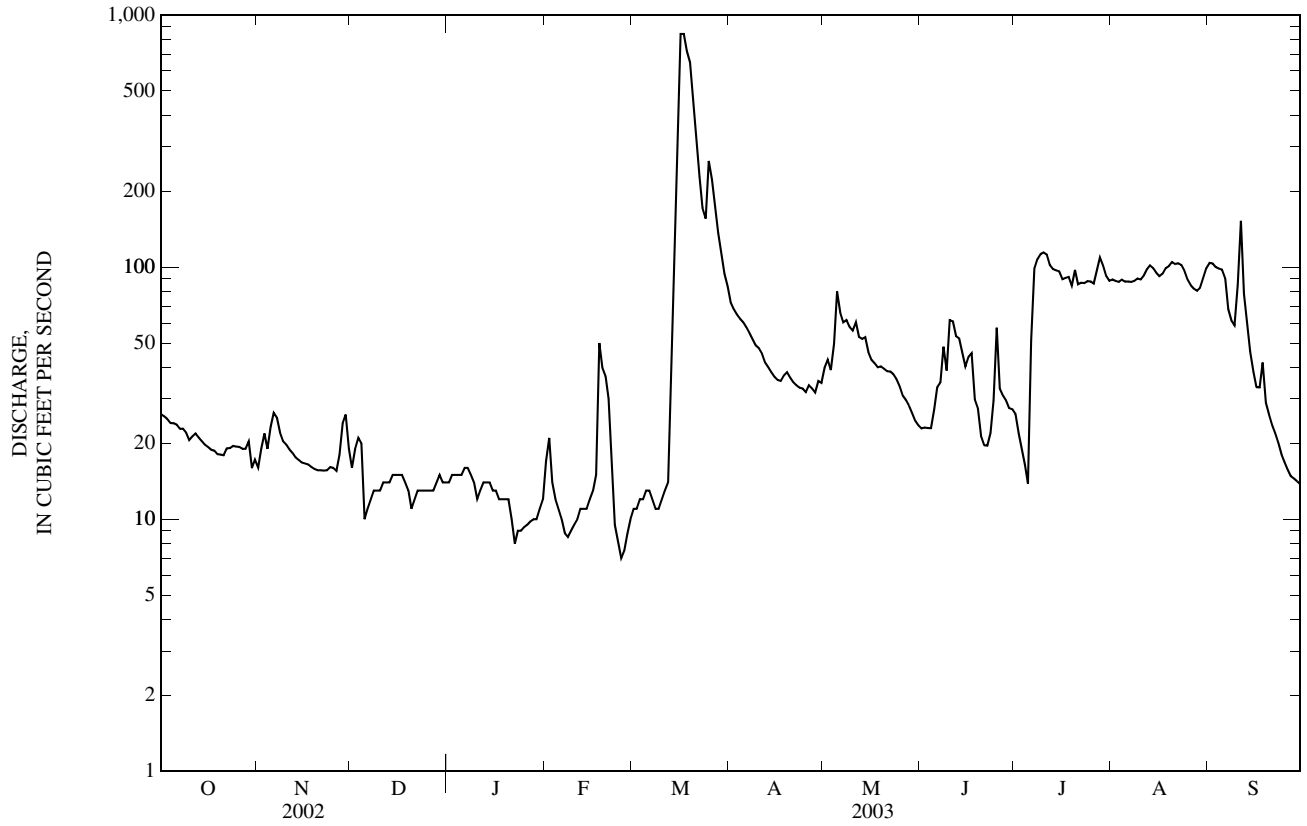
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)*

MEAN	28.6	27.8	17.7	20.9	43.6	156	162	215	181	96.0	73.0	34.4
MAX	134	277	51.5	247	459	931	823	1,104	812	303	271	109
(WY)	(1999)	(1999)	(1999)	(1997)	(1996)	(1972)	(1971)	(1978)	(1984)	(1981)	(1980)	(1955)
MIN	0.000	0.000	0.000	0.000	0.20	15.7	15.1	3.10	11.9	2.94	0.10	0.000
(WY)	(1955)	(1961)	(1961)	(1961)	(1959)	(1981)	(1992)	(1961)	(1961)	(1960)	(1961)	(1954)

06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003*	
ANNUAL TOTAL	20,389.5		19,373.4			
ANNUAL MEAN	55.9		53.1		88.2	
HIGHEST ANNUAL MEAN					229	1978
LOWEST ANNUAL MEAN					7.69	1961
HIGHEST DAILY MEAN	362	Aug 9	842	Mar 17	4,760	May 9, 1995
LOWEST DAILY MEAN	5.0	Jan 1	7.0	Feb 25	[a]0.00	Jul 30, 1954
ANNUAL SEVEN-DAY MINIMUM	8.5	Jan 27	8.9	Feb 23	0.00	Jul 30, 1954
MAXIMUM PEAK FLOW			956	Mar 17	[b]6,320	May 10, 1995
MAXIMUM PEAK STAGE			9.06	Mar 17	16.33	May 10, 1995
ANNUAL RUNOFF (AC-FT)	40,440		38,430		63,880	
10 PERCENT EXCEEDS	144		99		194	
50 PERCENT EXCEEDS	24		26		36	
90 PERCENT EXCEEDS	11		12		5.5	

* Regulated period only (1954-2003). See REMARKS.
a No flow at times in some years.
b Based on slope-area measurement of peak flow.
e Estimated.



06429500 COLD SPRINGS CREEK AT BUCKHORN, WY

LOCATION.--Lat 44° 09'15", long 104° 04'37", in NW$^1/_4$ NW$^1/_4$ SW$^1/_4$ sec.9, T.48 N., R.60 W., Weston County, Hydrologic Unit 10120303, on right bank at downstream end of culvert at U.S. Highway 85 and 0.5 mi northeast of Buckhorn.

DRAINAGE AREA.--19.0 mi^2.

PERIOD OF RECORD.--October 1974 to September 1982, April 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,050 ft above NGVD of 1929, from topographic map. October 1974 to September 1982, 200 ft upstream at different datum. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	e3.8	e4.1	4.3	4.1	e3.6	e6.5	3.6	e4.0	e3.9	4.0	3.0
2	3.8	e3.9	4.1	e4.2	4.2	e3.6	e6.0	3.5	e4.1	e3.9	3.8	2.9
3	3.8	e4.0	4.1	4.3	e4.0	3.8	e6.0	3.5	e4.1	e3.9	3.9	3.0
4	3.8	e4.1	4.1	4.3	4.2	3.8	e5.5	3.6	e4.1	e3.9	3.9	2.9
5	3.8	e4.1	e3.8	4.2	e4.1	e3.6	5.5	3.6	e4.1	e3.9	4.0	2.9
6	3.8	4.1	e3.9	4.2	e3.5	3.8	5.2	e3.6	e4.1	e3.9	e4.0	3.0
7	3.7	4.1	e4.0	4.2	e4.1	3.8	5.0	e3.6	e4.1	3.8	e3.9	3.0
8	3.9	4.1	e4.1	4.1	e4.1	3.8	e4.8	e3.6	e4.1	3.8	e3.9	3.1
9	3.8	4.1	e4.1	e4.0	4.2	3.8	6.0	e3.5	e4.1	3.8	e3.9	3.1
10	3.8	4.1	e4.1	e4.0	4.0	e3.7	8.6	e3.5	4.1	3.8	e3.9	3.5
11	3.9	4.0	e4.1	e4.0	e4.0	3.8	12	e3.5	4.1	3.8	e3.9	3.2
12	3.8	4.0	e4.1	e4.0	e4.1	3.9	6.7	e3.5	4.3	e3.8	e3.9	3.3
13	3.8	4.0	e4.1	e4.0	e4.1	4.0	4.6	3.5	4.2	e3.8	e3.9	3.3
14	3.8	4.0	e4.1	e4.1	4.2	e4.5	4.3	3.4	4.1	e3.8	e3.9	3.2
15	3.7	4.0	4.2	4.2	4.1	5.2	4.1	3.4	4.0	3.8	e3.9	3.2
16	3.6	e4.0	4.2	4.1	4.1	5.4	3.9	3.4	4.1	3.9	e3.9	3.2
17	3.6	4.1	4.2	e4.1	e3.5	6.0	3.9	3.4	4.1	3.8	e3.8	3.3
18	3.7	e4.0	3.9	e4.1	4.1	5.4	4.0	3.3	4.1	3.9	e3.8	3.5
19	3.7	4.0	e3.5	e4.2	4.1	4.8	3.9	3.4	4.0	3.7	e3.8	3.4
20	3.7	4.1	e3.6	4.3	4.1	4.6	3.8	3.4	4.0	3.7	e3.8	3.4
21	3.7	4.1	e3.6	4.4	4.1	4.6	3.8	3.4	4.0	3.7	e3.8	3.4
22	3.7	4.1	e3.6	e4.2	4.1	4.9	3.7	3.4	4.1	3.9	e3.8	3.5
23	3.7	e4.1	e3.7	e4.3	e3.6	5.2	3.8	3.5	4.1	4.0	e3.8	3.5
24	3.7	e4.0	e3.7	4.4	e3.0	5.0	4.0	3.6	4.2	4.0	e3.8	3.5
25	e3.6	e3.8	e3.7	4.4	e2.9	4.7	3.7	3.7	4.1	4.0	e3.8	3.6
26	e3.7	e4.0	e3.7	4.4	e3.4	4.7	3.5	4.0	4.1	4.0	e3.8	3.6
27	e3.7	e4.1	e3.7	4.4	e4.1	4.8	3.5	3.9	4.1	4.0	3.8	3.7
28	e3.7	e4.1	e3.7	4.4	e3.7	e4.3	3.6	4.0	e4.0	4.0	3.8	3.7
29	e3.7	e4.1	e3.9	4.3	---	e4.8	3.6	e4.0	4.0	4.0	3.8	3.7
30	e3.7	e4.0	4.3	4.3	---	4.9	3.8	e4.0	4.0	3.9	3.7	3.7
31	3.6	---	4.3	4.2	---	e4.8	---	e4.0	---	4.0	3.0	---
TOTAL	115.8	121.0	122.3	130.6	109.8	137.6	147.3	111.3	122.6	120.1	118.7	99.3
MEAN	3.74	4.03	3.95	4.21	3.92	4.44	4.91	3.59	4.09	3.87	3.83	3.31
MAX	3.9	4.1	4.3	4.4	4.2	6.0	12	4.0	4.3	4.0	4.0	3.7
MIN	3.6	3.8	3.5	4.0	2.9	3.6	3.5	3.3	4.0	3.7	3.0	2.9
AC-FT	230	240	243	259	218	273	292	221	243	238	235	197

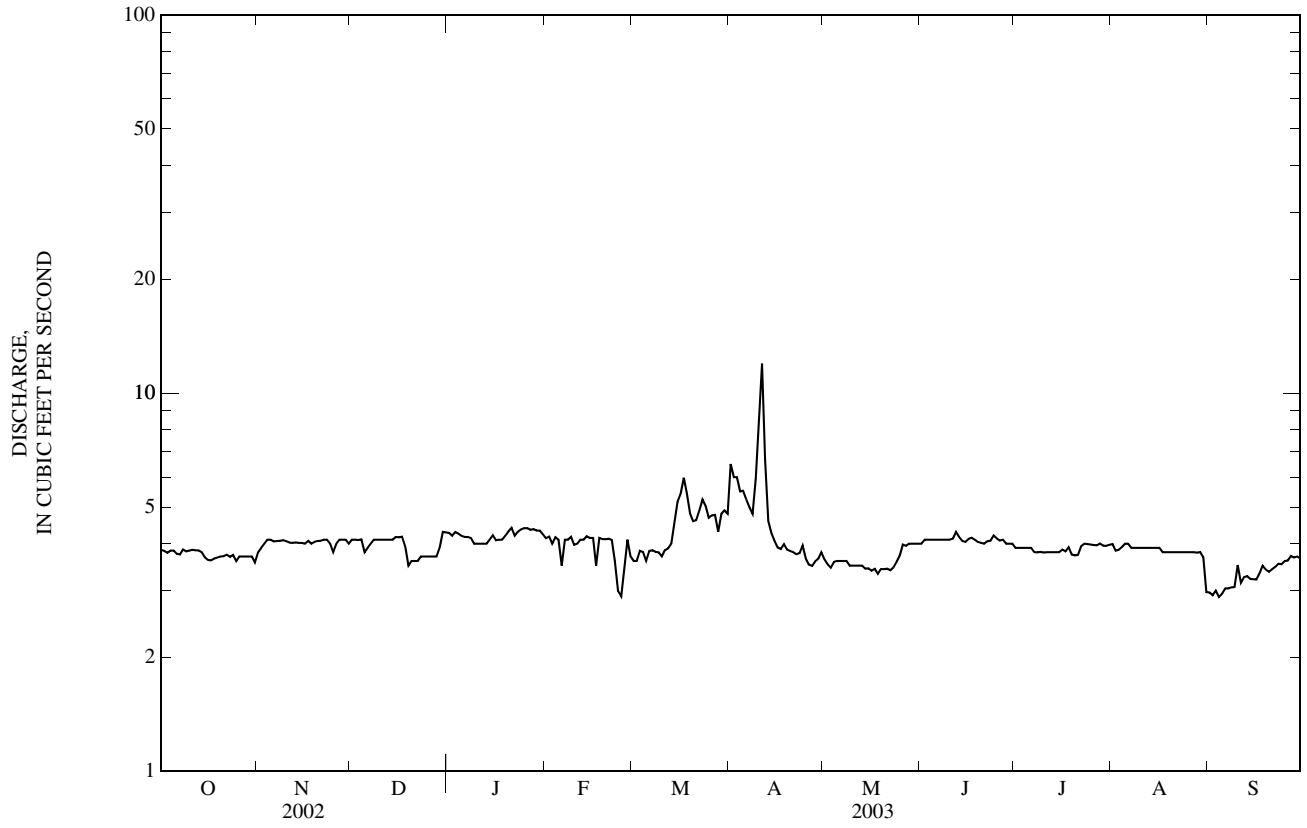
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

MEAN	4.56	4.38	4.26	4.23	4.39	4.75	5.08	4.82	4.89	4.72	4.77	4.68
MAX	7.00	7.15	7.04	7.01	6.75	8.03	7.43	7.29	7.77	7.58	7.28	7.14
(WY)	(2000)	(2000)	(2000)	(2000)	(2000)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)
MIN	2.53	2.09	2.06	2.50	2.61	2.91	3.07	3.10	3.19	2.62	2.71	2.92
(WY)	(1975)	(1993)	(1993)	(1994)	(1993)	(1993)	(1993)	(1993)	(1994)	(1995)	(1995)	(1994)

06429500 COLD SPRINGS CREEK AT BUCKHORN, WY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	1,600.7		1,456.4		--	
ANNUAL MEAN	4.39		3.99		4.65	
HIGHEST ANNUAL MEAN	--		--		7.06	1999
LOWEST ANNUAL MEAN	--		--		2.92	1993
HIGHEST DAILY MEAN	6.5	Apr 11	12	Apr 11	22	Mar 26, 1999
LOWEST DAILY MEAN	3.1	Sep 17	2.9	Several days	0.30	Dec 20, 1996
ANNUAL SEVEN-DAY MINIMUM	3.4	Sep 11	3.0	Aug 31	0.75	Dec 18, 1996
MAXIMUM PEAK FLOW	--		[a]30	Apr 11	[b]42	Mar 26, 1999
MAXIMUM PEAK STAGE	--		[c]3.35	Dec 20	[d]8.61	Jan 12, 1978
ANNUAL RUNOFF (AC-FT)	3,170		2,890		3,370	
10 PERCENT EXCEEDS	4.9		4.3		6.6	
50 PERCENT EXCEEDS	4.4		3.9		4.6	
90 PERCENT EXCEEDS	3.7		3.5		3.0	

a Gage height, 3.05 ft.
b Gage height, 3.33 ft.
c Backwater from ice.
d Backwater from ice, site and datum then in use.
e Estimated.



06429905 SAND CREEK NEAR RANCH A, NEAR BEULAH, WY

LOCATION.--Lat 44° 31'07", long 104° 04'57", in $SE^1/_4$ $SE^1/_4$ $SW^1/_4$ sec.5, T.52 N., R.60 W., Crook County, Hydrologic Unit 10120303, on right bank 1.0 mi upstream from Bear Gulch and 1.8 mi south of Beulah.

DRAINAGE AREA.--267 mi^2.

PERIOD OF RECORD.--October 1976 to September 1983, April 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,580 ft above NGVD of 1929, from topographic map. October 1976 to September 1983, at site 500 ft downstream at different datum. U.S. Geological Survey data collection platform with satellite telemetry at station.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	20	20	20	20	20	21	22	23	25	20	21
2	21	20	20	20	21	20	21	21	22	25	20	20
3	21	20	20	20	20	20	22	22	23	24	22	18
4	21	20	20	20	20	20	22	22	22	24	23	20
5	21	20	20	20	19	20	22	22	22	25	22	20
6	21	20	19	20	19	20	22	22	22	25	22	20
7	20	20	19	20	19	20	22	22	25	26	22	20
8	20	20	19	20	19	20	21	24	24	26	22	20
9	20	20	19	20	20	20	21	23	27	25	22	e20
10	20	20	19	19	20	20	21	23	25	23	22	e20
11	20	20	19	19	20	20	21	22	26	22	22	20
12	21	19	19	19	20	21	21	22	27	24	22	21
13	21	20	20	19	20	21	21	23	27	23	21	21
14	21	20	20	19	20	21	22	23	28	23	21	20
15	21	19	20	20	20	73	22	23	28	25	21	20
16	21	19	20	19	20	21	21	23	29	23	21	21
17	21	20	20	19	21	21	21	24	28	23	21	22
18	21	20	20	19	21	23	22	24	28	23	21	21
19	21	19	20	19	20	22	22	23	28	28	21	21
20	21	19	20	19	20	23	22	24	25	25	21	20
21	21	19	20	19	21	23	22	25	25	23	21	20
22	21	19	20	19	21	23	21	24	25	22	21	20
23	20	e19	20	19	20	23	20	24	24	20	21	20
24	20	19	20	19	19	23	19	24	26	20	20	20
25	20	19	20	19	17	22	18	23	26	20	20	20
26	20	19	20	19	17	21	19	22	25	21	20	20
27	21	19	20	20	19	21	19	22	25	20	20	20
28	21	19	20	20	20	21	17	22	26	22	20	20
29	21	20	20	19	---	22	15	22	25	22	20	20
30	20	20	20	19	---	22	22	21	25	22	21	20
31	20	---	20	19	---	21	---	22	---	21	21	---
TOTAL	640	587	613	601	553	708	622	705	761	720	654	606
MEAN	20.6	19.6	19.8	19.4	19.8	22.8	20.7	22.7	25.4	23.2	21.1	20.2
MAX	21	20	20	20	21	73	22	25	29	28	23	22
MIN	20	19	19	19	17	20	15	21	22	20	20	18
AC-FT	1,270	1,160	1,220	1,190	1,100	1,400	1,230	1,400	1,510	1,430	1,300	1,200

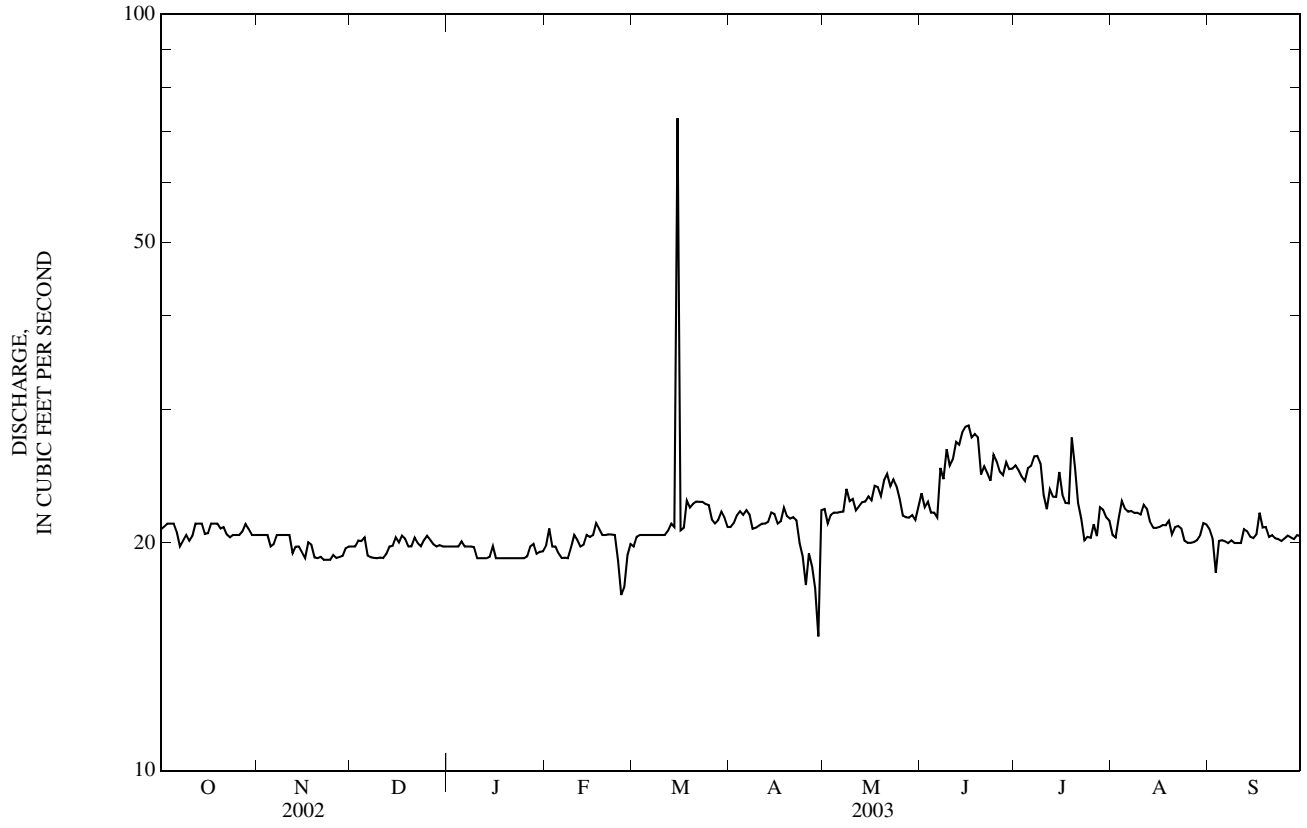
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

MEAN	21.9	21.9	21.3	20.7	20.0	21.0	22.1	30.2	27.0	25.2	22.9	22.0
MAX	29.5	28.2	27.1	26.4	25.0	29.7	30.8	64.8	40.5	39.8	34.5	30.8
(WY)	(2000)	(1978)	(1999)	(1999)	(1977)	(1996)	(1978)	(1995)	(1999)	(1999)	(1999)	(1999)
MIN	15.3	16.0	15.7	15.6	14.9	14.7	15.3	15.5	15.5	15.2	14.4	15.1
(WY)	(1993)	(1993)	(1993)	(1993)	(1993)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)

06429905 SAND CREEK NEAR RANCH A, NEAR BEULAH, WY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1977 - 2003	
ANNUAL TOTAL	7,469		7,770		--	
ANNUAL MEAN	20.5		21.3		23.2	
HIGHEST ANNUAL MEAN	--		--		30.5	1999
LOWEST ANNUAL MEAN	--		--		15.7	1992
HIGHEST DAILY MEAN	25	Sep 18	73	Mar 15	455	May 9, 1995
LOWEST DAILY MEAN	18	Jul 14-17	15	Apr 29	12	Mar 10, 1992
ANNUAL SEVEN-DAY MINIMUM	18	Jul 14	18	Apr 23	13	Mar 8, 1992
MAXIMUM PEAK FLOW	--		164	Mar 15	1,230	May 8, 1995
MAXIMUM PEAK STAGE	--		2.67	Mar 15	[a]3.80	May 8, 1995
ANNUAL RUNOFF (AC-FT)	14,810		15,410		16,830	
10 PERCENT EXCEEDS	22		24		30	
50 PERCENT EXCEEDS	20		21		22	
90 PERCENT EXCEEDS	19		19		16	

a From floodmarks, present site and datum.
e Estimated.



06429997 MURRAY DITCH ABOVE HEADGATE AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44° 34'35", long 104° 03'20", in $SW^1/_4$ $SW^1/_4$ sec.7, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on right bank at State line and 12 mi southwest of Belle Fourche, SD.

PERIOD OF RECORD.--April 1987 to current year.

REVISED RECORDS.--WDR SD-96-1: September 1995 daily discharges, monthly, and water year statistics.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 3,440 ft above NGVD of 1929, from topographic map. Prior to Apr. 23, 1987, published as 06430000 (below diversion at site 15 ft downstream).

REMARKS.--No estimated daily discharges. Records good. Ditch diverts water from left bank of Redwater Creek, 2.0 mi upstream, for irrigation of about 700 acres. Flow maintained during irrigation season and in some years for livestock watering. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	4.9	0.00	0.00	0.00	0.00	0.00	0.00	11	16	17	5.6
2	17	2.5	0.00	0.00	0.00	0.00	0.00	0.00	7.2	17	16	6.0
3	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.2	18	15	6.1
4	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.9	18	10	5.9
5	5.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10	18	7.1	6.4
6	7.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10	18	9.1	7.1
7	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	18	13	7.3
8	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10	18	13	7.5
9	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10	19	11	8.2
10	5.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.2	17	13	10
11	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.5	22	11	7.0
12	31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.6	30	7.5	8.5
13	24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.5	27	9.2	11
14	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.5	10	13	12
15	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.5	8.1	11	9.1
16	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.9	11	18	4.8
17	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.5	5.9	20	4.5
18	8.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.2	0.04	19	0.36
19	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.2	0.00	15	0.20
20	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.4	0.00	17	4.2
21	12	0.00	0.00	0.00	0.00	0.00	0.00	7.9	9.7	3.0	14	1.8
22	15	0.00	0.00	0.00	0.00	0.00	0.00	11	11	26	13	0.13
23	14	0.00	0.00	0.00	0.00	0.00	0.00	5.0	11	20	17	3.0
24	11	0.00	0.00	0.00	0.00	0.00	0.00	12	9.7	15	19	6.8
25	10	0.00	0.00	0.00	0.00	0.00	0.00	12	8.7	12	13	6.6
26	9.8	0.00	0.00	0.00	0.00	0.00	0.00	11	3.6	11	6.3	6.3
27	9.5	0.00	0.00	0.00	0.00	0.00	0.00	11	5.8	14	4.6	6.3
28	9.1	0.00	0.00	0.00	0.00	0.00	0.00	12	9.3	13	4.8	6.3
29	7.0	0.00	0.00	0.00	---	0.00	0.00	17	11	14	5.5	6.5
30	4.9	0.00	0.00	0.00	---	0.00	0.00	21	14	19	5.3	7.2
31	4.9	---	0.00	0.00	---	0.00	---	19	---	17	5.5	---
TOTAL	401.77	7.40	0.00	0.00	0.00	0.00	0.00	138.90	242.1	455.04	372.9	182.69
MEAN	13.0	0.25	0.000	0.000	0.000	0.000	0.000	4.48	8.07	14.7	12.0	6.09
MAX	31	4.9	0.00	0.00	0.00	0.00	0.00	21	14	30	20	12
MIN	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.6	0.00	4.6	0.13
AC-FT	797	15	0.00	0.00	0.00	0.00	0.00	276	480	903	740	362

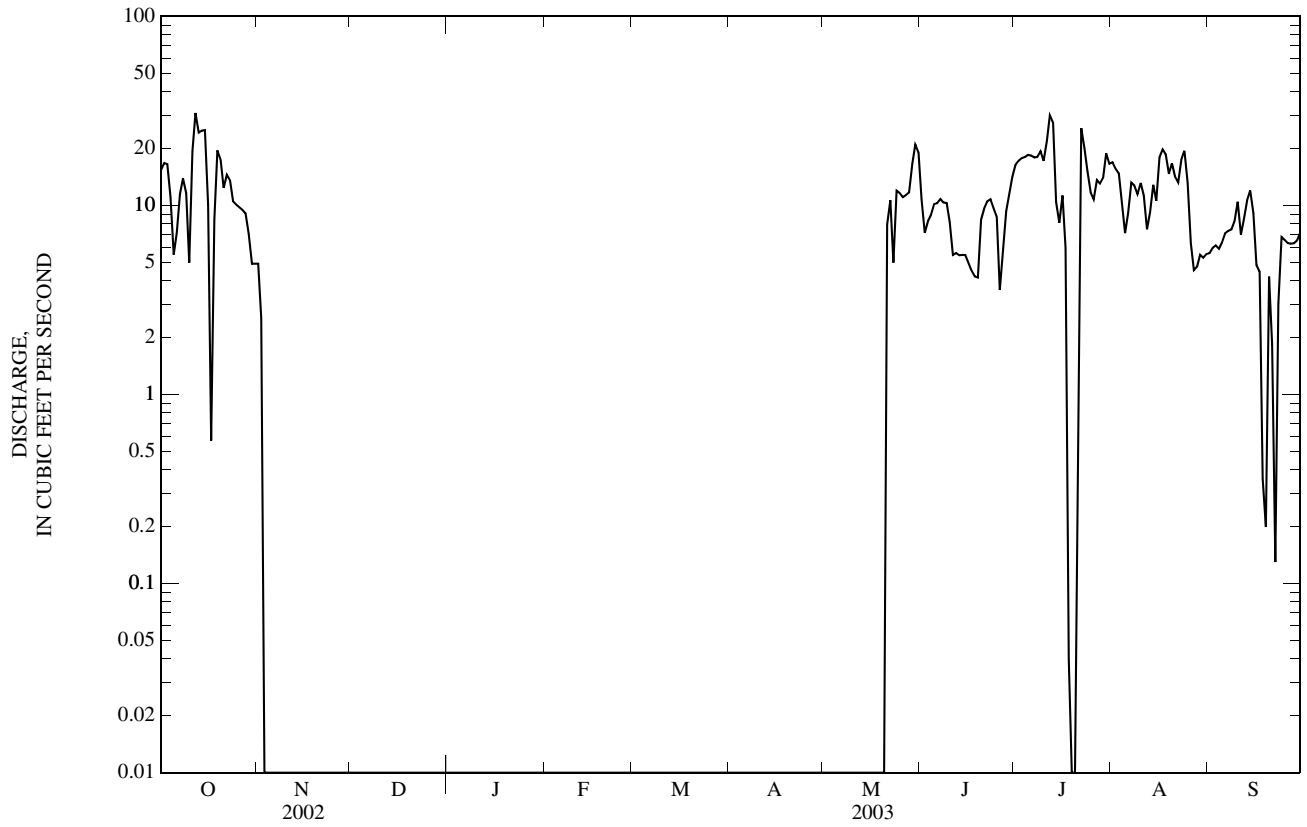
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2003, BY WATER YEAR (WY)

MEAN	5.86	0.27	0.000	0.000	0.000	0.000	0.009	1.95	5.33	10.0	8.71	8.12
MAX	20.6	2.01	0.000	0.000	0.000	0.000	0.085	6.30	13.9	16.4	18.2	18.8
(WY)	(1991)	(2000)	(1988)	(1988)	(1988)	(1988)	(1997)	(1992)	(1988)	(1991)	(1991)	(1994)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.84	2.24	0.80
(WY)	(1988)	(1988)	(1988)	(1988)	(1988)	(1988)	(1988)	(1990)	(1991)	(1993)	(1998)	(1993)

06429997 MURRAY DITCH ABOVE HEADGATE AT WYOMING-SOUTH DAKOTA STATE LINE—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1988 - 2003	
ANNUAL TOTAL	1,790.89		1,800.80			
ANNUAL MEAN	4.91		4.93		3.38	
HIGHEST ANNUAL MEAN					5.32	1994
LOWEST ANNUAL MEAN					0.92	1993
HIGHEST DAILY MEAN	31	Oct 12	31	Oct 12	46	Oct 8, 1990
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Nov 3	[a]0.00	Oct 1, 1987
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Nov 3	0.00	Oct 1, 1987
ANNUAL RUNOFF (AC-FT)	3,550		3,570		2,450	
10 PERCENT EXCEEDS	15		16		12	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a No flow for many days in each year.



06430500 REDWATER CREEK AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44° 34'26", long 104° 02'54", in NW$^1/_4$ NW$^1/_4$ sec.18 T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on left bank 800 ft downstream from State line, 5.7 mi upstream from Crow Creek, and 12 mi southwest of Belle Fourche, SD.

DRAINAGE AREA.--471 mi^2.

PERIOD OF RECORD.--April 1929 to September 1931 and February 1936 to July 1937 (published as "near Beulah, WY"), June 1954 to current year.

REVISED RECORDS.--WSP 1309: 1931(M), 1936-37(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,410 ft above NGVD of 1929, from topographic map. Apr. 25, 1929, to Sept. 30, 1931, and Feb. 28, 1936, to July 31, 1937, nonrecording gage at site 2 mi upstream at different datum.

REMARKS.--Records good. Large diversions for irrigation upstream from station. Total flow passing State line may be obtained by adding flow of Murray ditch (see station 06429997). Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	35	33	33	33	30	36	37	23	27	8.7	14
2	15	35	34	33	36	30	36	36	29	26	9.0	14
3	15	36	34	33	34	30	36	37	28	26	9.5	14
4	19	36	34	32	34	30	36	38	28	27	13	14
5	27	35	33	33	34	30	36	37	29	27	18	14
6	27	35	33	32	34	30	36	37	28	27	20	13
7	27	35	33	32	e34	31	36	37	30	26	16	11
8	25	35	34	32	35	31	35	37	29	22	13	11
9	28	34	34	31	35	30	35	37	30	17	12	10
10	32	33	34	31	36	30	35	38	31	15	10	15
11	23	33	33	31	36	31	35	37	31	14	11	22
12	17	33	33	31	37	31	35	36	30	15	10	20
13	21	33	33	31	37	34	35	36	31	15	8.7	20
14	23	33	33	31	34	46	35	36	31	15	8.3	21
15	23	33	33	32	32	128	35	37	32	16	8.2	25
16	30	33	34	32	33	51	34	38	33	14	6.5	25
17	31	33	34	31	36	46	34	37	33	25	6.8	33
18	28	33	33	32	34	46	36	38	32	32	7.9	35
19	25	33	33	32	33	43	35	38	31	31	11	34
20	25	33	33	32	33	41	35	38	25	32	12	32
21	27	33	33	32	33	40	35	30	21	31	15	32
22	30	33	33	e31	33	39	35	26	23	12	17	33
23	32	33	33	e31	33	38	36	34	23	11	15	28
24	35	33	33	32	e30	37	37	24	25	11	15	22
25	35	33	33	32	e29	37	36	24	26	9.5	19	22
26	35	34	33	32	e29	37	35	24	34	10	23	22
27	35	34	33	33	31	37	35	24	31	9.2	20	21
28	35	34	34	33	30	36	36	23	28	9.1	16	22
29	36	33	33	33	---	36	36	18	28	9.2	11	22
30	35	33	33	33	---	36	37	12	27	9.2	13	22
31	35	---	33	33	---	36	---	13	---	9.2	15	---
TOTAL	847	1,012	1,032	992	938	1,208	1,064	994	860	579.4	398.6	643
MEAN	27.3	33.7	33.3	32.0	33.5	39.0	35.5	32.1	28.7	18.7	12.9	21.4
MAX	36	36	34	33	37	128	37	38	34	32	23	35
MIN	15	33	33	31	29	30	34	12	21	9.1	6.5	10
AC-FT	1,680	2,010	2,050	1,970	1,860	2,400	2,110	1,970	1,710	1,150	791	1,280

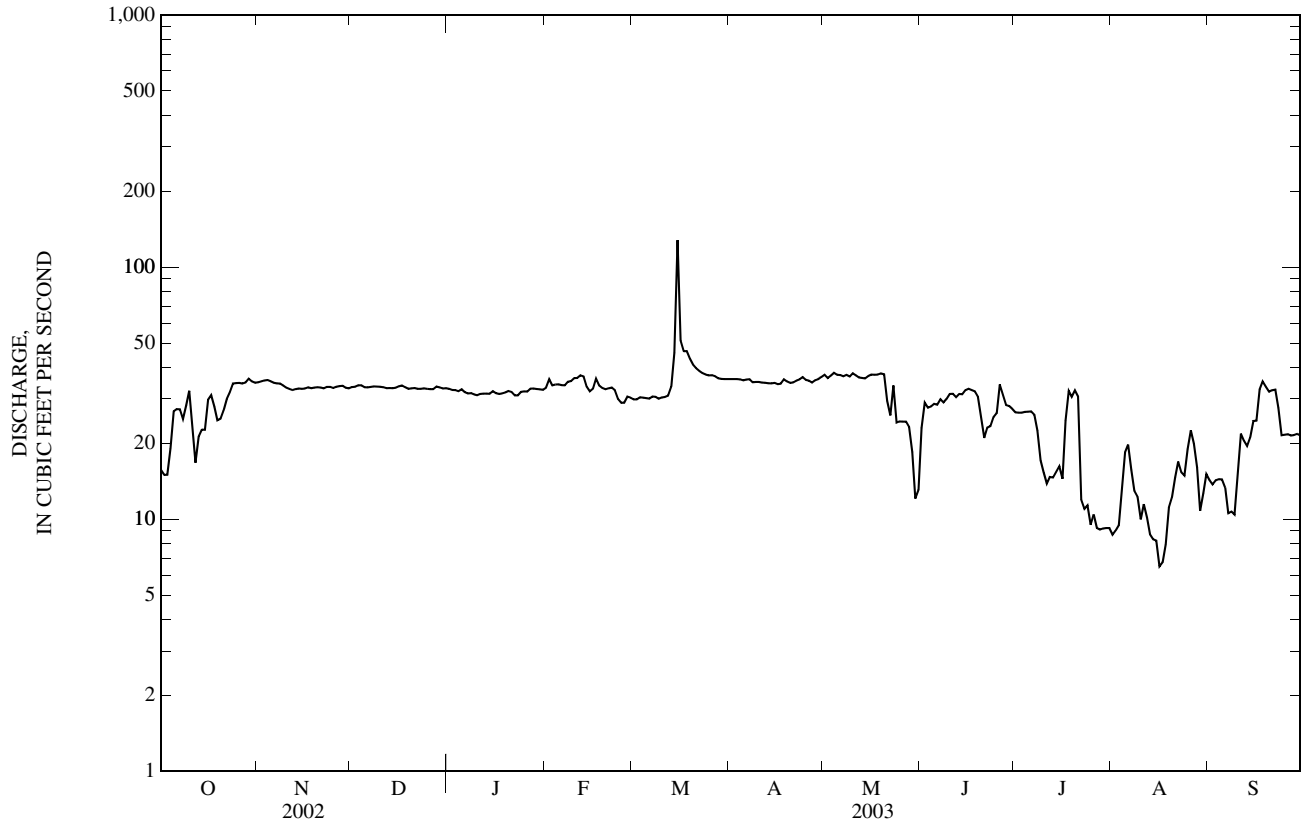
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2003, BY WATER YEAR (WY)*

MEAN	28.9	33.1	32.9	32.2	33.3	35.0	38.0	53.0	45.7	23.6	23.3	25.6
MAX	45.0	47.9	48.0	48.5	57.8	66.0	65.4	168	128	54.9	58.9	50.4
(WY)	(1973)	(1974)	(1999)	(1999)	(1971)	(1996)	(1999)	(1995)	(1976)	(1976)	(1973)	(1973)
MIN	14.2	20.8	21.5	20.7	21.2	22.1	18.8	7.44	6.29	7.62	6.78	11.8
(WY)	(1991)	(1961)	(1993)	(1993)	(1993)	(1962)	(1981)	(1985)	(1961)	(1990)	(1985)	(1985)

06430500 REDWATER CREEK AT WYOMING-SOUTH DAKOTA STATE LINE—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1955 - 2003*	
ANNUAL TOTAL	10,971.0		10,568.0			
ANNUAL MEAN	30.1		29.0		33.7	
HIGHEST ANNUAL MEAN					56.0	1973
LOWEST ANNUAL MEAN					17.9	1961
HIGHEST DAILY MEAN	45	Sep 18	128	Mar 15	1,330	May 9, 1995
LOWEST DAILY MEAN	5.9	Jul 9	6.5	Aug 16	[a]1.3	May 22, 1985
ANNUAL SEVEN-DAY MINIMUM	6.4	Jul 9	8.1	Aug 12	1.9	May 21, 1985
MAXIMUM PEAK FLOW			272	Mar 15	[b]2,440	Aug 22, 1973
MAXIMUM PEAK STAGE			4.97	Mar 15	12.19	Aug 22, 1973
ANNUAL RUNOFF (AC-FT)	21,760		20,960		24,410	
10 PERCENT EXCEEDS	39		36		47	
50 PERCENT EXCEEDS	33		32		31	
90 PERCENT EXCEEDS	15		14		16	

* Period using present site and datum only. See GAGE.
a No flow Aug. 13-15, 1929, during partial year.
b From rating curve extended above 1,000 ft^3/s on basis of slope-area measurement.
e Estimated.



06430532 CROW CREEK NEAR BEULAH, WY

LOCATION.--Lat 44° 34'14", long 104° 00'19", in $NW^1/_4$ $SE^1/_4$ $NW^1/_4$ sec.16, T.7 N., R.1 E., Lawrence County, Hydrologic Unit 10120203, on left bank 1,500 ft upstream from confluence with Redwater River, 0.8 mi north of McNenny Fish Hatchery, and approximately 4.4 mi east of Beulah.

DRAINAGE AREA.--40.8 mi^2.

PERIOD OF RECORD.--April 1992 to current year.

REVISED RECORDS.--WDR SD-97-1: 1996.

GAGE.--Water-stage recorder. Elevation of gage is 3,360 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperatures Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

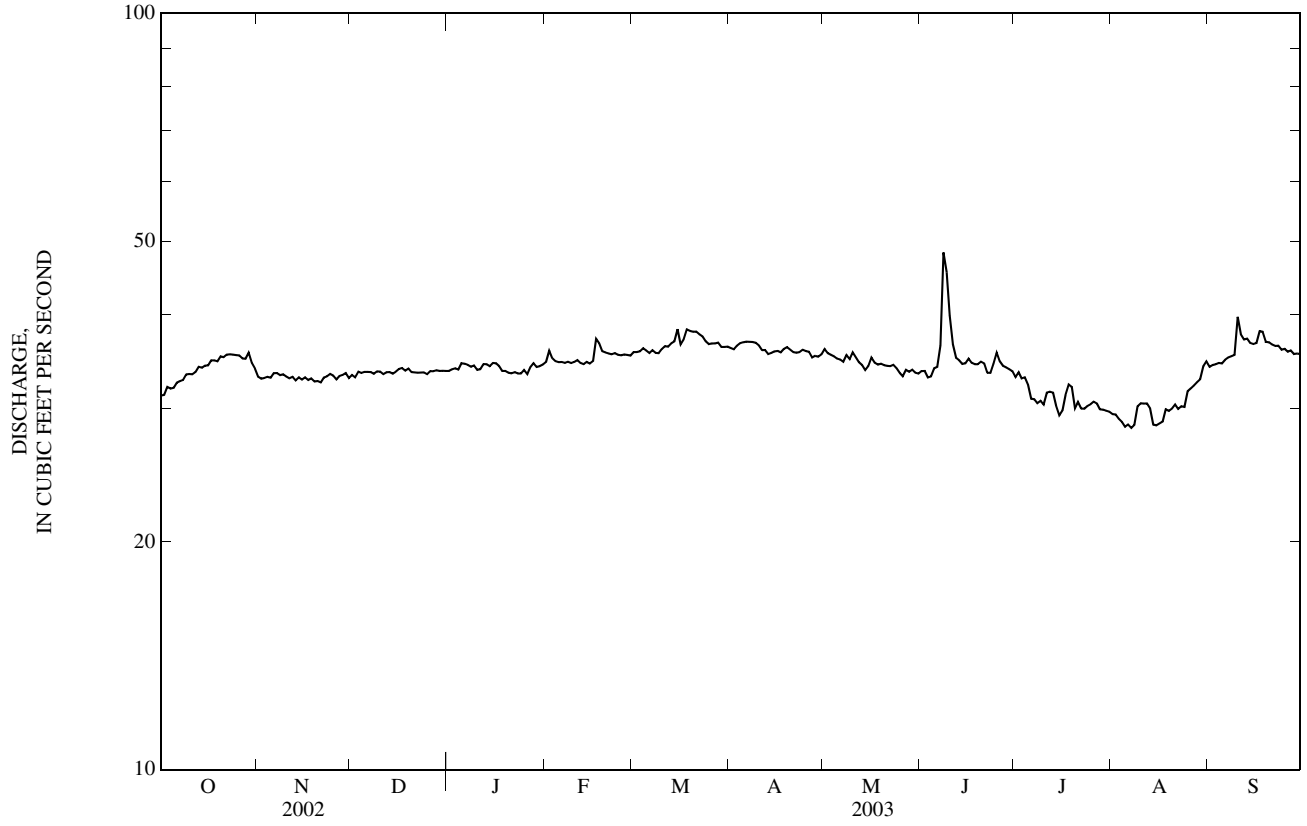
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	33	33	34	35	36	36	36	34	33	30	34
2	31	33	33	34	36	36	36	36	34	34	29	34
3	32	33	34	34	35	36	36	35	33	33	29	34
4	32	33	33	34	35	36	37	35	33	33	29	35
5	32	33	34	34	35	36	37	35	34	32	28	34
6	32	33	34	34	35	36	37	35	34	31	29	35
7	33	33	34	34	35	36	37	35	36	31	28	35
8	33	33	33	34	35	36	37	35	48	31	29	35
9	33	33	34	34	34	36	37	35	45	31	30	35
10	33	33	34	34	35	36	36	36	40	30	31	40
11	33	33	33	34	35	36	36	35	36	32	30	38
12	34	33	34	34	34	36	36	35	35	32	31	37
13	34	33	34	34	34	37	35	34	35	32	30	37
14	34	33	33	34	35	37	36	34	34	30	29	37
15	34	33	34	35	34	38	36	34	34	29	29	37
16	34	33	34	34	35	37	36	35	35	30	29	37
17	35	33	34	34	37	37	36	35	35	31	29	38
18	35	33	34	34	37	38	36	34	34	32	30	38
19	35	33	34	34	36	38	36	34	34	32	30	37
20	35	33	34	33	36	38	36	34	35	30	30	37
21	35	33	34	33	36	38	36	34	34	31	30	36
22	35	33	33	34	35	38	36	34	33	30	30	36
23	35	33	34	33	36	37	36	34	33	30	30	36
24	35	33	34	33	35	37	36	34	34	30	30	36
25	35	33	33	34	35	37	36	33	36	30	32	36
26	35	33	34	33	35	37	36	33	35	31	32	36
27	35	33	34	34	35	37	35	34	34	30	32	36
28	35	33	34	34	35	37	35	34	34	30	33	35
29	36	33	34	34	---	36	35	34	34	30	33	36
30	34	33	34	34	---	36	35	33	34	30	34	35
31	34	---	34	34	---	36	---	33	---	30	35	---
TOTAL	1,049	990	1,046	1,050	985	1,138	1,081	1,067	1,059	961	940	1,082
MEAN	33.8	33.0	33.7	33.9	35.2	36.7	36.0	34.4	35.3	31.0	30.3	36.1
MAX	36	33	34	35	37	38	37	36	48	34	35	40
MIN	31	33	33	33	34	36	35	33	33	29	28	34
AC-FT	2,080	1,960	2,070	2,080	1,950	2,260	2,140	2,120	2,100	1,910	1,860	2,150

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

MEAN	37.7	37.3	36.2	36.4	36.0	37.8	45.4	52.1	41.9	35.4	35.9	37.7
MAX	50.0	46.7	48.3	44.8	41.7	42.7	60.3	118	54.9	43.3	41.8	42.8
(WY)	(1999)	(1999)	(1996)	(1996)	(1996)	(1996)	(1994)	(1995)	(1993)	(1999)	(1999)	(1996)
MIN	31.8	30.7	31.9	31.2	33.0	33.7	33.9	33.5	30.8	31.0	30.3	33.6
(WY)	(2000)	(2000)	(1995)	(1995)	(2000)	(1995)	(1995)	(2002)	(2002)	(2003)	(2003)	(2002)

06430532 CROW CREEK NEAR BEULAH, WY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1993 - 2003	
ANNUAL TOTAL	12,262		12,448			
ANNUAL MEAN	33.6		34.1		39.2	
HIGHEST ANNUAL MEAN					44.7	1999
LOWEST ANNUAL MEAN					33.4	2002
HIGHEST DAILY MEAN	38	May 1	48	Jun 8	502	May 9, 1995
LOWEST DAILY MEAN	29	May 28	28	Aug 5	21	Jul 1, 1998
ANNUAL SEVEN-DAY MINIMUM	30	May 26	29	Aug 2	22	Jun 28, 1998
MAXIMUM PEAK FLOW			54	Jun 8	530	May 9, 1995
MAXIMUM PEAK STAGE			4.07	Jun 8	10.17	May 9, 1995
ANNUAL RUNOFF (AC-FT)	24,320		24,690		28,370	
10 PERCENT EXCEEDS	35		37		46	
50 PERCENT EXCEEDS	34		34		36	
90 PERCENT EXCEEDS	31		31		32	



06430770 SPEARFISH CREEK NEAR LEAD, SD

LOCATION.--Lat 44° 17'56", long 103° 52'02", in NE$^1/_4$ NW$^1/_4$ sec.22, T.4 N., R.2 E., Lawrence County, Hydrologic Unit 10120203, on right bank 0.5 mi below confluence of East Spearfish Creek, in the vicinity of Cheyenne Crossing, approximately 5 mi southwest of Lead.

DRAINAGE AREA.--63.5 mi^2.

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5,310 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Upstream diversions out of drainage basin to Whitewood Creek basin by Homestake Mining Co. average about 12 ft^3/s. Daily discharges do not include diversion by Homestake Mining Co. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 673 ft^3/s, May 14, 1965, from contracted-opening measurement of peak flow 2.0 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	36	27	e26	27	26	30	32	29	36	31	29
2	31	36	27	e26	27	25	30	31	29	36	32	29
3	31	35	27	e26	27	26	31	31	30	35	31	29
4	31	35	27	e26	27	25	31	31	30	34	35	29
5	31	34	27	e26	26	24	30	31	30	34	38	29
6	31	36	26	e27	25	24	30	31	31	34	37	30
7	30	36	26	e27	e21	24	29	31	35	34	37	30
8	30	37	26	e27	27	23	31	33	37	33	39	29
9	30	38	26	e26	26	23	30	34	35	32	37	29
10	30	37	25	e25	27	24	31	35	34	32	36	35
11	31	37	26	e24	26	24	32	35	34	32	37	32
12	31	37	25	e25	26	25	33	34	34	32	35	32
13	30	37	24	e26	26	26	34	34	36	31	31	32
14	30	36	25	e26	26	27	34	32	40	31	27	31
15	31	37	25	e25	27	27	33	32	40	32	27	31
16	30	38	25	e24	27	28	32	32	39	32	27	29
17	31	38	27	e24	27	29	31	32	40	33	27	30
18	30	38	26	e24	27	28	32	32	38	33	27	30
19	30	37	26	e24	26	26	32	31	38	33	29	29
20	32	37	26	e24	26	25	31	32	37	32	29	29
21	32	37	26	e25	26	26	31	31	36	31	30	28
22	34	34	25	e25	26	27	30	30	36	31	30	28
23	34	30	25	e25	e22	28	30	30	35	31	29	27
24	34	29	25	e25	e19	28	31	30	36	31	28	27
25	35	27	e24	e24	e22	28	31	30	37	30	29	26
26	35	28	e24	e25	27	28	31	30	35	29	29	26
27	36	28	e25	e25	28	27	31	30	35	30	29	26
28	36	28	e25	e26	27	27	31	29	36	31	30	27
29	35	27	e25	e27	---	27	31	29	36	30	30	27
30	35	27	e25	27	---	27	31	28	36	31	30	27
31	36	---	e26	26	---	29	---	28	---	31	29	---
TOTAL	995	1,027	794	788	721	811	935	971	1,054	997	972	872
MEAN	32.1	34.2	25.6	25.4	25.8	26.2	31.2	31.3	35.1	32.2	31.4	29.1
MAX	36	38	27	27	28	29	34	35	40	36	39	35
MIN	30	27	24	24	19	23	29	28	29	29	27	26
AC-FT	1,970	2,040	1,570	1,560	1,430	1,610	1,850	1,930	2,090	1,980	1,930	1,730

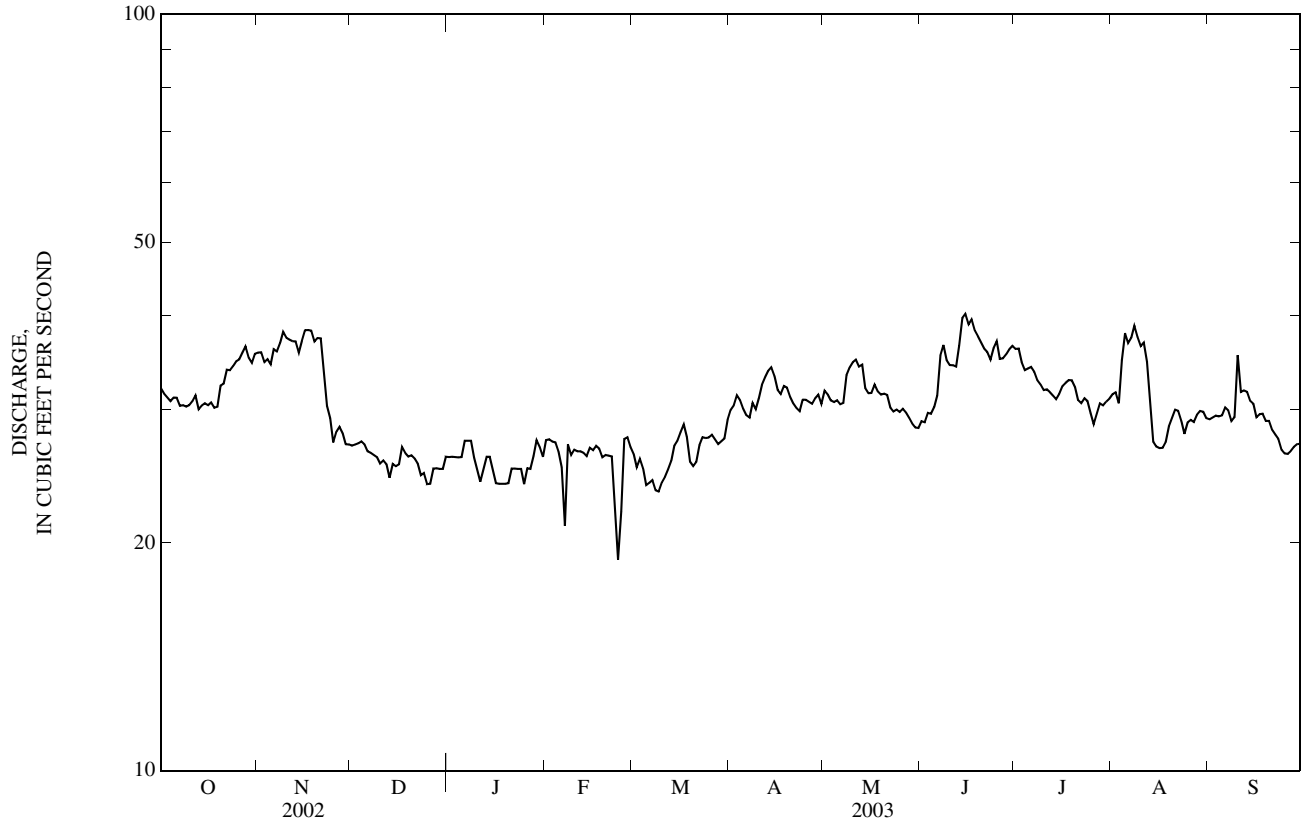
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

MEAN	27.3	27.2	25.3	24.9	25.0	26.3	31.8	39.0	35.8	31.6	30.1	28.5
MAX	49.4	45.5	46.0	43.3	44.1	45.0	50.4	67.4	60.8	52.2	59.3	51.5
(WY)	(1999)	(2000)	(2000)	(2000)	(1999)	(1999)	(1999)	(1997)	(1999)	(1998)	(1998)	(1998)
MIN	13.0	13.3	11.9	12.2	11.4	12.1	15.0	16.5	16.1	12.5	10.3	11.1
(WY)	(1991)	(1991)	(1991)	(1990)	(1990)	(1990)	(1989)	(1992)	(1990)	(1990)	(1990)	(1990)

06430770 SPEARFISH CREEK NEAR LEAD, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1989 - 2003	
ANNUAL TOTAL	10,897		10,937			
ANNUAL MEAN	29.9		30.0		[a]29.4	
HIGHEST ANNUAL MEAN					48.1	1999
LOWEST ANNUAL MEAN					14.2	1990
HIGHEST DAILY MEAN	45	Sep 18	40	Jun 14	108	May 10, 1995
LOWEST DAILY MEAN	20	Mar 10	19	Feb 24	7.5	Dec 22, 1990
ANNUAL SEVEN-DAY MINIMUM	22	Feb 25	24	Mar 5	9.5	Aug 24, 1990
MAXIMUM PEAK FLOW			48	Jun 14	181	Aug 20, 1998
MAXIMUM PEAK STAGE			7.70	Jun 14	8.39	Aug 20, 1998
ANNUAL RUNOFF (AC-FT)	21,610		21,690		21,320	
10 PERCENT EXCEEDS	35		36		47	
50 PERCENT EXCEEDS	31		30		28	
90 PERCENT EXCEEDS	24		25		13	

a Median of annual mean discharges, 30 ft^3/s.
e Estimated.



06430800 ANNIE CREEK NEAR LEAD, SD

LOCATION.--Lat 44° 19'37", long 103° 53'38", in $NW^1/_4$ $NW^1/_4$ $NW^1/_4$ sec.9, T.4 N., R.2 E., Lawrence County, Hydrologic Unit 10120203, on left bank 200 ft upstream from mouth and about 6 mi southwest of Lead.

DRAINAGE AREA.--3.55 mi^2.

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

GAGE.--Water-stage recorder and V-notch weir. Elevation of gage is 5,125 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.20	e0.06	e0.19	e0.00	e0.00	e0.00	1.2	2.4	1.9	1.6	0.46	0.26
2	0.20	e0.10	0.17	e0.00	e0.00	e0.00	1.3	2.6	1.7	1.5	0.40	0.22
3	0.19	e0.12	0.11	e0.00	e0.00	e0.00	1.6	2.7	1.6	1.4	0.35	0.13
4	0.20	e0.14	0.10	e0.00	e0.00	e0.00	1.4	2.9	1.8	1.3	0.34	0.21
5	0.21	e0.15	e0.00	e0.00	e0.00	e0.00	1.4	2.9	2.2	1.3	0.33	0.19
6	0.21	e0.19	e0.00	e0.00	e0.00	e0.00	1.3	2.8	3.1	1.2	0.36	0.18
7	0.19	e0.27	e0.00	e0.00	e0.00	e0.00	1.2	2.7	7.2	1.1	0.52	0.18
8	0.19	0.25	e0.00	e0.00	e0.00	e0.00	1.1	2.6	17	1.1	0.57	0.17
9	0.18	0.18	e0.00	e0.00	e0.00	e0.00	1.2	2.6	16	1.0	0.50	0.17
10	0.17	0.15	e0.00	e0.00	e0.00	e0.00	1.3	2.9	12	0.95	0.59	0.60
11	0.16	0.13	e0.00	e0.00	e0.00	e0.00	1.4	3.1	9.0	0.94	0.47	0.33
12	0.16	0.12	e0.00	e0.00	e0.00	e0.00	1.9	3.7	7.8	1.0	0.40	0.38
13	0.16	0.13	e0.00	e0.00	e0.00	e0.00	2.6	5.9	7.5	0.94	0.27	0.51
14	0.15	0.13	e0.00	e0.00	e0.00	e0.00	2.9	6.7	7.7	0.89	0.25	0.44
15	0.14	0.11	e0.00	e0.00	e0.00	e0.00	2.9	6.5	7.3	0.89	0.24	0.40
16	0.14	0.08	e0.00	e0.00	e0.00	e0.00	2.7	5.7	6.7	0.93	0.24	0.37
17	0.17	0.10	e0.00	e0.00	e0.00	e0.00	2.4	5.0	6.2	0.88	0.26	0.43
18	0.22	0.11	e0.00	e0.00	e0.00	e0.00	2.4	4.5	5.7	0.85	0.28	0.44
19	0.16	0.10	e0.00	e0.00	e0.00	e0.00	2.2	4.0	5.0	0.81	0.44	0.41
20	0.14	0.10	e0.00	e0.00	e0.00	e0.00	2.0	3.6	4.0	0.71	0.40	0.39
21	0.15	0.11	e0.00	e0.00	e0.00	e0.00	2.0	3.3	3.7	0.63	0.34	0.36
22	0.15	0.11	e0.00	e0.00	e0.00	e1.0	2.0	3.1	3.3	0.63	0.32	0.34
23	0.16	0.11	e0.00	e0.00	0.00	e3.0	2.0	2.8	3.2	0.61	0.28	0.31
24	0.15	e0.08	e0.00	e0.00	0.00	1.3	2.2	2.6	3.2	0.60	0.25	0.26
25	0.13	e0.06	e0.00	e0.00	0.00	1.2	2.0	2.4	2.8	0.55	0.27	0.27
26	0.14	e0.10	e0.00	e0.00	0.00	1.2	2.0	2.4	2.6	0.49	0.30	0.28
27	0.15	e0.14	e0.00	e0.00	0.00	0.80	1.9	2.2	2.4	0.51	0.27	0.27
28	0.15	e0.20	e0.00	e0.00	0.00	0.51	1.8	2.1	2.2	0.45	0.25	0.27
29	e0.11	e0.19	e0.00	e0.00	---	0.50	1.9	1.9	2.0	0.41	0.26	0.27
30	e0.08	0.16	e0.00	e0.00	---	0.52	2.0	1.8	1.8	0.39	0.29	0.26
31	e0.07	---	e0.00	e0.00	---	0.53	---	1.7	---	0.38	0.30	---
TOTAL	4.98	3.98	0.57	0.00	0.00	10.56	56.2	102.1	158.6	26.94	10.80	9.30
MEAN	0.16	0.13	0.018	0.000	0.000	0.34	1.87	3.29	5.29	0.87	0.35	0.31
MAX	0.22	0.27	0.19	0.00	0.00	3.0	2.9	6.7	17	1.6	0.59	0.60
MIN	0.07	0.06	0.00	0.00	0.00	0.00	1.1	1.7	1.6	0.38	0.24	0.13
AC-FT	9.9	7.9	1.1	0.00	0.00	21	111	203	315	53	21	18

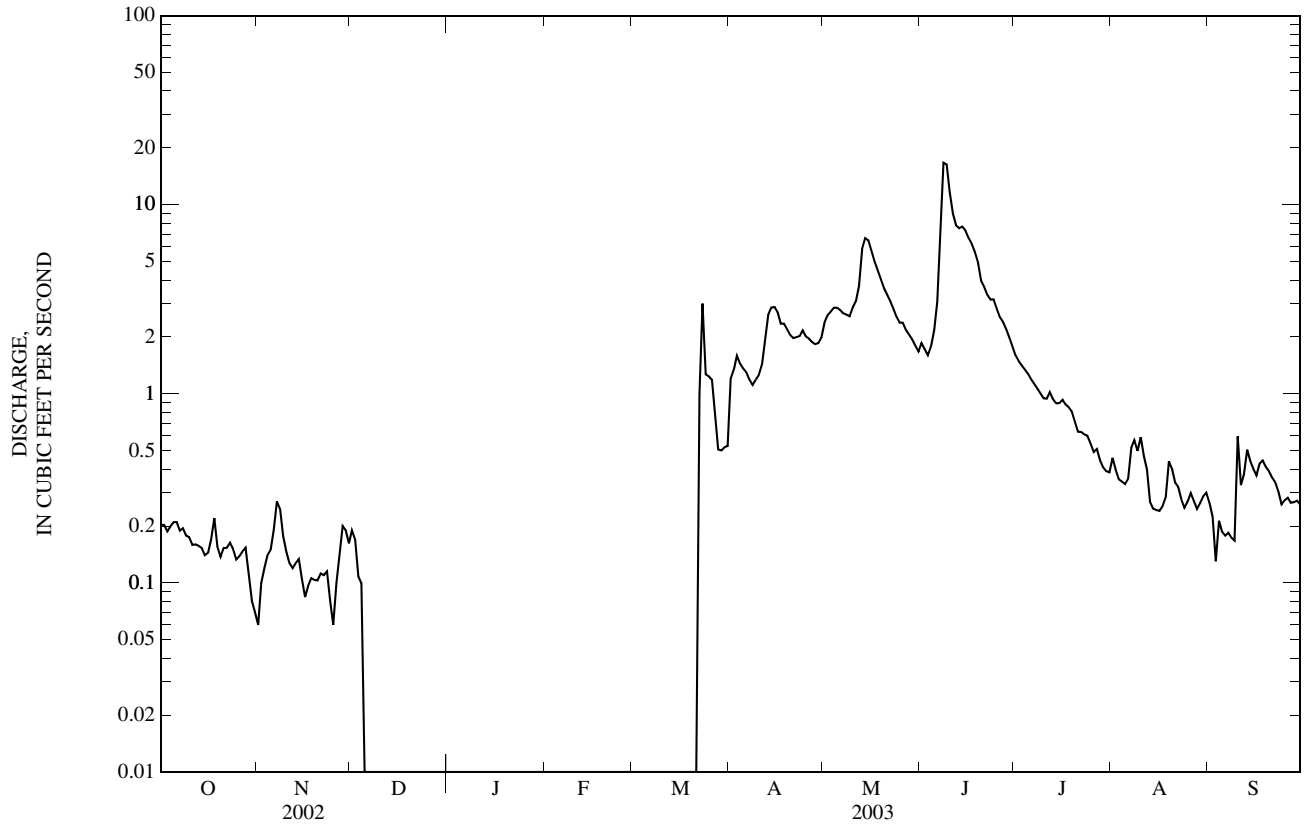
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

MEAN	0.73	0.48	0.36	0.34	0.35	1.05	4.10	6.27	2.87	1.03	0.67	0.42
MAX	4.27	2.05	1.20	0.91	1.02	3.03	9.79	28.5	8.54	2.31	2.43	1.51
(WY)	(1999)	(1999)	(1999)	(1997)	(1999)	(1999)	(1997)	(1995)	(1998)	(1995)	(1998)	(1998)
MIN	0.052	0.10	0.018	0.000	0.000	0.082	0.75	1.00	0.48	0.21	0.095	0.061
(WY)	(1993)	(1993)	(2003)	(2003)	(1993)	(1991)	(1991)	(2002)	(2002)	(2002)	(2002)	(1992)

06430800 ANNIE CREEK NEAR LEAD, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1989 - 2003	
ANNUAL TOTAL	112.60		384.03			
ANNUAL MEAN	0.31		1.05		[a]1.56	
HIGHEST ANNUAL MEAN					4.04	1995
LOWEST ANNUAL MEAN					0.37	2002
HIGHEST DAILY MEAN	1.5	Apr 6	17	Jun 8	188	May 8, 1995
LOWEST DAILY MEAN	0.00	Dec 5	0.00	Dec 5	[b]0.00	Mar 2, 1989
ANNUAL SEVEN-DAY MINIMUM	0.00	Dec 5	0.00	Dec 5	0.00	Jan 6, 1993
MAXIMUM PEAK FLOW			[c]19	Jun 8	[d]270	May 8, 1995
MAXIMUM PEAK STAGE			[f]6.38	Jan 28	[f]6.38	Jan 28, 2003
ANNUAL RUNOFF (AC-FT)	223		762		1,130	
10 PERCENT EXCEEDS	0.95		2.9		3.8	
50 PERCENT EXCEEDS	0.18		0.25		0.55	
90 PERCENT EXCEEDS	0.06		0.00		0.10	

a Median of annual mean discharges, 1.2 ft^3/s.
b Also Mar. 3-7, 1989, Jan. 6 to Mar. 16, 1993, and Dec. 5, 2002, to Mar. 21, 2003.
c Gage height, 4.82 ft.
d Gage height, 6.12 ft.
e Estimated.
f Backwater from ice, observed.



06430850 LITTLE SPEARFISH CREEK NEAR LEAD, SD

LOCATION.--Lat 44° 20'58", long 103° 56'08", in $NE^1/_4$ $NW^1/_4$ $SE^1/_4$ sec.36, T.5 N., R.1 E., Lawrence County, Hydrologic Unit 10120203, on left bank 0.3 mi upstream from Savoy, 0.4 mi upstream from mouth, 0.6 mi downstream from Roughlock Falls, and 13.6 mi northwest of Lead.

DRAINAGE AREA.--25.8 mi^2.

PERIOD OF RECORD.--October 1988 to September 1998, October 1999 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5,020 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	16	17	17	16	14	14	20	e16	e15	15	12
2	16	17	18	17	16	14	15	20	e16	e15	15	12
3	15	17	18	16	16	14	15	20	e16	e15	15	11
4	16	17	18	16	15	14	15	20	e16	e15	15	11
5	16	17	17	17	15	14	15	21	e16	e15	15	11
6	16	17	18	17	15	14	14	21	e17	e15	15	11
7	16	17	17	17	15	14	14	21	e18	e15	15	12
8	16	17	17	17	15	14	14	21	e20	e14	15	12
9	16	17	18	16	15	14	14	20	e17	e14	15	13
10	16	17	18	16	15	14	14	20	e16	e15	15	14
11	16	17	18	16	15	14	14	20	e15	15	14	13
12	16	17	17	16	16	14	15	20	e16	15	14	13
13	17	17	17	17	15	14	15	19	e16	15	13	14
14	16	17	17	17	15	14	15	19	e16	15	13	13
15	16	17	17	17	15	14	15	18	e16	15	13	13
16	17	17	17	17	15	14	15	18	e15	15	13	13
17	17	17	17	17	15	14	15	17	e15	15	13	13
18	17	17	17	16	15	14	15	17	e15	15	12	13
19	17	17	17	16	15	14	15	16	e15	15	13	13
20	16	17	17	16	15	14	15	e15	e15	15	13	13
21	16	17	17	16	15	14	15	e15	e15	15	13	13
22	16	17	17	16	15	13	15	e15	e15	15	13	13
23	16	17	17	16	15	14	16	e15	e15	15	13	13
24	17	17	16	16	14	14	17	e15	e16	15	12	13
25	17	17	16	16	15	14	17	e15	e16	15	12	13
26	17	17	17	16	14	14	18	e15	e15	15	12	12
27	17	18	17	16	15	14	18	e15	e15	15	12	13
28	17	18	17	16	15	14	18	e15	e15	15	12	13
29	17	18	18	16	---	14	19	e15	e16	15	12	13
30	16	17	18	16	---	14	19	e15	e15	15	12	13
31	16	---	17	16	---	14	---	e15	---	15	12	---
TOTAL	509	512	534	507	422	433	465	548	475	463	416	379
MEAN	16.4	17.1	17.2	16.4	15.1	14.0	15.5	17.7	15.8	14.9	13.4	12.6
MAX	19	18	18	17	16	14	19	21	20	15	15	14
MIN	15	16	16	16	14	13	14	15	15	14	12	11
AC-FT	1,010	1,020	1,060	1,010	837	859	922	1,090	942	918	825	752

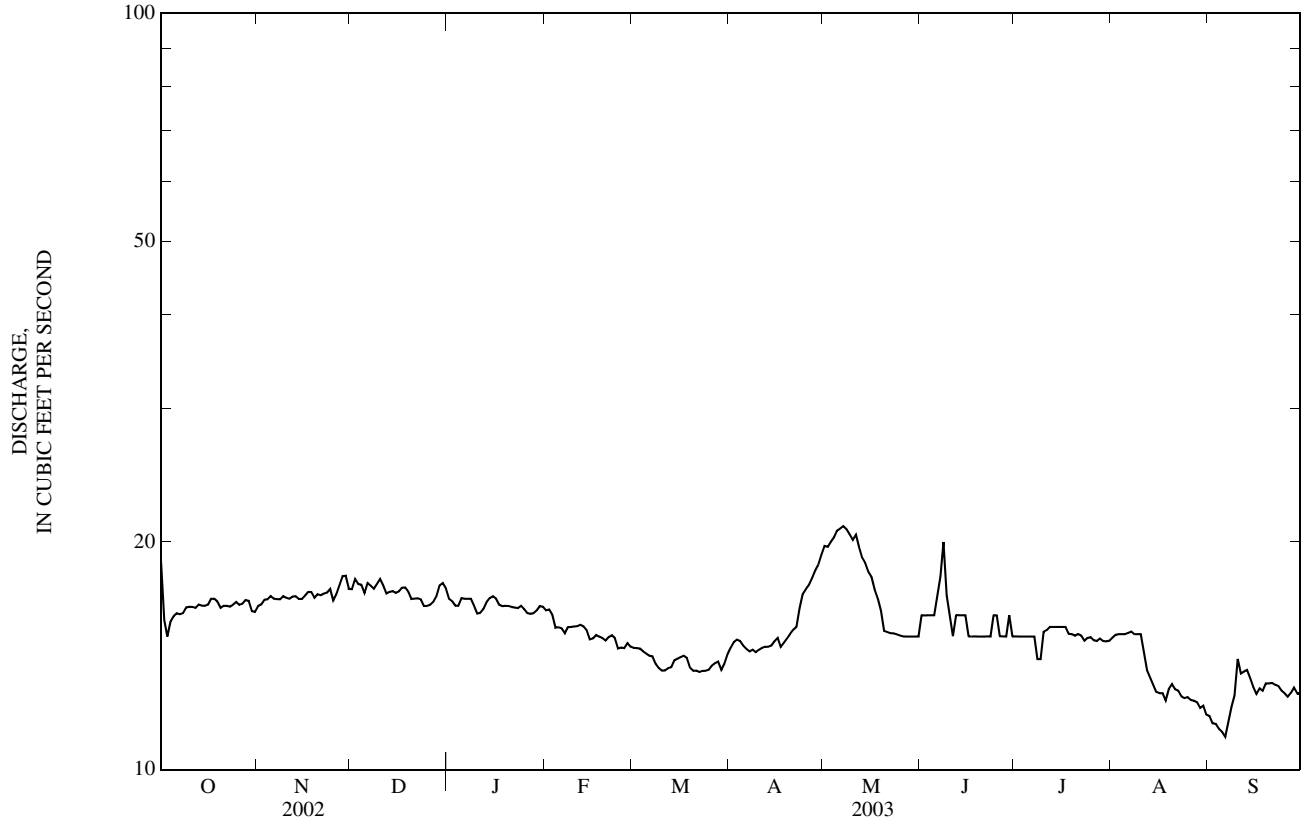
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

MEAN	16.9	16.7	16.3	15.6	15.6	15.8	17.1	19.8	19.6	17.8	17.2	16.7
MAX	23.2	25.1	25.7	23.1	22.4	21.6	25.1	34.6	28.7	26.1	24.4	23.8
(WY)	(2000)	(2000)	(2000)	(2000)	(2000)	(1998)	(1997)	(1995)	(1997)	(1997)	(1996)	(1996)
MIN	12.2	11.1	10.3	9.96	11.0	12.2	12.0	13.1	13.7	12.6	12.9	12.0
(WY)	(1992)	(1993)	(1993)	(1993)	(1993)	(1991)	(1993)	(1992)	(1990)	(1992)	(1992)	(1991)

06430850 LITTLE SPEARFISH CREEK NEAR LEAD, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1989 - 2003	
ANNUAL TOTAL	5,766		5,663			
ANNUAL MEAN	15.8		15.5		17.1	
HIGHEST ANNUAL MEAN					23.1	2000
LOWEST ANNUAL MEAN					12.5	1993
HIGHEST DAILY MEAN	19	Apr 6	21	May 5	61	May 10, 1995
LOWEST DAILY MEAN	13	Jan 5	11	Sep 3	9.7	Jan 2, 1993
ANNUAL SEVEN-DAY MINIMUM	13	Jan 20	11	Aug 31	9.8	Dec 30, 1992
ANNUAL RUNOFF (AC-FT)	11,440		11,230		12,390	
10 PERCENT EXCEEDS	17		17		23	
50 PERCENT EXCEEDS	16		15		16	
90 PERCENT EXCEEDS	14		13		12	

e Estimated.



06430900 SPEARFISH CREEK ABOVE SPEARFISH, SD

LOCATION.--Lat 44° 24'06", long 103° 53'40", in $NW^1/_4$ $NE^1/_4$ $NE^1/_4$ sec.17, T.5 N., R.2 E., Lawrence County, Hydrologic Unit 10120203, on left bank immediately below confluence of Squaw Creek and 8.0 mi south of Spearfish.

DRAINAGE AREA.--139 mi^2.

PERIOD OF RECORD.--October 1988 to current year. Operated as partial-record crest-stage gage station from October 1998 to September 2001.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 4,440 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good. Upstream diversions out of drainage basin to Whitewood Creek Basin by Homestake Mining Co. average about 12 ft^3/s. Figures of daily discharge do not include diversion by Homestake Mining Co. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	57	56	54	55	56	65	73	62	71	57	57
2	59	57	56	54	57	52	72	74	62	70	57	56
3	59	56	56	54	55	54	72	74	62	68	56	56
4	59	57	56	54	55	52	68	73	62	67	56	56
5	59	57	53	55	55	50	63	73	65	66	56	56
6	59	57	54	54	52	54	61	70	74	65	56	56
7	58	57	55	54	41	52	59	68	110	63	56	56
8	58	58	55	54	57	51	58	69	165	62	59	56
9	58	60	54	54	56	51	59	74	149	61	58	56
10	58	59	55	48	56	51	59	83	130	61	57	72
11	58	58	55	44	56	51	62	88	116	61	57	62
12	58	57	55	50	55	53	67	96	107	62	58	61
13	58	58	54	55	54	55	72	108	106	61	56	62
14	58	57	54	57	54	58	74	108	110	61	54	60
15	58	57	54	57	54	61	74	102	110	60	53	58
16	58	58	54	55	53	63	74	96	104	61	52	58
17	58	58	55	48	54	68	70	90	102	61	53	60
18	57	57	55	56	53	66	70	85	98	60	55	61
19	57	57	54	56	53	60	70	83	95	60	51	60
20	57	57	53	55	53	57	67	79	90	60	54	59
21	56	57	51	55	53	56	64	76	87	60	55	58
22	57	57	50	49	53	57	62	73	84	59	55	57
23	57	57	47	52	45	58	63	70	84	59	55	56
24	57	57	43	57	39	58	66	68	89	58	55	56
25	57	48	45	56	43	58	65	66	90	58	55	56
26	57	52	46	55	49	58	63	67	82	58	56	56
27	57	55	53	54	53	57	62	66	79	58	55	56
28	58	57	56	55	57	55	62	64	79	57	56	56
29	58	57	55	54	---	53	63	63	76	58	57	56
30	56	56	55	55	---	54	65	62	73	57	58	56
31	57	---	55	54	---	55	---	61	---	57	58	---
TOTAL	1,791	1,702	1,649	1,664	1,470	1,734	1,971	2,402	2,802	1,900	1,726	1,741
MEAN	57.8	56.7	53.2	53.7	52.5	55.9	65.7	77.5	93.4	61.3	55.7	58.0
MAX	60	60	56	57	57	68	74	108	165	71	59	72
MIN	56	48	43	44	39	50	58	61	62	57	51	56
AC-FT	3,550	3,380	3,270	3,300	2,920	3,440	3,910	4,760	5,560	3,770	3,420	3,450

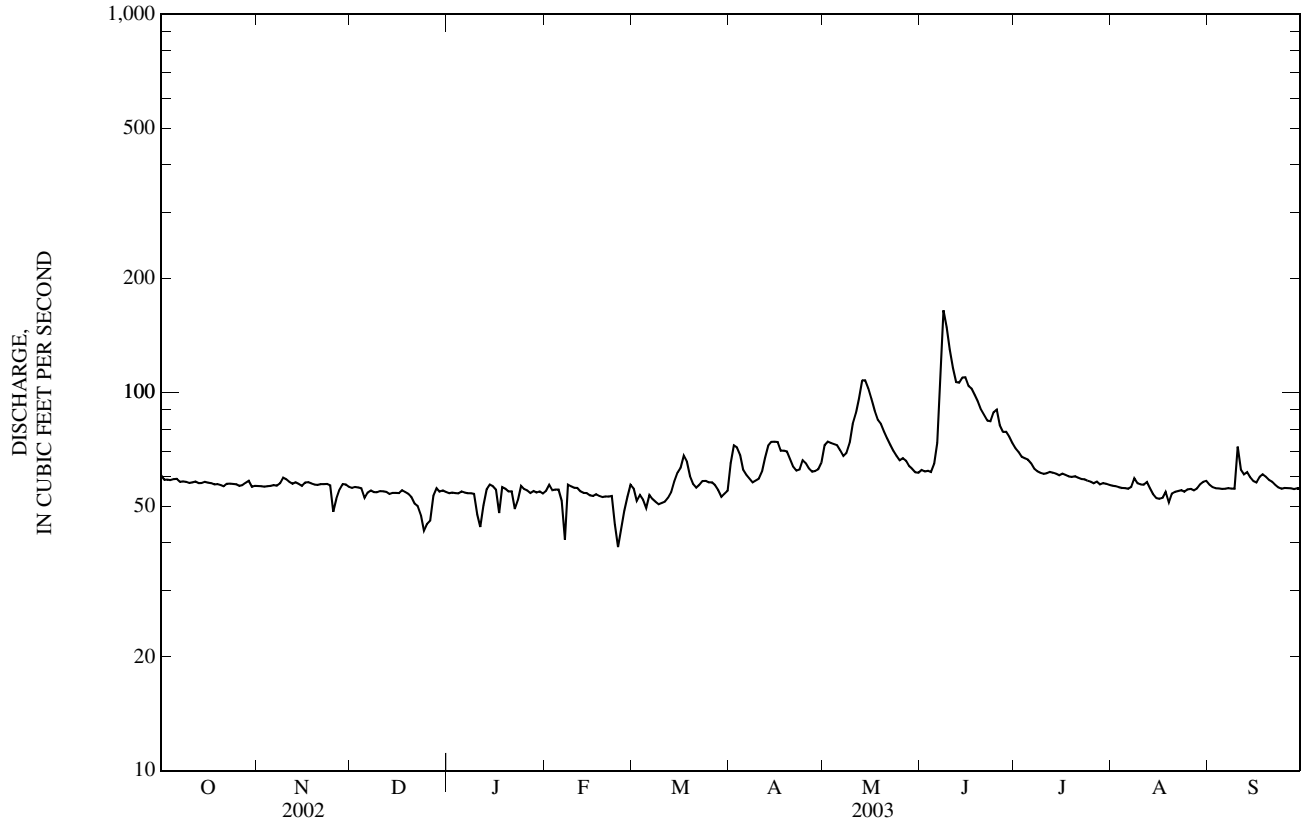
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1997, 2002 - 2003, BY WATER YEAR (WY)

MEAN	52.7	51.3	48.9	47.9	47.8	55.8	78.0	111	80.3	61.5	57.0	55.0
MAX	80.2	79.8	77.7	75.2	75.3	87.3	149	307	129	101	99.8	87.5
(WY)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1995)	(1996)	(1997)	(1997)	(1997)
MIN	35.5	37.2	29.8	31.8	37.0	39.5	44.8	45.3	41.4	37.7	35.9	34.9
(WY)	(1993)	(1991)	(1992)	(1992)	(1993)	(1993)	(1992)	(1992)	(1992)	(1990)	(1992)	(1991)

06430900 SPEARFISH CREEK ABOVE SPEARFISH, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1989-1997, 2002-2003	
ANNUAL TOTAL	21,304		22,552			
ANNUAL MEAN	58.4		61.8		[a]62.2	
HIGHEST ANNUAL MEAN					103	1997
LOWEST ANNUAL MEAN					38.1	1992
HIGHEST DAILY MEAN	88	Sep 18	165	Jun 8	1,470	May 8, 1995
LOWEST DAILY MEAN	43	Dec 24	39	Feb 24	18	Jan 15, 1992
ANNUAL SEVEN-DAY MINIMUM	48	Dec 20	48	Dec 20	26	Jan 11, 1992
MAXIMUM PEAK FLOW			171	Jun 8	[b]2,890	May 8, 1995
MAXIMUM PEAK STAGE			3.67	Jun 8	[b]7.42	May 8, 1995
ANNUAL RUNOFF (AC-FT)	42,260		44,730		45,060	
10 PERCENT EXCEEDS	65		74		96	
50 PERCENT EXCEEDS	57		57		54	
90 PERCENT EXCEEDS	53		53		36	

a Median of annual mean discharges, 60 ft^3/s.
b Reflects water years 1989-2003.



06431500 SPEARFISH CREEK AT SPEARFISH, SD

LOCATION.--Lat 44° 28'57", long 103° 51'40", in $SE^1/_4$ $NW^1/_4$ sec.15, T.6 N., R.2 E., Lawrence County, Hydrologic Unit 10120203, on right bank in city park in Spearfish, 500 ft downstream from fish hatchery and nearest tributary, and 9.8 mi upstream from mouth.

DRAINAGE AREA.--168 mi^2.

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1116: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,640 ft above NGVD of 1929, from topographic map. Prior to Dec. 5, 1946, nonrecording gage at same site and datum.

REMARKS.--Records fair. Regulation by fish hatchery and by hydroelectric plant 0.5 mi upstream causes diurnal fluctuation, but since storage capacity is small, daily flows are not appreciably affected. Upstream diversions out of drainage basin to Whitewood Creek basin by the Homestake Mining Co. average about 12 ft^3/s. Figures of daily discharge do not include diversion by Homestake Mining Co. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 5, 1904, reached a stage of 7.00 ft, site and datum of former gage near Spearfish, 1.0 mi upstream, drainage area, 157 mi^2; discharge about 5,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	54	53	54	56	63	72	69	69	46	52	55
2	56	54	54	53	59	56	84	71	72	45	51	68
3	57	54	54	54	55	57	85	68	60	47	54	63
4	56	54	54	54	56	55	89	68	62	55	54	71
5	55	54	52	54	57	52	87	68	68	53	44	66
6	55	55	54	53	54	55	86	65	80	54	43	64
7	54	54	54	53	45	52	87	61	122	52	42	61
8	54	55	54	53	61	50	61	60	180	51	46	67
9	55	56	54	53	60	47	62	66	135	45	43	65
10	54	56	54	48	61	46	64	73	108	48	45	84
11	54	55	54	44	61	45	66	72	105	64	45	71
12	54	55	55	50	60	44	71	74	77	79	47	65
13	54	55	54	55	60	45	75	90	86	75	51	66
14	54	54	54	57	60	46	76	94	103	80	54	50
15	54	54	55	56	60	48	75	91	104	75	46	35
16	56	55	54	55	61	48	78	84	94	74	50	35
17	56	55	54	48	63	51	77	75	91	76	43	37
18	55	54	54	56	63	49	75	73	84	75	48	38
19	56	54	54	56	63	50	76	74	83	71	43	37
20	54	54	53	55	63	59	74	72	78	71	43	36
21	55	54	50	54	64	56	70	71	73	69	43	36
22	56	54	50	50	64	57	67	74	69	69	46	39
23	56	54	48	53	58	59	62	74	65	56	63	36
24	55	54	44	57	e55	59	61	71	72	51	60	34
25	56	47	45	56	e44	59	60	69	79	55	73	34
26	55	50	46	54	53	59	60	71	55	63	68	35
27	56	53	52	54	58	60	58	68	62	51	60	36
28	56	54	56	56	66	59	59	66	67	48	66	44
29	57	54	54	56	---	57	60	68	60	48	72	46
30	54	54	54	56	---	58	62	65	48	45	76	46
31	54	---	55	55	---	60	---	64	---	50	72	---
TOTAL	1,711	1,619	1,632	1,662	1,640	1,661	2,139	2,229	2,511	1,841	1,643	1,520
MEAN	55.2	54.0	52.6	53.6	58.6	53.6	71.3	71.9	83.7	59.4	53.0	50.7
MAX	58	56	56	57	66	63	89	94	180	80	76	84
MIN	54	47	44	44	44	44	58	60	48	45	42	34
AC-FT	3,390	3,210	3,240	3,300	3,250	3,290	4,240	4,420	4,980	3,650	3,260	3,010

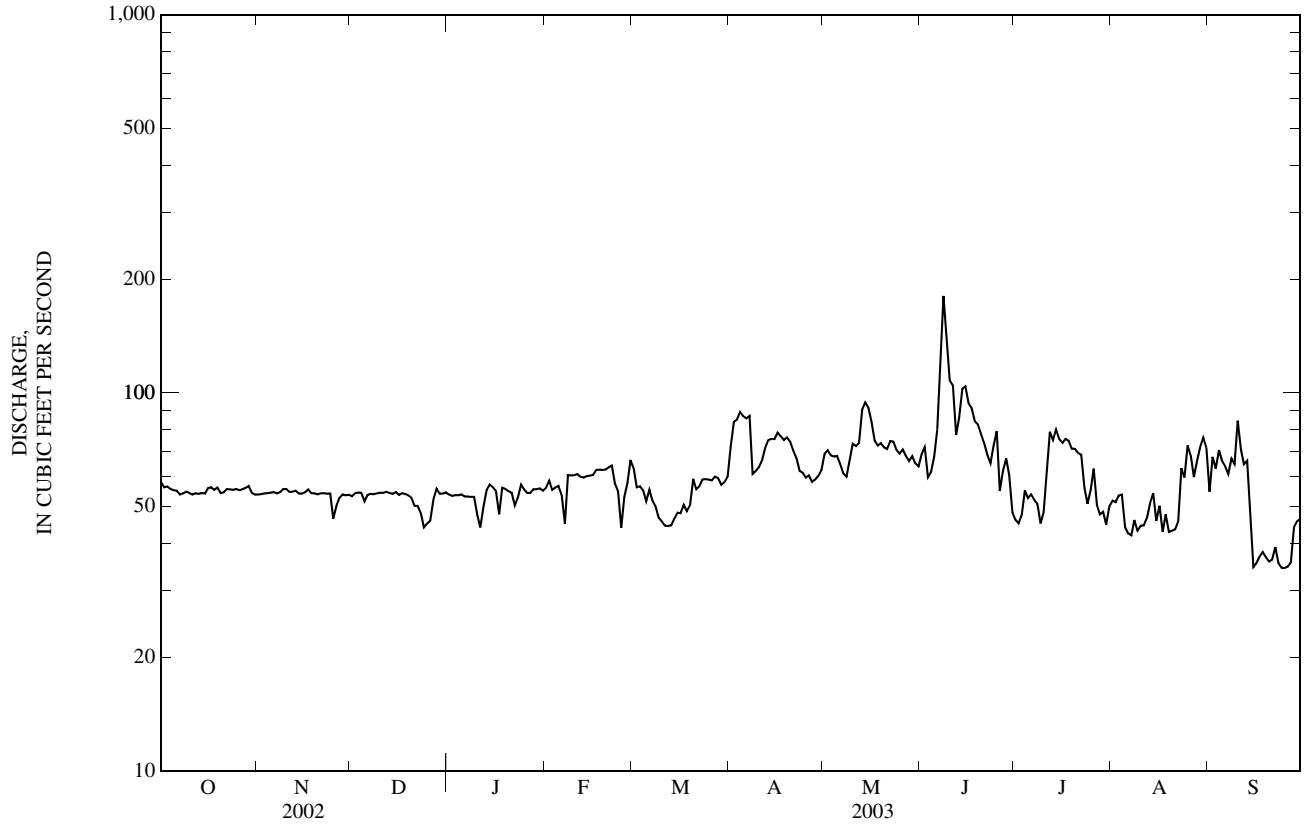
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

MEAN	48.3	48.0	44.9	43.8	44.3	47.4	66.4	101	77.8	53.8	47.9	46.1
MAX	98.5	111	99.0	93.4	89.4	99.5	139	505	185	118	107	97.1
(WY)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1997)	(1982)	(1976)	(1999)	(1999)	(1999)
MIN	25.1	24.4	24.1	22.7	26.5	25.2	31.1	28.9	29.1	24.6	23.6	24.1
(WY)	(1962)	(1962)	(1982)	(1962)	(1962)	(1962)	(1961)	(1961)	(1961)	(1961)	(1961)	(1961)

06431500 SPEARFISH CREEK AT SPEARFISH, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1947 - 2003	
ANNUAL TOTAL	19,953		21,808			
ANNUAL MEAN	54.7		59.7		55.8	
HIGHEST ANNUAL MEAN					106	1999
LOWEST ANNUAL MEAN					27.1	1961
HIGHEST DAILY MEAN	123	Sep 19	180	Jun 8	1,880	May 15, 1965
LOWEST DAILY MEAN	38	Jan 1	34	Sep 24	[a]9.0	Dec 2, 1959
ANNUAL SEVEN-DAY MINIMUM	45	Jul 31	36	Sep 20	18	Dec 18, 1981
MAXIMUM PEAK FLOW			209	Jun 7	[b]4,240	May 15, 1965
MAXIMUM PEAK STAGE			7.25	Jun 7	10.54	Jun 15, 1976
ANNUAL RUNOFF (AC-FT)	39,580		43,260		40,450	
10 PERCENT EXCEEDS	60		75		87	
50 PERCENT EXCEEDS	54		56		47	
90 PERCENT EXCEEDS	46		46		32	

a No flow for part of Oct. 18, 1970.
b From rating curve extended above 520 ft^3/s on basis of slope-area measurement of peak flow, gage height, 10.53 ft.
e Estimated.



06433000 REDWATER RIVER ABOVE BELLE FOURCHE, SD

LOCATION.--Lat 44° 40'02", long 103° 50'20", in $NW^1/_4$ $SE^1/_4$ sec.11, T.8 N., R.2 E., Butte County, Hydrologic Unit 10120203, on right bank near downstream end of bridge on old U.S. Highway 212 in Belle Fourche, 0.5 mi upstream from Hay Creek, and 0.9 mi upstream from mouth.

DRAINAGE AREA.--920 mi^2.

PERIOD OF RECORD.--November 1945 to current year. Daily discharges for October 1946 estimated; yearly discharge published in WSP 1309 does not include October. Prior to October 1960, published as Redwater Creek above Belle Fourche.

REVISED RECORDS.--WSP 1389: 1954 (maximum gage height only).

GAGE.--Water-stage recorder. Elevation of gage is 3,000 ft above NGVD of 1929, from topographic map. Prior to Dec. 13, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 13,000 acres upstream from station. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	163	157	147	150	158	157	192	75	67	15	51
2	129	167	157	146	168	152	166	183	87	59	17	53
3	131	168	e155	147	156	151	170	173	83	47	15	65
4	132	166	e153	147	150	155	175	178	84	44	11	81
5	148	165	e151	150	149	155	171	175	88	52	11	87
6	139	164	155	153	147	153	171	164	112	48	7.6	87
7	143	164	157	152	138	167	169	165	153	45	9.0	77
8	145	163	155	151	e140	162	167	166	194	38	12	76
9	145	162	154	150	e145	e157	167	171	207	36	12	80
10	147	164	154	e148	152	e153	167	180	189	28	11	146
11	154	162	153	e148	151	155	168	192	183	22	8.9	166
12	154	161	152	e151	151	157	173	184	181	21	7.9	145
13	150	161	154	e154	151	164	178	191	180	21	8.7	146
14	150	161	154	e152	152	174	186	194	183	20	7.9	143
15	152	160	157	e148	151	209	191	190	188	18	7.3	142
16	154	161	156	e148	151	246	193	213	181	9.7	6.8	147
17	162	162	153	e155	190	189	191	183	157	9.3	6.5	153
18	158	161	152	e155	187	218	196	169	137	9.9	8.2	172
19	147	159	150	e148	165	210	207	174	128	13	20	155
20	134	159	149	e148	161	203	204	169	122	13	26	152
21	140	160	e147	e146	156	193	200	158	120	12	35	152
22	154	160	e145	e140	155	177	194	151	123	11	37	156
23	160	158	e140	e146	e140	169	194	149	116	9.0	38	152
24	160	162	e145	e149	e120	166	198	143	119	7.5	37	139
25	162	155	e149	e150	148	160	182	133	125	7.1	29	139
26	161	162	e148	e151	161	157	190	130	111	7.3	29	144
27	158	159	e150	e155	181	157	196	120	114	8.2	30	142
28	156	162	152	157	175	154	189	106	105	8.1	28	142
29	164	159	149	154	---	151	191	99	87	7.8	35	141
30	161	158	147	151	---	151	192	86	77	8.5	42	139
31	156	---	148	152	---	152	---	78	---	12	53	---
TOTAL	4,638	4,848	4,698	4,649	4,341	5,275	5,493	4,959	4,009	719.4	621.8	3,770
MEAN	150	162	152	150	155	170	183	160	134	23.2	20.1	126
MAX	164	168	157	157	190	246	207	213	207	67	53	172
MIN	129	155	140	140	120	151	157	78	75	7.1	6.5	51
AC-FT	9,200	9,620	9,320	9,220	8,610	10,460	10,900	9,840	7,950	1,430	1,230	7,480

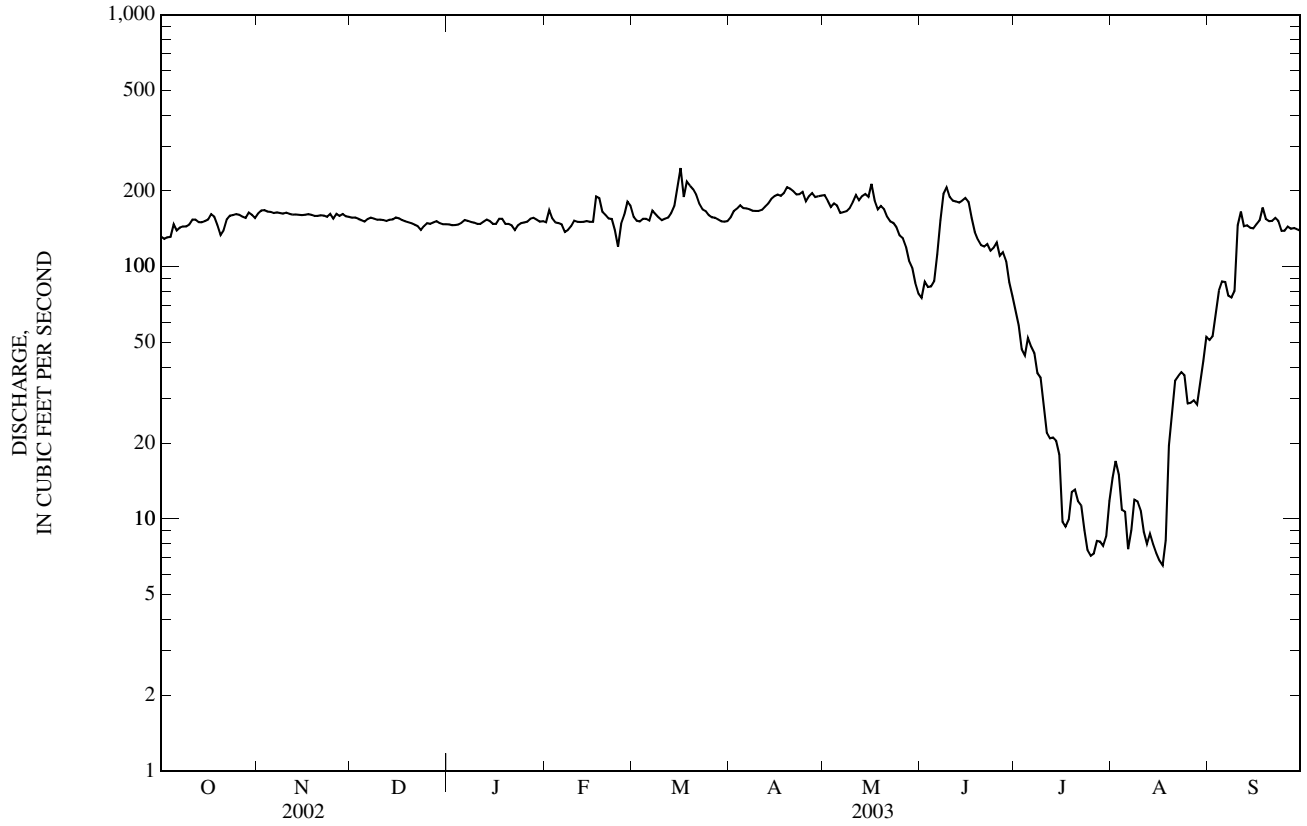
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

MEAN	137	148	144	138	148	161	182	240	190	61.7	48.0	91.0
MAX	313	268	229	246	278	276	359	988	834	263	178	192
(WY)	(1999)	(1999)	(1999)	(1997)	(1996)	(1996)	(1997)	(1995)	(1946)	(1946)	(1998)	(1946)
MIN	50.6	82.7	69.9	83.5	91.7	105	62.9	20.0	4.07	2.13	2.72	19.3
(WY)	(1961)	(1961)	(1962)	(1957)	(1993)	(1961)	(1981)	(1992)	(1988)	(1960)	(1959)	(1959)

06433000 REDWATER RIVER ABOVE BELLE FOURCHE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL TOTAL	42,836.9		48,021.2			
ANNUAL MEAN	117		132		141	
HIGHEST ANNUAL MEAN					251	1999
LOWEST ANNUAL MEAN					57.1	1961
HIGHEST DAILY MEAN	204	May 1	246	Mar 16	5,790	May 20, 1982
LOWEST DAILY MEAN	5.9	Jul 16	6.5	Aug 17	[a]0.00	May 1, 1981
ANNUAL SEVEN-DAY MINIMUM	6.1	Jul 12	7.6	Aug 12	0.56	Jul 30, 1960
MAXIMUM PEAK FLOW			368	Mar 15	[b]16,400	Jun 16, 1962
MAXIMUM PEAK STAGE			3.64	Mar 15	11.69	Jun 16, 1962
ANNUAL RUNOFF (AC-FT)	84,970		95,250		101,800	
10 PERCENT EXCEEDS	170		183		220	
50 PERCENT EXCEEDS	150		152		131	
90 PERCENT EXCEEDS	12		20		22	

a No flow at times in 1960, 1968-69, 1981-82, and 1988.
b From rating curve extended above 6,000 ft^3/s on basis of slope-area measurement of peak flow.
e Estimated.



06434505 INLET CANAL ABOVE BELLE FOURCHE RESERVOIR, SD

LOCATION.--Lat 44° 42'05", long 103° 44'00", in NW$^1/_4$ SE$^1/_4$ NE$^1/_4$ sec.34, T.9 N., R.3 E., Butte County, Hydrologic Unit 10120202, on left bank 6.5 mi downstream from diversion dam on Belle Fourche River, and 2.5 mi northwest of Fruitdale.

PERIOD OF RECORD.--October 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,980 ft above NGVD of 1929 from topographic map. Prior to October 1994, another station located on Inlet Canal near Belle Fourche (station 06434500) at site 5.6 mi upstream (discharge records are not equivalent because of diversions for irrigation).

REMARKS.--Records good. Records show actual diversions to Belle Fourche Reservoir (see station 06435000), from Belle Fourche River and Crow Creek. Bureau of Reclamation satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

COOPERATION.--Records of diversion from the canal provided by the Belle Fourche Irrigation District.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e158	e168	176	170	174	199	247	212	90	78	47	143
2	e143	e170	175	168	200	192	248	214	103	50	60	135
3	e139	182	e166	169	192	189	248	207	91	41	53	146
4	139	184	e167	173	185	175	245	211	88	33	56	160
5	156	186	e168	174	181	173	238	229	93	47	52	161
6	152	184	e170	179	177	170	234	240	122	35	38	176
7	154	189	171	175	163	190	226	229	159	67	48	153
8	159	187	173	176	178	165	220	226	205	86	49	139
9	155	184	175	169	190	152	214	229	222	98	46	131
10	159	181	162	172	185	171	211	230	218	81	32	195
11	163	179	165	173	196	177	209	243	231	70	30	248
12	167	176	163	185	197	157	209	237	227	58	32	217
13	161	175	166	181	171	172	209	235	220	49	44	195
14	166	174	170	168	167	202	209	239	213	51	58	180
15	164	175	178	154	167	261	207	236	210	46	46	173
16	167	172	183	165	166	783	207	251	200	42	46	158
17	175	173	183	143	207	1,030	205	223	193	33	58	169
18	172	173	188	174	231	1,080	204	209	164	52	57	180
19	163	172	178	190	247	1,000	213	211	142	48	64	216
20	142	171	e175	184	241	845	207	203	116	44	74	160
21	144	171	e170	169	234	635	200	194	105	50	91	154
22	170	172	e170	142	206	493	192	183	107	42	91	150
23	174	171	e170	117	178	400	188	176	97	45	92	155
24	175	177	e172	191	152	343	192	171	98	36	96	146
25	176	174	e173	168	149	343	185	157	122	45	80	141
26	183	179	e175	145	183	446	181	153	131	45	68	140
27	178	183	e177	193	204	382	180	145	115	53	76	140
28	181	179	e180	214	206	346	180	129	103	71	65	139
29	192	185	e178	178	---	304	192	79	98	70	74	139
30	190	176	177	164	---	274	192	107	90	61	97	141
31	176	---	170	169	---	264	---	93	---	52	133	---
TOTAL	5,093	5,322	5,364	5,292	5,327	11,713	6,292	6,101	4,373	1,679	1,953	4,880
MEAN	164	177	173	171	190	378	210	197	146	54.2	63.0	163
MAX	192	189	188	214	247	1,080	248	251	231	98	133	248
MIN	139	168	162	117	149	152	180	79	88	33	30	131
AC-FT	10,100	10,560	10,640	10,500	10,570	23,230	12,480	12,100	8,670	3,330	3,870	9,680

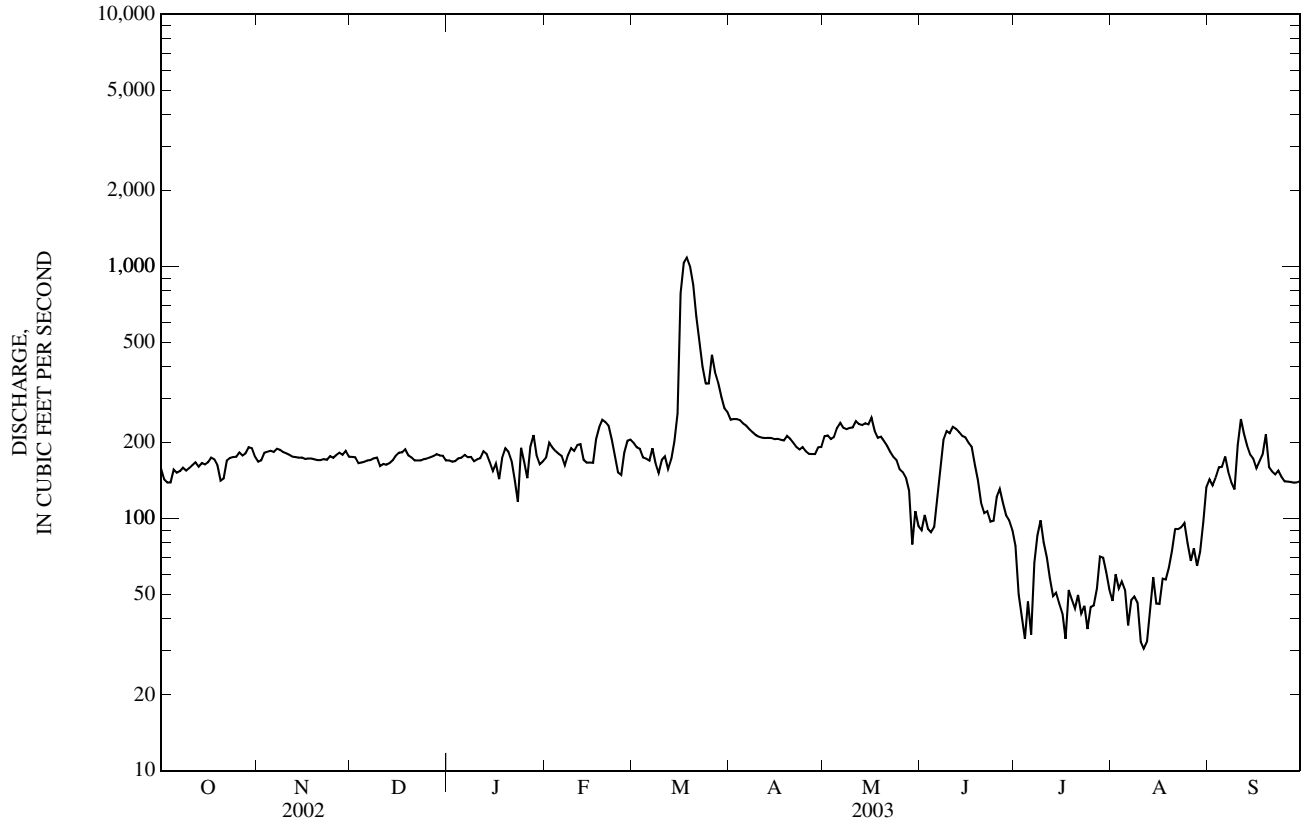
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2003, BY WATER YEAR (WY)

MEAN	218	176	134	163	117	160	106	165	195	145	120	155
MAX	462	296	220	372	193	378	210	254	291	314	240	211
(WY)	(1999)	(2001)	(1998)	(1997)	(1997)	(2003)	(2003)	(2001)	(2001)	(1999)	(1998)	(2002)
MIN	54.5	0.040	1.70	1.64	2.06	0.95	4.88	79.5	66.3	54.2	52.5	96.2
(WY)	(2000)	(1997)	(1999)	(2000)	(2000)	(1996)	(1997)	(1999)	(2002)	(2003)	(2000)	(2001)

06434505 INLET CANAL ABOVE BELLE FOURCHE RESERVOIR, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1995 - 2003	
ANNUAL TOTAL	59,118.1		63,389			
ANNUAL MEAN	162		174		155	
HIGHEST ANNUAL MEAN					183	2001
LOWEST ANNUAL MEAN					113	2000
HIGHEST DAILY MEAN	358	Sep 19	1,080	Mar 18	1,300	Oct 17, 1998
LOWEST DAILY MEAN	3.6	Jun 6	30	Aug 11	[a]0.00	Dec 31, 1995
ANNUAL SEVEN-DAY MINIMUM	9.7	May 31	39	Aug 6	0.00	Nov 16, 1996
MAXIMUM PEAK FLOW			1,230	Mar 18	1,630	Oct 17, 1998
MAXIMUM PEAK STAGE			8.16	Mar 18	9.00	Oct 17, 1998
ANNUAL RUNOFF (AC-FT)	117,300		125,700		112,000	
10 PERCENT EXCEEDS	210		230		273	
50 PERCENT EXCEEDS	172		172		166	
90 PERCENT EXCEEDS	88		58		1.3	

a No flow at times in some years.
e Estimated.



06435000 BELLE FOURCHE RESERVOIR NEAR BELLE FOURCHE, SD

LOCATION.--Lat 44°44'12", long 103°40'27", in $SW^1/_4$ $SE^1/_4$ sec.18, T.9 N., R.4 E., Butte County, Hydrologic Unit 10120202, at dam on Owl Creek, 9.8 mi northeast of Belle Fourche.

PERIOD OF RECORD.--January 1912 to current year (monthend contents only).

GAGE.--Water-stage recorder. Elevations listed to NGVD of adjustment of 1912. Prior to June 6, 1967, nonrecording gage at present site and datum.

REMARKS.--Offstream reservoir formed by earthfill dam. Storage began in May 1910; dam completed in April 1911. Conservation capacity, 185,277 acre-ft (1949 survey), between elevations 2,927.0 ft (lowest outlet) and 2,975.0 ft. Dead storage below elevation 2,927.0 ft, 6,800 acre-ft. Figures given herein represent contents above elevation 2,927.0 ft. Water diverted from Belle Fourche River through Inlet Canal (see station 06434505) is stored in Belle Fourche Reservoir for irrigation.

COOPERATION.--Records of elevation and contents provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 197,400 acre-ft, Apr. 30, 1919, May 20, 1920, elevation, 2,974.9 ft; minimum observed, -3,000 acre-ft, Sept. 30, 1936, water was lowered below dead storage level of 2,927.0 ft by opening holes in crib walls.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 145,900 acre-ft, May 27, elevation, 2,969.85 ft; minimum, 46,100 acre-ft, Sept. 19, elevation, 2,951.45 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,952.28	49,200	--
Oct. 31	2,954.75	59,200	+10,000
Nov. 30	2,957.07	69,800	+10,600
Dec. 31	2,959.07	79,600	+9,800
CAL YR 2002	--	--	-38,200
Jan. 31	2,960.96	89,600	+10,000
Feb. 28	2,962.83	100,200	+10,600
Mar. 31	2,966.65	123,800	+23,600
Apr. 30	2,968.43	135,800	+12,000
May 31	2,969.73	145,100	+9,300
June 30	2,968.20	134,300	-10,800
July 31	2,961.26	91,300	-43,000
Aug. 31	2,952.61	50,500	-40,800
Sept. 30	2,952.34	49,400	-1,100
WTR YR 2003	--	--	+200

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06436000 BELLE FOURCHE RIVER NEAR FRUITDALE, SD

LOCATION.--Lat 44° 41'27", long 103° 44'14", in NW$^1/_4$ NE$^1/_4$ sec.3, T.8 N., R.3 E., Butte County, Hydrologic Unit 10120202, on left bank near downstream end of bridge on U.S. Highway 212, 2.5 mi northwest of Fruitdale, and 8.8 mi downstream from point of diversion to Belle Fourche Reservoir.

DRAINAGE AREA.--4,540 mi^2, approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 2,925 ft above NGVD of 1929, from topographic map. Prior to Apr. 9, 1947, nonrecording gage and Apr. 10, 1947, to Oct. 14, 1948, water-stage recorder, at site 100 ft upstream at same datum. Oct. 15, 1948, to Dec. 30, 1958, water-stage recorder and Dec. 31, 1958, to Sept. 23, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Keyhole Dam since Oct. 25, 1952, usable capacity, 191,600 acre-ft, 180 mi upstream. Maximum discharge prior to Sept. 30, 1953, 7,460 ft^3/s, June 23, 1947, gage height, 11.03 ft; no flow at times in 1945 and 1948. At a point 8.8 mi above station, water is diverted to Belle Fourche Reservoir (see station 06435000) through Inlet Canal (see station 06434505), with other smaller diversions from the main stem and tributaries for irrigation. Total diversions for irrigation of about 60,000 acres upstream from station. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section. Additional water-quality samples collected as part of a Total Maximum Daily Load (TMDL) sampling program to be published in a separate report.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	12	e8.0	7.2	10	8.2	3.3	4.7	8.0	10	12	21
2	14	10	e8.0	7.1	13	8.1	3.5	4.4	8.6	9.4	11	19
3	14	8.5	e8.0	7.5	10	8.2	3.6	3.4	9.2	8.3	9.1	15
4	13	8.6	e7.6	7.9	9.4	7.7	3.7	3.6	11	8.2	8.7	9.5
5	14	14	e7.6	7.8	8.7	7.2	3.6	3.5	12	8.9	8.7	9.4
6	14	12	8.6	8.0	8.6	7.2	3.4	2.6	13	8.5	9.8	8.6
7	14	9.0	8.6	7.9	7.9	e7.0	3.8	2.8	15	9.1	11	8.4
8	15	8.7	8.4	7.8	7.1	e6.3	3.5	3.2	16	9.9	10	8.0
9	14	8.1	8.0	e8.3	8.7	e6.1	2.9	3.3	13	12	9.5	7.5
10	14	8.0	7.9	e8.0	9.0	e6.3	2.9	3.5	16	12	11	12
11	14	8.3	7.9	e7.6	8.4	e6.6	3.0	3.4	9.9	10	14	12
12	14	8.1	7.8	7.6	8.0	6.9	3.1	2.9	8.5	8.5	14	9.0
13	14	8.0	7.8	7.7	7.6	7.1	3.0	2.9	7.5	4.9	12	8.9
14	14	7.7	7.7	7.6	7.4	7.4	3.1	2.8	7.8	7.5	10	7.4
15	14	7.8	7.8	e7.3	7.5	7.4	4.2	2.6	7.5	6.8	12	6.5
16	12	7.9	7.9	e7.0	7.5	7.6	3.6	3.6	7.5	7.3	12	6.2
17	11	7.9	7.9	e6.7	12	130	3.4	3.2	7.5	8.0	13	6.5
18	11	7.8	8.4	e7.2	11	83	3.6	3.1	6.7	8.8	15	7.4
19	11	7.7	e9.0	e7.7	9.1	14	4.0	3.0	8.3	12	14	6.3
20	11	7.6	e9.0	e7.7	9.2	6.5	3.6	2.6	8.2	12	12	6.1
21	11	7.7	e7.3	e7.0	9.0	5.6	3.2	2.5	7.8	13	12	5.9
22	12	7.9	e7.0	e6.3	8.4	5.1	2.9	2.5	7.5	14	13	5.7
23	12	7.7	e7.2	e6.8	8.2	4.7	2.9	2.4	7.0	11	13	5.6
24	12	8.0	7.6	e7.0	e8.3	4.4	3.2	6.2	9.8	9.5	14	5.7
25	12	7.7	7.6	e7.3	8.3	4.3	3.2	6.8	11	11	15	5.8
26	12	e7.5	7.5	e7.4	8.4	4.1	3.0	6.6	11	8.5	13	5.9
27	12	e7.5	8.1	e7.8	8.5	3.9	2.7	6.7	9.9	12	13	5.9
28	12	e7.7	8.6	e8.6	8.3	3.5	3.1	6.7	9.6	11	15	5.8
29	13	e8.2	8.6	e9.0	---	3.5	3.9	6.6	9.8	12	15	5.7
30	13	e8.2	7.7	10	---	3.6	3.9	6.5	9.3	12	17	5.8
31	12	---	7.0	9.6	---	3.3	---	6.5	---	13	19	---
TOTAL	399	255.8	246.1	238.4	247.5	394.8	100.8	125.1	293.9	309.1	387.8	252.5
MEAN	12.9	8.53	7.94	7.69	8.84	12.7	3.36	4.04	9.80	9.97	12.5	8.42
MAX	15	14	9.0	10	13	130	4.2	6.8	16	14	19	21
MIN	11	7.5	7.0	6.3	7.1	3.3	2.7	2.4	6.7	4.9	8.7	5.6
AC-FT	791	507	488	473	491	783	200	248	583	613	769	501

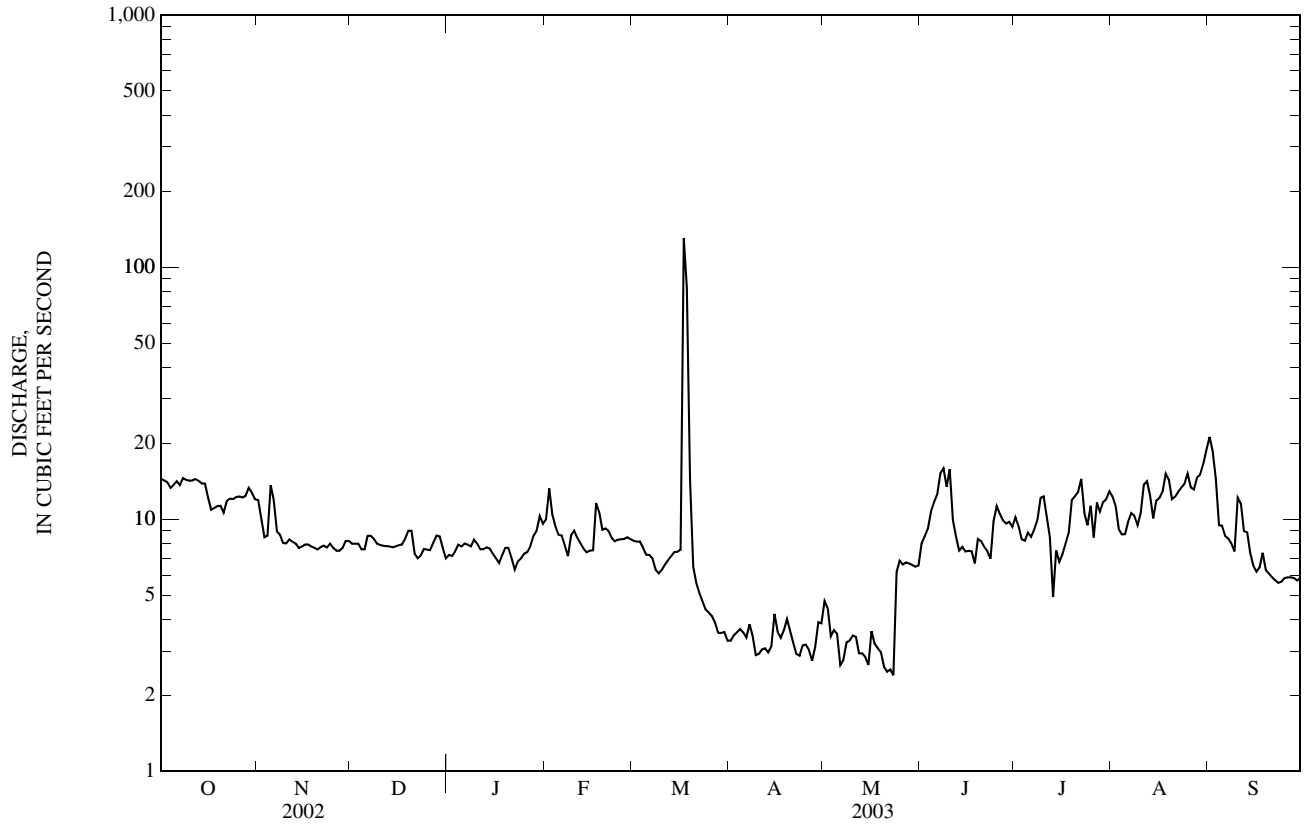
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)*

MEAN	19.3	28.5	20.7	22.2	52.0	115	161	316	213	41.1	14.4	11.2
MAX	228	594	298	280	535	1,125	984	2,256	1,149	525	88.0	54.4
(WY)	(2000)	(1999)	(1999)	(1999)	(1996)	(1996)	(1997)	(1995)	(1976)	(1993)	(1993)	(1993)
MIN	3.82	3.33	3.23	1.97	1.32	2.46	2.30	3.12	0.33	0.22	0.30	2.24
(WY)	(1961)	(1979)	(1968)	(1957)	(1955)	(1977)	(1981)	(1985)	(1961)	(1960)	(1960)	(1959)

06436000 BELLE FOURCHE RIVER NEAR FRUITDALE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003*	
ANNUAL TOTAL	3,837.80		3,250.8			
ANNUAL MEAN	10.5		8.91		[a]84.5	
HIGHEST ANNUAL MEAN					351	1999
LOWEST ANNUAL MEAN					3.00	1961
HIGHEST DAILY MEAN	29	Apr 19	130	Mar 17	11,100	May 10, 1995
LOWEST DAILY MEAN	1.0	May 31	2.4	May 23	[b]0.00	Sep 10, 1959
ANNUAL SEVEN-DAY MINIMUM	2.9	May 28	2.8	May 17	0.00	Jun 4, 1961
MAXIMUM PEAK FLOW			807	Mar 17	12,700	May 20, 1982
MAXIMUM PEAK STAGE			5.23	Mar 17	14.32	May 20, 1982
ANNUAL RUNOFF (AC-FT)	7,610		6,450		61,200	
10 PERCENT EXCEEDS	17		13		252	
50 PERCENT EXCEEDS	9.2		8.0		6.8	
90 PERCENT EXCEEDS	4.9		3.5		3.0	

* Regulated period only (1954-2003). See REMARKS.
a Median of annual mean discharges, 58 ft^3/s.
b No flow at times in 1959-62 and 1977.
e Estimated.



06436180 WHITEWOOD CREEK ABOVE WHITEWOOD, SD

LOCATION.--Lat 44° 26'32", long 103° 37'44", in $SE^1/_4$ $SE^1/_4$ $NE^1/_4$ $NE^1/_4$ sec.33, T.6 N., R.4 E., Lawrence County, Hydrologic Unit 10120202, on left bank 90 ft downstream from Crook Mountain Road and 1.1 mi south of Whitewood.

DRAINAGE AREA.--56.3 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,680 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow affected by transbasin diversions for industrial and municipal water supplies. Satellite data-collection platform at station. Additional water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1962, discharge, 8,460 ft^3/s, by contracted-opening measurement, 1.8 mi downstream from gage.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	e5.0	e11	e5.0	e18	e6.0	39	38	43	23	8.7	11
2	12	e5.0	e8.5	e6.0	e10	e5.5	42	36	42	22	8.7	9.9
3	12	e7.4	e7.5	e5.5	e9.5	e6.5	40	37	42	21	8.9	9.4
4	11	e7.8	e5.0	e6.0	e8.0	e5.8	36	38	40	24	9.1	9.3
5	12	e8.0	e4.3	e8.0	e5.0	e6.0	32	39	47	28	8.9	8.8
6	13	e11	e6.0	e12	e3.7	e6.2	31	37	51	23	8.7	8.8
7	11	e12	e7.0	e11	e4.2	e6.0	29	35	86	21	8.6	9.3
8	10	e13	e7.0	e7.0	e6.0	e4.8	27	37	117	19	11	9.4
9	11	14	e6.5	e6.0	e6.2	e4.0	27	42	102	18	9.4	8.4
10	10	14	e6.5	e3.6	e6.2	e6.0	28	68	87	18	10	35
11	11	13	e6.8	e4.0	e6.0	e8.5	29	69	77	17	9.6	14
12	13	13	e7.0	e4.3	e6.0	e10	29	86	68	17	9.4	10
13	12	13	e5.8	e4.4	e6.0	e24	31	96	69	15	8.7	12
14	11	12	e6.0	e5.4	e6.3	e50	31	85	63	14	8.3	9.1
15	11	12	e7.0	e4.3	e7.0	e60	31	93	57	14	9.9	7.8
16	11	14	e9.0	e4.6	e8.0	45	32	94	52	13	9.9	7.6
17	10	13	e8.5	e5.0	e11	48	30	80	52	12	10	10
18	11	12	e7.5	e6.0	e8.0	39	32	71	46	13	13	12
19	11	13	e5.0	e6.8	e7.5	29	32	67	43	13	13	9.4
20	12	13	e3.8	e7.2	e7.0	27	30	58	39	12	15	8.4
21	12	12	e3.2	e6.0	e6.0	27	28	52	37	11	11	8.5
22	12	14	e3.3	e5.0	e4.8	29	27	48	34	10	10	7.4
23	e10	e11	e3.3	e3.4	e2.7	36	27	45	32	9.6	9.1	7.3
24	12	e6.5	e3.1	e5.0	e2.8	33	29	42	39	9.9	10	6.7
25	12	e4.0	e2.3	e8.0	e6.5	28	27	39	41	9.4	9.6	6.8
26	12	e5.0	e2.2	e6.0	e7.5	28	26	63	31	12	8.0	7.3
27	11	e6.5	e2.8	e12	e8.0	27	25	62	29	16	8.2	7.2
28	11	e14	e3.5	e14	e7.5	24	26	51	30	13	8.2	7.0
29	14	e12	e5.8	e11	---	26	29	48	28	10	9.6	7.3
30	e7.0	e8.0	e5.0	e9.5	---	24	31	44	26	9.1	11	8.0
31	e6.0	---	e5.0	e9.2	---	28	---	42	---	8.6	13	---
TOTAL	346.0	318.2	175.2	211.2	195.4	707.3	913	1,742	1,550	475.6	306.5	293.1
MEAN	11.2	10.6	5.65	6.81	6.98	22.8	30.4	56.2	51.7	15.3	9.89	9.77
MAX	14	14	11	14	18	60	42	96	117	28	15	35
MIN	6.0	4.0	2.2	3.4	2.7	4.0	25	35	26	8.6	8.0	6.7
AC-FT	686	631	348	419	388	1,400	1,810	3,460	3,070	943	608	581

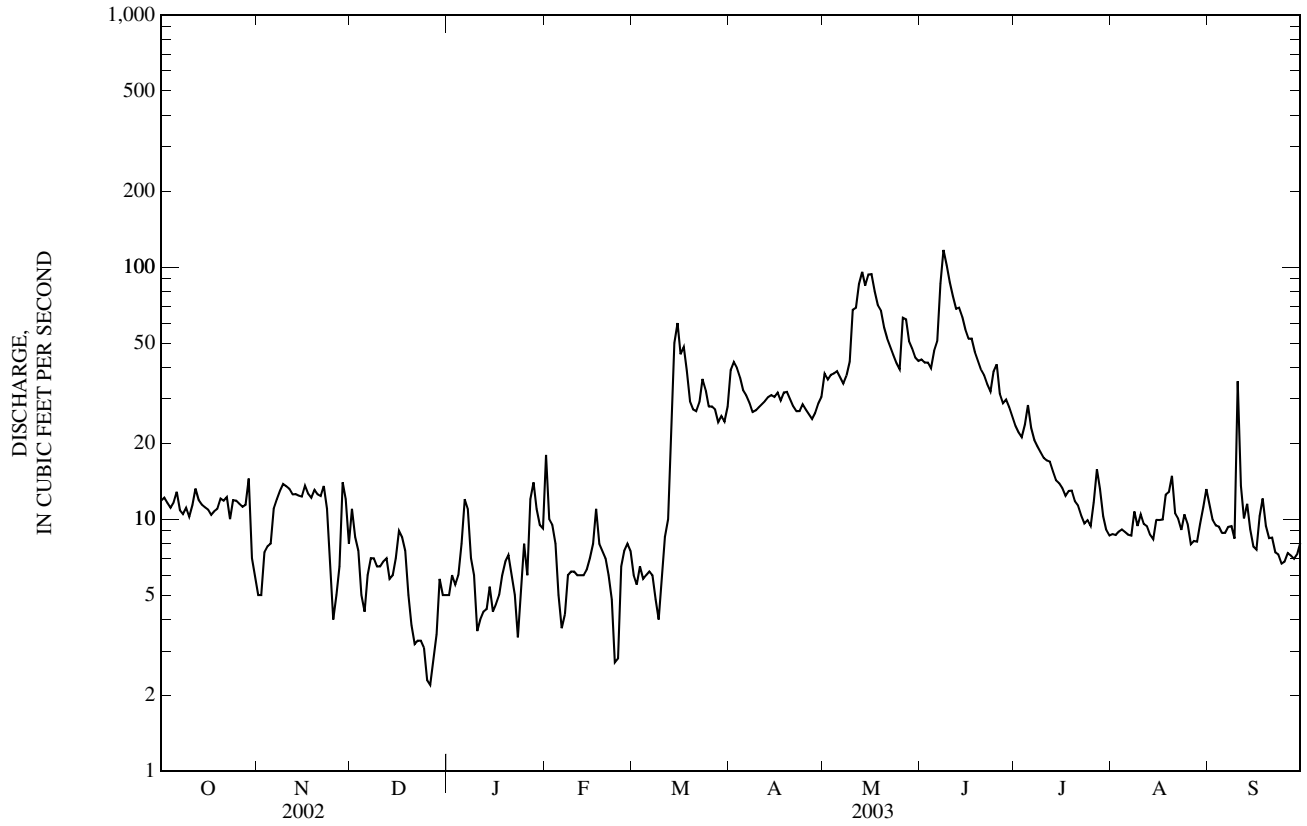
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

MEAN	20.2	17.8	12.4	11.8	13.9	24.3	56.7	82.9	47.3	22.6	17.1	14.4
MAX	89.8	52.2	23.1	18.4	28.7	49.5	140	384	101	48.7	45.3	22.7
(WY)	(1999)	(1999)	(1999)	(1996)	(1996)	(1994)	(1997)	(1995)	(1984)	(1997)	(1998)	(1998)
MIN	11.2	9.13	4.28	3.22	4.15	3.07	20.9	15.0	9.33	5.17	8.86	9.64
(WY)	(2003)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1985)	(2002)	(2002)	(2002)	(2001)

06436180 WHITEWOOD CREEK ABOVE WHITEWOOD, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	3,553.1		7,233.5			
ANNUAL MEAN	9.73		19.8		27.8	
HIGHEST ANNUAL MEAN					59.5	1995
LOWEST ANNUAL MEAN					9.59	2002
HIGHEST DAILY MEAN	80	Sep 18	117	Jun 8	2,370	May 9, 1995
LOWEST DAILY MEAN	2.2	Dec 26	2.2	Dec 26	2.2	Dec 26, 2002
ANNUAL SEVEN-DAY MINIMUM	2.4	Mar 17	2.9	Dec 21	2.4	Mar 17, 2002
MAXIMUM PEAK FLOW			[a]210	May 15	[b]3,800	May 8, 1995
MAXIMUM PEAK STAGE			[c]4.68	Mar 13	9.06	May 8, 1995
ANNUAL RUNOFF (AC-FT)	7,050		14,350		20,110	
10 PERCENT EXCEEDS	18		44		56	
50 PERCENT EXCEEDS	7.4		11		16	
90 PERCENT EXCEEDS	3.0		5.0		9.1	

a Gage height, 2.70 ft.
b On basis of slope-area measurement of peak flow.
c Backwater from ice.
e Estimated.



06436180 WHITEWOOD CREEK ABOVE WHITEWOOD, SD—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1983 to current year.

REMARKS.--On Sept. 8, 2003, a field blank sample was collected at this site for quality-control purposes. The analytical results for the field duplicate sample are noted in the water-quality results.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Specif. conductance, wat unf uS/cm 25 deg C (00095)	pH, water, unfltrd field, std units (00400)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
DEC													
16...	1045	9.2	1,280	7.5	8.0	0.0	659	12.0	95	500	E172	105	57.9
MAY													
06...	0920	37	686	8.8	9.0	7.0	668	16.4	155	270	130	62.6	28.7
JUN													
25...	0845	41	576	8.4	12.0	9.5	676	11.5	101	260	153	62.3	24.6
SEP													
08...	1015	7.3	1,190	8.8	25.5	17.5	667	12.4	130	440	126	107	41.4
[a]08...	1016	7.4	1,190	8.8	25.5	17.4	667	12.4	130	460	124	110	43.7

Date	Sodium, water, fltrd, mg/L (00930)	Sodium adsorption ratio (00931)	Sulfate water, fltrd, mg/L (00945)	Silica, water, fltrd, mg/L (00955)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water unfltrd ug/L (01002)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Cadmium water, unfltrd ug/L (01027)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, unfltrd recoverable, ug/L (01034)
DEC													
16...	81.4	2	409	8.10	6	0.68	21	21.8	51	<0.06	0.07	0.08	<0.8
MAY													
06...	33.7	0.9	180	7.86	17	0.47	15	11.3	54	<0.06	0.04	E.02	<0.8
JUN													
25...	22.8	0.6	114	12.2	16	0.43	27	12.3	62	<0.06	0.13	E.02	1.3
SEP													
08...	95.0	2	406	0.40	5	0.49	38	32.9	57	<0.06	0.05	0.05	<0.8
[a]08...	98.4	2	403	0.40	4	0.49	39	32.4	51	<0.06	0.04	0.04	<0.8

Date	Chromium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, unfltrd recoverable, ug/L (01042)	Copper, water, fltrd, ug/L (01040)	Cyanide water, fltrd, mg/L (00723)	Iron, water, unfltrd recoverable, ug/L (01045)	Iron, water, fltrd, ug/L (01046)	Lead, water, unfltrd recoverable, ug/L (01051)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Manganese, water, unfltrd recoverable, ug/L (01055)	Manganese, water, fltrd, ug/L (01056)	Mercury water, unfltrd recoverable, ug/L (71900)
DEC													
16...	<0.8	4.15	3.9	2.9	<0.01	50	<10	0.10	E.08	24.7	9	9.3	<0.02
MAY													
06...	<0.8	1.59	2.8	2.6	<0.01	410	E9	0.57	<0.08	12.2	27	13.6	<0.02
JUN													
25...	<0.8	0.972	7.0	1.7	<0.01	2,720	E8	5.20	<0.08	18.2	127	17.5	0.06
SEP													
08...	E.7	3.51	5.9	6.2	<0.01	10	E4	0.18	0.10	13.2	M	0.4	<0.02
[a]08...	<0.8	3.35	5.8	6.1	<0.01	10	<8	0.10	0.10	11.9	M	0.3	<0.02

06436180 WHITEWOOD CREEK ABOVE WHITEWOOD, SD—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Mercury water, fltrd, ug/L (71890)	Molyb-denum, water, fltrd, ug/L (01060)	Nickel, water, unfltrd recover -able, ug/L (01067)	Nickel, water, fltrd, ug/L (01065)	Selen-ium, water, unfltrd ug/L (01147)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, unfltrd recover -able, ug/L (01077)	Silver, water, fltrd, ug/L (01075)	Stront-ium, water, fltrd, ug/L (01080)	Vanad-ium, water, fltrd, ug/L (01085)	Zinc, water, unfltrd recover -able, ug/L (01092)	Zinc, water, fltrd, ug/L (01090)	Uranium natural water, fltrd, ug/L (22703)
DEC													
16...	<0.02	13.5	8.18	5.87	1.3	1.4	<0.16	<0.2	448	0.5	7	6	2.65
MAY													
06...	<0.02	3.8	3.07	2.81	0.9	1.2	<0.16	<0.2	288	0.6	5	2	1.62
JUN													
25...	<0.02	2.5	5.67	3.17	1.0	0.9	E.12	<0.2	247	0.7	27	2	2.05
SEP													
08...	<0.02	4.5	4.79	3.78	1.1	1.3	<0.16	<0.2	394	0.7	7	5	2.48
[a]08...	<0.02	4.5	4.81	3.45	1.3	1.1	<0.16	<0.2	390	0.7	5	5	2.45

Date	Sus-pended sedi-ment concen-tration mg/L (80154)
DEC	
16...	2
MAY	
06...	7
JUN	
25...	79
SEP	
08...	3
[a]08...	--

< Less than.
a Field blank sample collected for quality-control purposes.
E Estimated value.
M Presence verified, not quantified

06436190 WHITEWOOD CREEK NEAR WHITEWOOD, SD

LOCATION.--Lat 44° 32'30", long 103° 34'16", in $SE^1/_4$ $NW^1/_4$ $SE^1/_4$ $NE^1/_4$ sec.25, T.7 N., R.4 E., Lawrence County, Hydrologic Unit 10120202, on right bank 30 ft downstream from county highway bridge and 6.9 mi northeast of Whitewood.

DRAINAGE AREA.--77.4 mi^2, approximately.

PERIOD OF RECORD.--October 1981 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,175 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Small diversions upstream for irrigation of 256 acres. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	5.8	12	6.7	14	7.9	35	38	44	32	6.5	4.7
2	10	6.0	11	7.3	22	7.8	40	36	45	31	6.4	4.1
3	11	8.6	11	7.0	12	7.8	39	36	44	30	6.2	3.6
4	10	8.6	6.2	7.8	11	7.0	37	38	42	31	5.6	3.5
5	10	9.6	5.3	8.2	9.4	7.5	33	39	46	39	5.4	2.9
6	11	9.8	7.0	12	6.5	7.2	32	38	54	35	5.3	2.7
7	9.7	11	7.9	9.5	5.8	7.6	29	35	82	31	5.2	2.7
8	9.3	12	6.7	9.0	7.1	6.5	26	35	137	30	6.1	3.0
9	9.1	12	6.8	6.5	8.4	5.8	25	40	115	29	6.3	3.0
10	8.8	12	7.7	3.8	8.3	7.9	27	55	99	27	6.2	21
11	8.9	12	8.0	4.0	8.1	9.5	27	67	86	24	5.7	16
12	11	11	7.9	5.0	7.5	11	29	81	73	24	5.3	8.3
13	11	12	7.0	5.6	7.6	23	30	100	77	20	4.2	10
14	9.8	11	7.8	6.5	7.9	59	31	104	85	17	3.7	8.8
15	9.5	10	8.7	5.5	7.7	64	31	108	71	20	4.1	6.9
16	9.6	11	9.5	6.0	8.3	52	33	132	65	17	4.3	6.5
17	8.8	10	9.3	6.0	13	49	32	105	74	14	4.1	7.8
18	8.9	9.7	8.6	5.8	11	46	33	87	63	14	5.7	13
19	9.0	9.5	6.1	7.2	9.5	30	35	79	53	15	5.6	9.0
20	8.8	9.8	4.1	7.8	9.5	25	33	66	46	12	6.4	7.5
21	8.9	9.0	4.0	6.7	9.5	24	31	58	46	10	4.8	7.4
22	9.8	9.6	4.0	5.3	6.7	26	29	56	45	9.4	4.1	7.4
23	10	10	4.1	5.0	5.2	32	29	51	41	7.2	3.1	6.6
24	10	10	4.1	6.2	5.2	33	31	45	51	7.2	2.8	6.0
25	10	4.6	3.6	7.3	5.1	27	30	41	65	6.8	3.0	6.1
26	10	5.2	3.7	6.8	6.5	26	27	53	45	8.8	2.4	6.1
27	9.7	6.6	4.1	8.5	8.0	26	25	76	38	16	1.9	6.2
28	9.8	14	5.1	14	8.3	22	26	55	38	14	2.0	6.4
29	12	14	6.5	11	---	19	31	49	39	10	3.0	6.5
30	9.0	8.8	6.4	9.5	---	21	31	45	34	8.1	4.4	7.6
31	7.9	---	5.8	9.5	---	25	---	44	---	7.3	5.4	---
TOTAL	301.3	293.2	210.0	227.0	249.1	722.5	927	1,892	1,843	596.8	145.2	211.3
MEAN	9.72	9.77	6.77	7.32	8.90	23.3	30.9	61.0	61.4	19.3	4.68	7.04
MAX	12	14	12	14	22	64	40	132	137	39	6.5	21
MIN	7.9	4.6	3.6	3.8	5.1	5.8	25	35	34	6.8	1.9	2.7
AC-FT	598	582	417	450	494	1,430	1,840	3,750	3,660	1,180	288	419

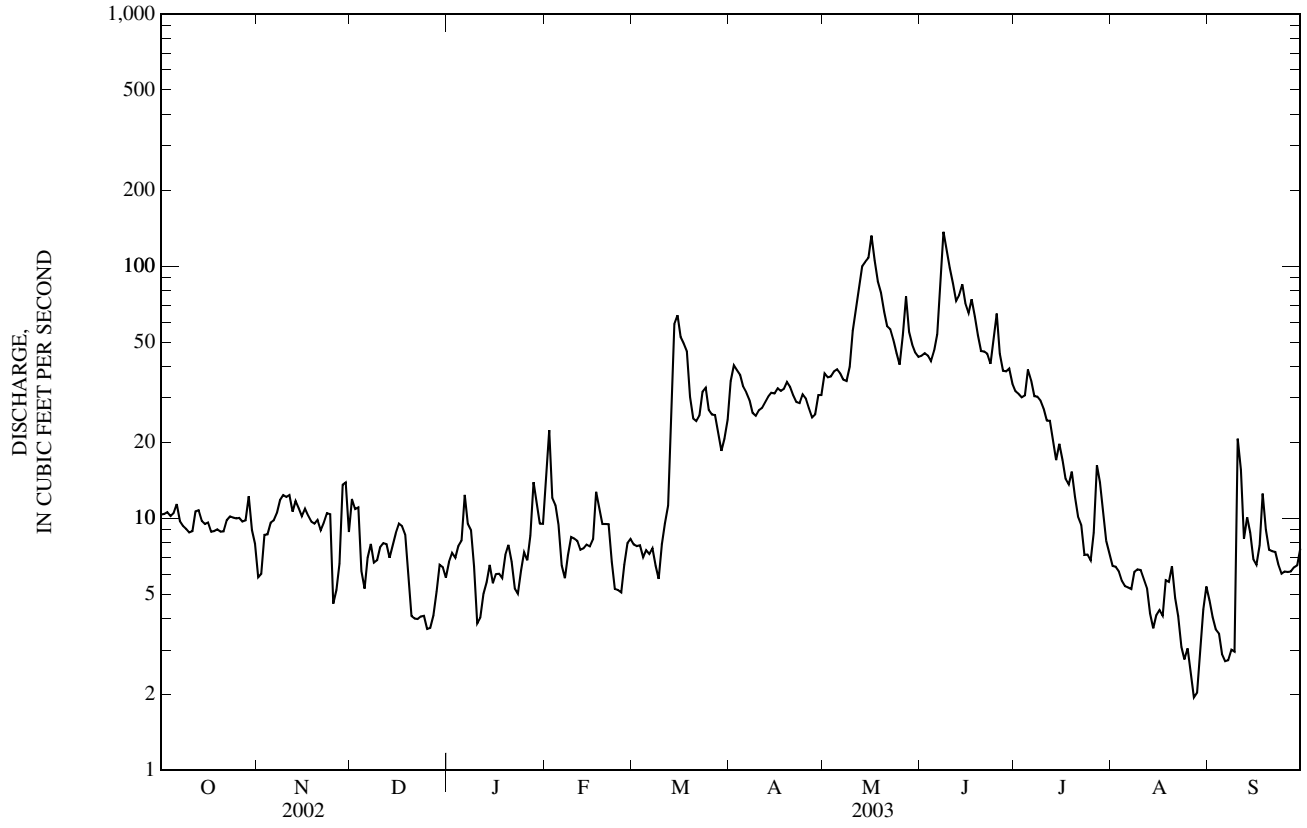
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2003, BY WATER YEAR (WY)

MEAN	22.5	19.0	13.6	13.5	15.9	26.1	61.3	96.5	51.1	21.7	15.2	13.6
MAX	104	56.2	27.2	23.9	26.5	53.2	165	404	122	40.5	42.0	24.5
(WY)	(1999)	(1999)	(1999)	(1983)	(1996)	(1997)	(1997)	(1995)	(1999)	(1997)	(1998)	(1986)
MIN	9.03	9.77	6.57	5.22	6.41	8.34	21.9	16.5	6.48	1.74	4.68	6.70
(WY)	(1993)	(2003)	(1991)	(2002)	(2002)	(2002)	(1985)	(2002)	(2002)	(2002)	(2003)	(1990)

06436190 WHITEWOOD CREEK NEAR WHITEWOOD, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1982 - 2003	
ANNUAL TOTAL	3,523.38		7,618.4			
ANNUAL MEAN	9.65		20.9		[a]30.9	
HIGHEST ANNUAL MEAN					62.8	1995
LOWEST ANNUAL MEAN					9.88	2002
HIGHEST DAILY MEAN	96	Sep 19	137	Jun 8	2,060	May 9, 1995
LOWEST DAILY MEAN	0.39	Aug 6	1.9	Aug 27	0.39	Aug 6, 2002
ANNUAL SEVEN-DAY MINIMUM	0.42	Aug 1	2.6	Aug 23	0.42	Aug 1, 2002
MAXIMUM PEAK FLOW			240	May 15	3,930	May 8, 1995
MAXIMUM PEAK STAGE			2.31	May 15	6.01	May 8, 1995
ANNUAL RUNOFF (AC-FT)	6,990		15,110		22,380	
10 PERCENT EXCEEDS	17		50		62	
50 PERCENT EXCEEDS	7.5		9.8		18	
90 PERCENT EXCEEDS	3.3		5.0		8.0	

a Median of annual mean discharges, 30 ft^3/s.



06436198 WHITEWOOD CREEK ABOVE VALE, SD

LOCATION.--Lat 44° 37'04", long 103° 28'52", in $SE^1/_4$ $NW^1/_4$ $NE^1/_4$ $NW^1/_4$ sec.35, T.8 N., R.5 E., Butte County, Hydrologic Unit 10120202, on right bank at point where South Canal crosses creek, 3.2 mi above mouth, and 3.7 mi west of Vale.

DRAINAGE AREA.--102 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,840 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions upstream from station for irrigation of about 800 acres. Additional water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurement and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	2.7	14	9.7	e22	e9.5	36	36	34	17	1.1	1.3
2	11	2.1	16	9.3	e31	e9.5	40	35	35	15	1.5	0.66
3	13	3.9	15	12	e20	e9.5	39	34	33	14	1.3	0.38
4	13	5.8	9.2	11	e16	e9.0	37	37	32	14	1.2	0.57
5	14	6.2	2.1	11	e11	e9.8	32	38	33	20	e1.0	0.84
6	16	8.2	6.7	13	e12	e10	28	36	47	26	0.86	0.67
7	14	9.1	11	11	e9.0	e9.5	26	34	60	19	0.58	0.75
8	13	12	7.6	9.6	e12	e9.0	23	32	151	17	0.15	0.68
9	14	14	7.8	e5.8	e14	e7.0	21	40	127	16	0.55	0.96
10	15	15	10	e4.8	e14	e8.0	22	53	108	14	1.2	8.6
11	13	16	12	e6.7	e13	e27	22	84	91	14	0.80	18
12	16	14	12	e8.0	e12	e20	23	103	72	13	0.55	8.8
13	16	16	9.6	e8.0	e12	81	25	115	66	12	0.25	9.4
14	14	17	10	e7.3	e13	177	27	111	66	11	0.06	8.9
15	14	16	12	e7.3	e13	107	27	98	51	10	0.45	7.3
16	14	17	12	e8.0	e12	75	29	153	44	11	0.56	6.5
17	13	16	10	e9.0	e18	74	28	110	47	7.0	0.53	8.2
18	11	15	9.5	e9.8	e15	119	28	94	37	7.4	0.85	13
19	11	14	e6.8	e12	e12	78	34	85	32	8.4	1.4	10
20	12	15	e6.5	e10	e12	47	31	72	29	6.4	1.8	8.5
21	11	14	7.9	e9.0	e12	41	25	58	29	5.8	1.5	7.0
22	13	14	7.4	e8.0	e8.3	37	23	51	25	5.2	1.0	7.3
23	13	16	7.5	e7.0	e6.5	41	22	45	23	4.3	0.66	6.5
24	13	17	7.2	e8.5	e6.0	49	25	39	29	3.4	0.28	5.1
25	13	4.6	7.5	e10	e6.0	38	24	34	42	2.8	0.12	5.4
26	12	5.5	6.5	e9.0	e7.2	32	21	30	26	3.1	0.13	4.8
27	12	7.3	6.8	e8.5	e9.5	33	20	85	21	5.2	0.03	5.8
28	11	16	8.9	e24	e9.5	29	20	49	20	5.4	0.00	5.5
29	14	22	10	e21	---	28	28	42	23	3.8	0.00	5.5
30	11	15	9.5	e18	---	27	28	37	19	2.2	0.19	6.2
31	6.1	---	7.3	e17	---	29	---	34	---	1.1	1.7	---
TOTAL	395.6	366.4	286.3	323.3	358.0	1,279.8	814	1,904	1,452	314.5	22.30	173.11
MEAN	12.8	12.2	9.24	10.4	12.8	41.3	27.1	61.4	48.4	10.1	0.72	5.77
MAX	16	22	16	24	31	177	40	153	151	26	1.8	18
MIN	6.1	2.1	2.1	4.8	6.0	7.0	20	30	19	1.1	0.00	0.38
AC-FT	785	727	568	641	710	2,540	1,610	3,780	2,880	624	44	343

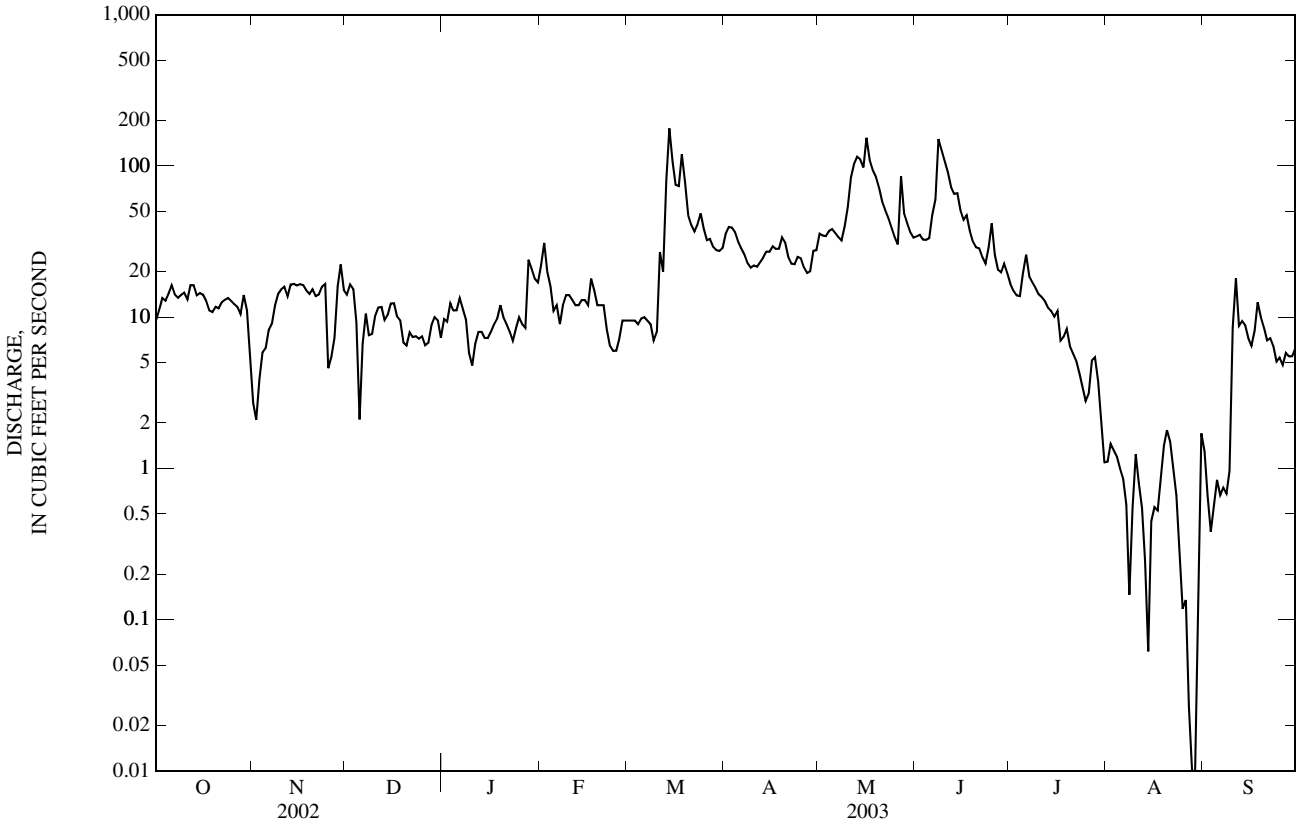
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	21.9	17.8	13.4	13.6	19.2	30.1	61.9	91.1	58.1	20.9	13.5	11.9
MAX	126	55.7	27.1	44.3	60.1	59.7	173	435	163	47.5	52.1	38.9
(WY)	(1999)	(1999)	(1999)	(1997)	(1997)	(1997)	(1997)	(1995)	(1999)	(1997)	(1998)	(1986)
MIN	8.46	8.17	5.05	4.90	6.27	6.42	20.2	15.9	5.35	0.18	0.72	4.09
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1985)	(2002)	(2002)	(2003)	(1992)

06436198 WHITEWOOD CREEK ABOVE VALE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	3,240.25		7,689.31			
ANNUAL MEAN	8.88		21.1		[a]31.1	
HIGHEST ANNUAL MEAN					64.1	1995
LOWEST ANNUAL MEAN					7.82	2002
HIGHEST DAILY MEAN	78	Sep 19	177	Mar 14	2,920	May 9, 1995
LOWEST DAILY MEAN	0.00	Jul 11	0.00	Aug 28, 29	[b]0.00	Jul 21, 1985
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 11	0.11	Aug 24	0.00	Jul 11, 2002
MAXIMUM PEAK FLOW			441	Mar 14	4,250	May 8, 1995
MAXIMUM PEAK STAGE			2.49	Mar 14	5.72	May 8, 1995
ANNUAL RUNOFF (AC-FT)	6,430		15,250		22,550	
10 PERCENT EXCEEDS	17		44		66	
50 PERCENT EXCEEDS	7.2		13		17	
90 PERCENT EXCEEDS	0.55		1.4		6.0	

a Median of annual mean discharges, 28 ft^3/s.
b Also July 22 and Aug. 19, 1985, July 11 to Aug. 8, 2002.
e Estimated.



06436198 WHITEWOOD CREEK ABOVE VALE—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1983 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Specif. conductance, wat unf uS/cm 25 deg C (00095)	pH, water, unfltrd field, std units (00400)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
DEC													
17...	0830	10	1,440	7.6	1.0	0.5	670	11.6	92	680	E182	157	69.6
MAY													
07...	0930	36	913	7.8	12.0	10.5	686	13.7	137	400	151	92.5	41.8
JUN													
25...	1100	51	756	8.2	14.0	12.5	697	10.6	100	350	172	87.2	32.3
SEP													
09...	0950	1.2	1,440	8.0	20.0	19.5	690	12.3	135	650	153	138	74.8

Date	Sodium, water, fltrd, mg/L (00930)	Sodium adsorption ratio (00931)	Sulfate water, fltrd, mg/L (00945)	Silica, water, fltrd, mg/L (00955)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water unfltrd ug/L (01002)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Cadmium water, unfltrd ug/L (01027)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, unfltrd recoverable, ug/L (01034)
DEC													
17...	73.4	1	540	6.15	<2	0.67	42	28.5	29	<0.06	0.04	0.04	<0.8
MAY													
07...	45.3	1	299	4.11	4	0.54	43	29.5	34	<0.06	0.04	<0.04	<0.8
JUN													
25...	32.6	0.8	187	10.8	6	0.42	106	36.8	49	<0.06	0.18	E.02	1.5
SEP													
09...	75.4	1	587	7.74	E1	E.24	93	81.6	31	<0.06	E.02	E.03	<0.8

Date	Chromium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, unfltrd recoverable, ug/L (01042)	Copper, water, fltrd, ug/L (01040)	Cyanide water, fltrd, mg/L (00723)	Iron, water, unfltrd recoverable, ug/L (01045)	Iron, water, fltrd, ug/L (01046)	Lead, water, unfltrd recoverable, ug/L (01051)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Manganese, water, unfltrd recoverable, ug/L (01055)	Manganese, water, fltrd, ug/L (01056)	Mercury water, unfltrd recoverable, ug/L (71900)
DEC													
17...	<0.8	3.00	4.3	2.9	<0.01	370	47	0.10	E.05	23.8	98	99.2	<0.02
MAY													
07...	<0.8	1.73	3.0	3.1	<0.01	580	39	0.43	<0.08	17.6	83	62.6	E.01
JUN													
25...	2.0	1.20	9.3	1.9	<0.01	4,150	10	6.50	<0.08	13.0	231	52.5	0.09
SEP													
09...	<0.8	0.745	5.5	6.0	<0.01	450	78	E.06	<0.08	36.9	19	17.2	<0.02

06436198 WHITEWOOD CREEK ABOVE VALE—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Mercury water, fltrd, ug/L (71890)	Molyb-denum, water, fltrd, ug/L (01060)	Nickel, water, unfltrd recover-able, ug/L (01067)	Nickel, water, fltrd, ug/L (01065)	Selen-ium, water, unfltrd ug/L (01147)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, unfltrd recover-able, ug/L (01077)	Silver, water, fltrd, ug/L (01075)	Stront-ium, water, fltrd, ug/L (01080)	Vanad-ium, water, fltrd, ug/L (01085)	Zinc, water, unfltrd recover-able, ug/L (01092)	Zinc, water, fltrd, ug/L (01090)	Uranium natural water, fltrd, ug/L (22703)
DEC													
17...	<0.02	6.6	9.81	6.76	2.2	2.4	<0.16	<0.2	914	0.3	4	3	3.30
MAY													
07...	<0.02	3.3	3.83	3.12	1.5	1.6	<0.16	<0.2	530	1.1	4	2	2.12
JUN													
25...	<0.02	3.5	7.16	3.77	1.3	1.1	E.14	<0.2	416	0.7	26	2	2.12
SEP													
09...	<0.02	4.8	5.22	3.51	1.0	1.0	<0.16	<0.2	920	0.5	3	2	2.90

Date	Sus-pended sedi-ment concen-tration mg/L (80154)
DEC	
17...	10
MAY	
07...	30
JUN	
25...	126
SEP	
09...	5

< Less than.
E Estimated value.

06436760 HORSE CREEK ABOVE VALE, SD

LOCATION.--Lat 44° 39'08", long 103° 21'59", in $SW^1/_4$ $NW^1/_4$ $SW^1/_4$ (revised) sec.14, T.8 N., R.6 E., Butte County, Hydrologic Unit 10120202, on left bank 2.6 mi upstream from Dry Creek, 5.5 mi upstream from mouth, 3.0 mi northeast of Vale, and 4.5 mi southeast of Newell.

DRAINAGE AREA.--464 mi^2.

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,710 ft above NGVD of 1929, from topographic map. April 1962 to September 1980, water-stage recorder, at site 2.7 mi downstream, at different datum.

REMARKS.--Records good except those for May 30 to June 11, which are fair, and those for estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation upstream from station and by return flow from Belle Fourche Irrigation Project. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section. Additional water-quality samples collected as part of a Total Maximum Daily Load (TMDL) sampling program to be published in a separate report.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e7.0	2.8	2.2	2.6	3.6	2.9	e2.3	4.1	6.6	29	39	47
2	e5.5	2.9	2.4	2.6	6.3	2.8	e2.1	4.5	6.9	24	45	45
3	e5.0	2.9	2.4	2.2	6.9	2.6	e1.9	3.9	8.5	37	37	39
4	4.7	2.9	2.2	2.5	5.2	2.7	e1.7	3.7	7.9	31	36	31
5	5.0	2.9	2.1	2.6	3.3	3.0	e1.6	2.9	8.2	35	37	30
6	5.2	2.8	2.2	2.7	3.3	3.0	e1.5	2.4	9.2	35	41	33
7	4.8	2.7	2.2	2.8	3.4	3.5	e1.4	2.4	9.6	36	31	34
8	4.8	2.8	2.2	2.7	2.6	3.3	e1.4	3.6	8.9	34	31	32
9	5.2	2.7	2.2	2.4	3.1	3.1	e1.3	4.2	6.4	37	32	33
10	5.9	2.8	2.2	3.4	2.5	2.8	e1.3	4.6	5.6	40	29	41
11	6.8	2.8	2.1	3.0	2.3	2.8	e1.3	4.7	5.6	43	31	58
12	6.8	2.7	2.1	2.4	2.4	3.4	e1.3	e4.6	11	40	32	48
13	5.8	2.7	2.0	2.0	2.4	4.7	e1.3	e4.6	8.5	39	28	60
14	4.9	2.8	2.0	2.1	2.3	6.3	1.3	e4.6	7.2	46	27	47
15	3.9	2.7	2.1	2.0	2.5	8.8	1.4	e5.1	8.4	39	30	31
16	3.8	2.6	2.2	2.0	2.3	9.9	1.4	e5.6	9.0	34	30	29
17	3.7	2.5	2.3	e1.9	4.9	12	1.4	e5.8	9.5	40	34	28
18	3.7	2.4	2.4	e2.0	6.2	27	1.8	e6.1	15	46	41	29
19	3.6	2.7	2.2	2.3	6.3	37	2.1	e6.6	21	38	43	23
20	3.6	2.4	2.0	2.8	6.8	35	2.0	e7.2	15	34	47	25
21	3.6	2.2	e1.9	2.4	5.2	27	1.9	e7.6	17	46	46	24
22	3.4	2.2	e1.9	e1.6	3.7	17	1.7	e7.9	18	48	45	23
23	3.4	2.2	e1.8	e1.8	e2.2	11	1.6	e8.2	26	49	46	16
24	3.2	2.3	e1.7	e2.0	e2.0	8.1	1.8	e8.9	32	48	48	13
25	3.2	2.1	e1.8	e2.1	e2.2	5.6	1.7	e9.6	47	42	40	e11
26	3.5	2.0	e1.8	e2.1	e2.3	4.8	1.6	e9.6	39	47	42	e8.9
27	3.1	2.0	2.1	e2.6	e2.3	4.2	1.5	e9.6	30	48	40	e7.6
28	2.8	2.2	2.2	2.8	e2.7	3.9	1.6	e10	29	44	39	e6.4
29	3.4	2.3	2.5	2.9	---	3.2	2.1	e11	28	41	54	e5.3
30	3.1	2.1	2.8	2.7	---	3.0	2.5	10	25	38	64	e4.4
31	2.8	---	2.9	2.9	---	e2.7	---	16	---	35	55	---
TOTAL	135.2	76.1	67.1	74.9	101.2	267.1	49.8	199.6	479.0	1,223	1,220	862.6
MEAN	4.36	2.54	2.16	2.42	3.61	8.62	1.66	6.44	16.0	39.5	39.4	28.8
MAX	7.0	2.9	2.9	3.4	6.9	37	2.5	16	47	49	64	60
MIN	2.8	2.0	1.7	1.6	2.0	2.6	1.3	2.4	5.6	24	27	4.4
AC-FT	268	151	133	149	201	530	99	396	950	2,430	2,420	1,710

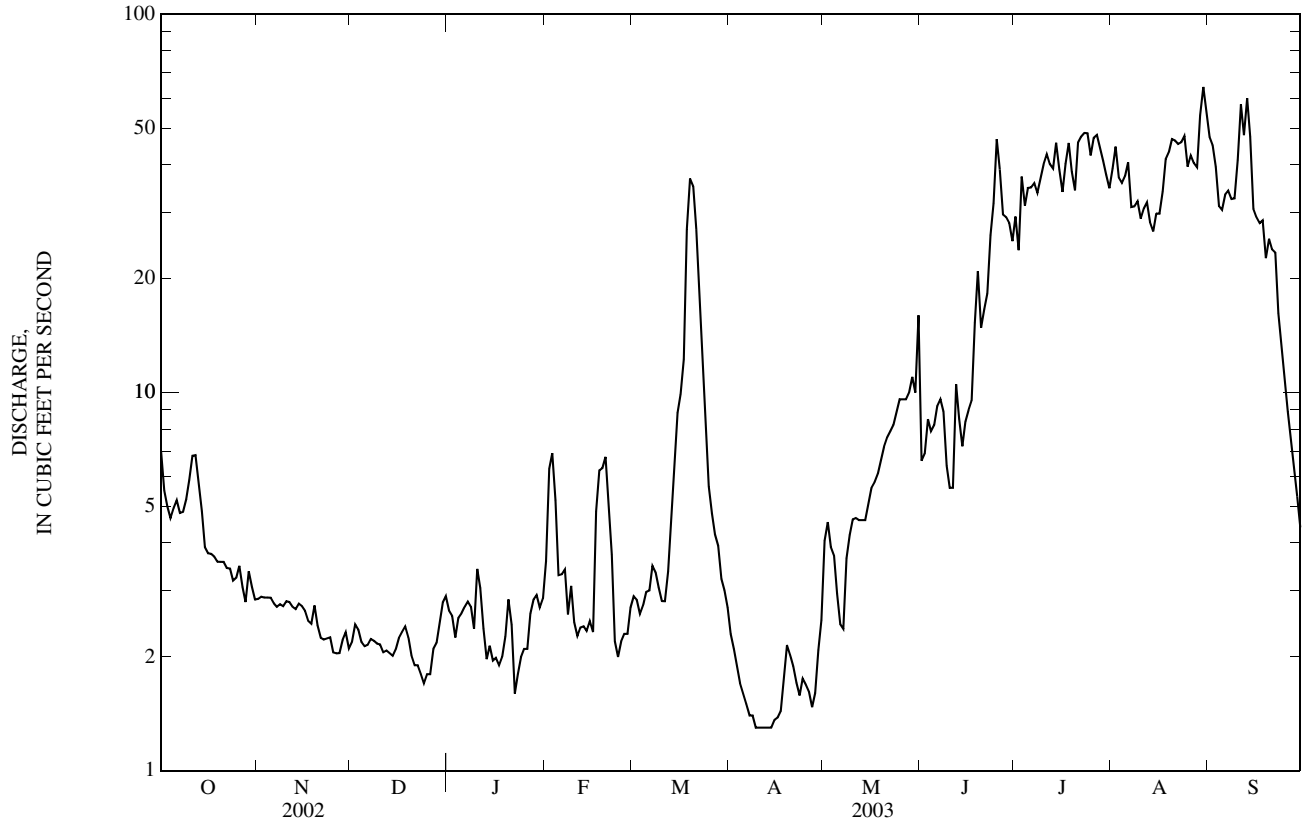
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2003, BY WATER YEAR (WY)

MEAN	18.3	5.08	3.05	4.08	40.2	68.8	46.4	151	74.5	71.0	48.5	50.2
MAX	169	26.9	8.50	31.7	424	251	229	901	272	464	82.6	311
(WY)	(1983)	(1999)	(1983)	(1983)	(1997)	(1986)	(1987)	(1982)	(1998)	(1993)	(1987)	(1986)
MIN	1.46	1.82	1.15	0.96	1.24	1.30	0.75	6.44	11.3	35.8	25.7	11.3
(WY)	(1992)	(1991)	(1993)	(1992)	(1992)	(1992)	(1992)	(2003)	(1991)	(1991)	(1992)	(1992)

06436760 HORSE CREEK ABOVE VALE, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1981 - 2003	
ANNUAL TOTAL	5,577.21		4,755.6			
ANNUAL MEAN	15.3		13.0		[a]48.6	
HIGHEST ANNUAL MEAN					131	1996
LOWEST ANNUAL MEAN					10.4	1992
HIGHEST DAILY MEAN	94	Sep 19	64	Aug 30	14,000	May 21, 1982
LOWEST DAILY MEAN	0.91	Jan 3	1.3	Apr 9	0.07	Nov 7, 1985
ANNUAL SEVEN-DAY MINIMUM	1.3	Jan 15	1.3	Apr 8	0.28	Dec 25, 1990
MAXIMUM PEAK FLOW			79	Sep 13	17,700	May 21, 1982
MAXIMUM PEAK STAGE			2.81	Sep 13	24.80	May 21, 1982
ANNUAL RUNOFF (AC-FT)	11,060		9,430		35,190	
10 PERCENT EXCEEDS	43		40		70	
50 PERCENT EXCEEDS	3.5		4.2		9.1	
90 PERCENT EXCEEDS	1.8		2.0		1.8	

a Median of annual mean discharges, 39 ft^3/s.
e Estimated.



06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD

LOCATION.--Lat 44° 30'47", long 103° 08'11", in $SE^1/_4$ $NW^1/_4$ sec.3, T.6 N., R.8 E., Meade County, Hydrologic Unit 10120202, on right bank near upstream end of bridge on State Highway 34, 0.5 mi upstream from Bear Butte Creek, and 20 mi northeast of Sturgis.

DRAINAGE AREA.--5,870 mi^2, approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,526.13 ft above NGVD of 1929. Prior to Oct. 31, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Keyhole Dam, usable capacity, 191,600 acre-ft, 246 mi upstream since Oct. 25, 1952. At a point 75 mi upstream, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal (see station 06434505), with other small diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres upstream from station. Maximum discharge prior to Sept. 30, 1953, 17,900 ft^3/s, May 24, 1946, gage height, 13.86 ft; no flow for many days in 1945 and 1950. Satellite data-collection platform at station. Water-quality samples were collected July-September and will be compiled in a separate report. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	e43	e35	e30	e32	e25	50	68	114	185	181	284
2	63	e47	e34	e29	e32	e26	54	73	117	179	194	266
3	60	e50	e33	e29	e31	e26	61	75	123	164	195	268
4	63	e53	e28	e30	e29	e27	64	74	121	149	176	214
5	64	68	e29	e31	e28	e27	62	74	129	144	162	206
6	64	59	e29	e32	e27	e27	60	68	122	181	138	183
7	61	50	e30	e32	e26	e27	57	66	121	152	133	161
8	60	51	e30	e32	e26	e27	55	66	142	138	139	155
9	56	53	e31	e31	e26	e26	51	63	200	127	151	154
10	53	49	e31	e28	e26	e24	47	67	187	128	161	174
11	52	47	e31	e29	e26	e25	46	68	180	138	190	264
12	50	46	e32	e30	e26	e27	44	89	157	146	189	322
13	48	45	e32	e31	e26	216	45	93	139	157	181	275
14	48	44	e32	e32	e26	251	45	101	152	165	163	250
15	48	e43	e32	e31	e26	375	44	101	149	183	159	214
16	49	e43	e33	e28	e27	411	46	95	128	159	171	177
17	49	e42	e33	e26	e27	297	47	115	124	144	157	163
18	48	e42	e33	e26	e27	666	53	104	128	161	176	162
19	47	e41	e33	e27	e28	1,220	57	98	116	168	196	164
20	47	41	e32	e28	e28	493	57	89	117	161	212	151
21	46	40	e31	e26	e27	264	54	83	154	163	220	137
22	48	39	e30	e21	e26	176	48	75	156	169	208	115
23	52	38	e30	e22	e25	130	44	68	148	181	184	100
24	59	36	e28	e25	e24	106	45	64	162	182	202	78
25	57	e30	e27	e25	e23	94	46	56	196	201	202	75
26	53	e31	e26	e27	e23	80	45	51	239	174	201	66
27	53	e34	e26	e28	e23	72	43	50	208	172	212	56
28	53	e38	e27	e29	e24	67	42	73	186	211	196	50
29	e53	e36	e28	e30	---	61	47	81	171	226	180	47
30	e50	e35	e29	e31	---	55	53	63	181	203	204	44
31	e45	---	e30	e32	---	52	---	115	---	195	252	---
TOTAL	1,669	1,314	945	888	745	5,400	1,512	2,426	4,567	5,206	5,685	4,975
MEAN	53.8	43.8	30.5	28.6	26.6	174	50.4	78.3	152	168	183	166
MAX	70	68	35	32	32	1,220	64	115	239	226	252	322
MIN	45	30	26	21	23	24	42	50	114	127	133	44
AC-FT	3,310	2,610	1,870	1,760	1,480	10,710	3,000	4,810	9,060	10,330	11,280	9,870

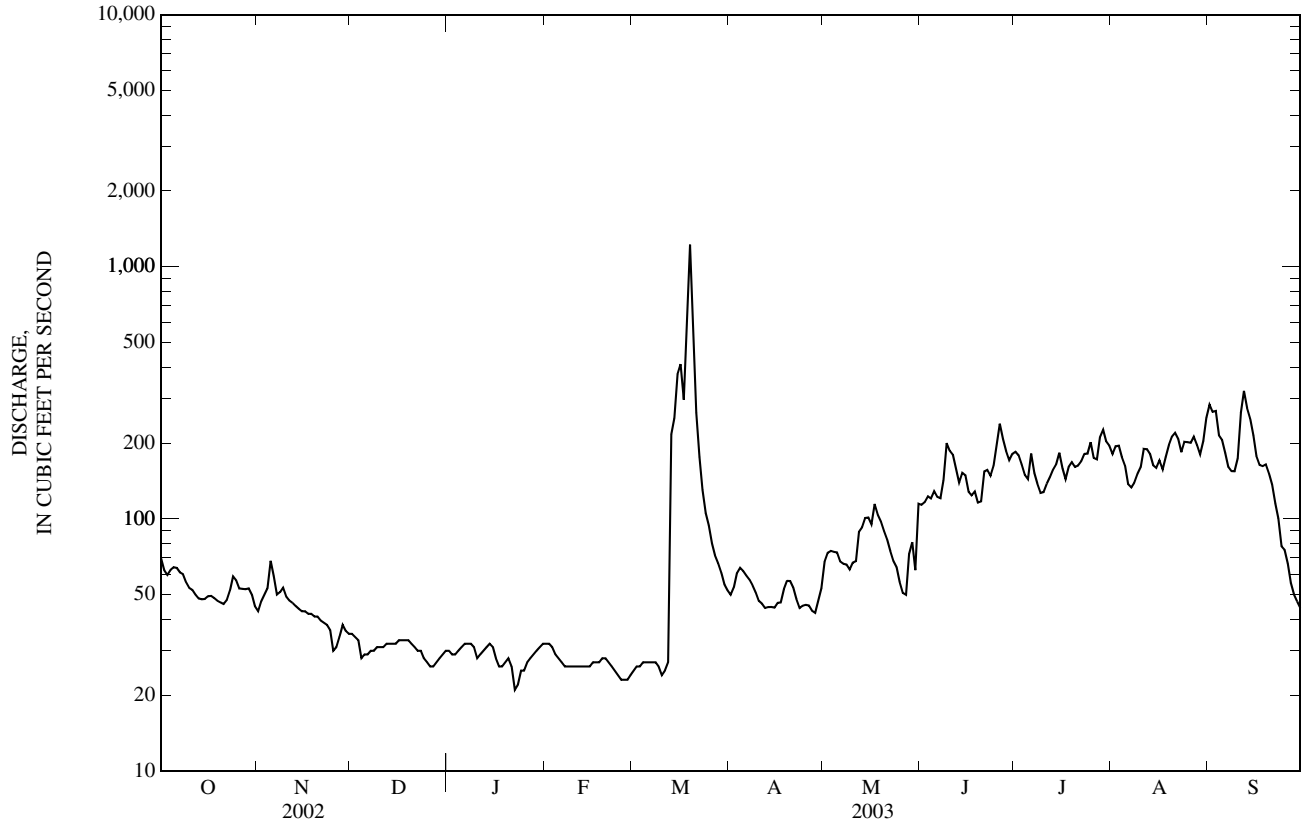
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)*

MEAN	114	81.2	53.7	45.3	135	330	342	697	601	333	279	228
MAX	607	835	379	319	1,311	1,731	1,787	3,805	2,499	1,473	625	723
(WY)	(1999)	(1999)	(1999)	(1999)	(1996)	(1996)	(1997)	(1995)	(1976)	(1993)	(1976)	(1986)
MIN	16.2	20.1	11.5	4.71	6.62	23.3	21.2	15.8	80.7	52.4	2.39	10.2
(WY)	(1962)	(1960)	(1962)	(1979)	(1979)	(2002)	(1981)	(1961)	(1961)	(1960)	(1961)	(1961)

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003*	
ANNUAL TOTAL	36,703		35,332			
ANNUAL MEAN	101		96.8		[a]270	
HIGHEST ANNUAL MEAN					773	1996
LOWEST ANNUAL MEAN					27.4	1961
HIGHEST DAILY MEAN	424	Sep 19	1,220	Mar 19	29,700	May 21, 1982
LOWEST DAILY MEAN	21	Apr 2	21	Jan 22	0.00	Aug 9, 1961
ANNUAL SEVEN-DAY MINIMUM	22	Mar 28	24	Feb 23	0.56	Aug 8, 1961
MAXIMUM PEAK FLOW			1,570	Mar 19	36,400	May 21, 1982
MAXIMUM PEAK STAGE			5.73	Mar 19	19.10	May 21, 1982
ANNUAL RUNOFF (AC-FT)	72,800		70,080		195,900	
10 PERCENT EXCEEDS	230		196		511	
50 PERCENT EXCEEDS	50		56		104	
90 PERCENT EXCEEDS	26		27		25	

* Regulated period only (1954-2003). See REMARKS.
a Median of annual mean discharges, 230 ft^3/s.
e Estimated.



06437020 BEAR BUTTE CREEK NEAR DEADWOOD, SD

LOCATION.--Lat 44° 20'08", long 103° 38'06", in NE$^1/_4$ SE$^1/_4$ sec.4, T.4 N., R.4 E., Lawrence County, Hydrologic Unit 10120202, on right bank 0.4 mi northeast of Galena, 0.5 mi downstream from Butcher Gulch, and 5.3 mi southeast of Deadwood.

DRAINAGE AREA.--16.6 mi^2.

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

GAGE.--Water-stage recorder. Elevation of gage is 4,750 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.83	e0.60	0.81	e0.70	e0.60	e0.45	13	14	7.3	4.2	0.90	0.90
2	0.85	e0.65	0.82	e0.65	e0.55	e0.45	11	13	7.2	3.6	0.89	0.82
3	0.81	e0.75	0.87	e0.70	e0.55	e0.45	9.5	13	7.4	3.0	0.86	0.78
4	0.77	e0.75	e0.65	e0.65	e0.50	e0.40	8.0	12	6.8	3.1	0.85	0.76
5	0.74	e0.80	e0.75	e0.65	e0.45	e0.40	7.4	12	8.1	3.8	0.87	0.75
6	0.82	0.85	0.88	e0.65	e0.40	e0.45	6.6	11	9.3	3.2	0.87	0.73
7	0.81	0.89	0.87	e0.60	e0.45	e0.40	5.6	10	16	2.5	1.1	0.94
8	0.75	0.94	e0.75	e0.60	e0.55	e0.50	5.6	11	14	2.3	1.4	0.96
9	0.76	0.97	e0.70	e0.50	e0.65	e0.65	6.1	12	12	2.0	1.1	0.84
10	0.76	0.93	e0.65	e0.45	e0.70	e0.80	6.9	15	11	1.9	1.4	3.8
11	0.77	0.88	e0.60	e0.40	e0.80	e1.2	7.5	24	11	1.8	1.1	1.6
12	0.82	0.81	e0.55	e0.50	e0.75	e1.8	7.8	28	11	1.8	0.96	1.3
13	0.77	0.86	e0.55	e0.45	e0.75	e9.0	8.0	27	11	1.6	0.85	1.3
14	0.79	0.81	e0.60	e0.45	e0.75	e32	7.8	24	10	1.5	0.82	1.2
15	0.80	0.77	e0.65	e0.40	e0.80	e28	7.2	30	10	1.4	0.82	1.0
16	0.81	e0.70	e0.65	e0.40	e0.85	e24	6.8	32	9.9	1.4	0.77	0.98
17	0.79	e0.65	e0.60	e0.40	e0.80	18	6.9	24	10	1.3	0.76	1.1
18	0.72	e0.75	e0.55	e0.45	e0.75	7.9	8.3	19	9.3	1.4	0.86	1.6
19	0.70	0.81	e0.55	e0.55	e0.75	5.6	8.9	17	8.9	1.4	0.86	1.4
20	0.71	0.78	e0.55	e0.45	e0.65	5.3	8.4	15	8.7	1.2	0.89	1.2
21	0.77	0.79	e0.50	e0.40	e0.60	6.2	6.3	13	8.5	1.2	0.82	1.1
22	0.85	0.78	e0.45	e0.35	e0.50	7.1	6.0	12	8.2	1.1	0.75	1.1
23	e0.65	e0.65	e0.45	e0.40	e0.35	10	6.6	11	7.6	1.1	0.70	1.0
24	e0.77	e0.65	e0.40	e0.45	e0.30	8.0	7.9	10	8.9	1.0	1.6	1.0
25	e0.77	e0.65	e0.40	e0.45	e0.35	6.9	6.7	9.8	9.7	0.98	0.88	1.0
26	e0.81	e0.70	e0.40	e0.45	e0.45	6.4	5.6	10	7.7	1.0	0.78	1.2
27	e0.73	e0.75	0.47	e0.55	e0.45	4.9	4.5	9.7	6.5	1.2	0.74	1.2
28	e0.77	e0.85	0.41	e0.50	e0.45	5.2	5.3	8.9	7.2	1.1	0.75	1.2
29	e0.65	e0.85	0.59	e0.50	---	9.5	8.7	8.2	6.5	0.99	0.84	1.2
30	e0.60	e0.85	0.68	e0.55	---	e8.5	11	7.3	5.0	0.91	0.91	1.2
31	e0.60	---	0.73	e0.55	---	e8.0	---	7.2	---	0.89	0.96	---
TOTAL	23.55	23.47	19.08	15.75	16.50	218.45	225.9	470.1	274.7	55.87	28.66	35.16
MEAN	0.76	0.78	0.62	0.51	0.59	7.05	7.53	15.2	9.16	1.80	0.92	1.17
MAX	0.85	0.97	0.88	0.70	0.85	32	13	32	16	4.2	1.6	3.8
MIN	0.60	0.60	0.40	0.35	0.30	0.40	4.5	7.2	5.0	0.89	0.70	0.73
AC-FT	47	47	38	31	33	433	448	932	545	111	57	70

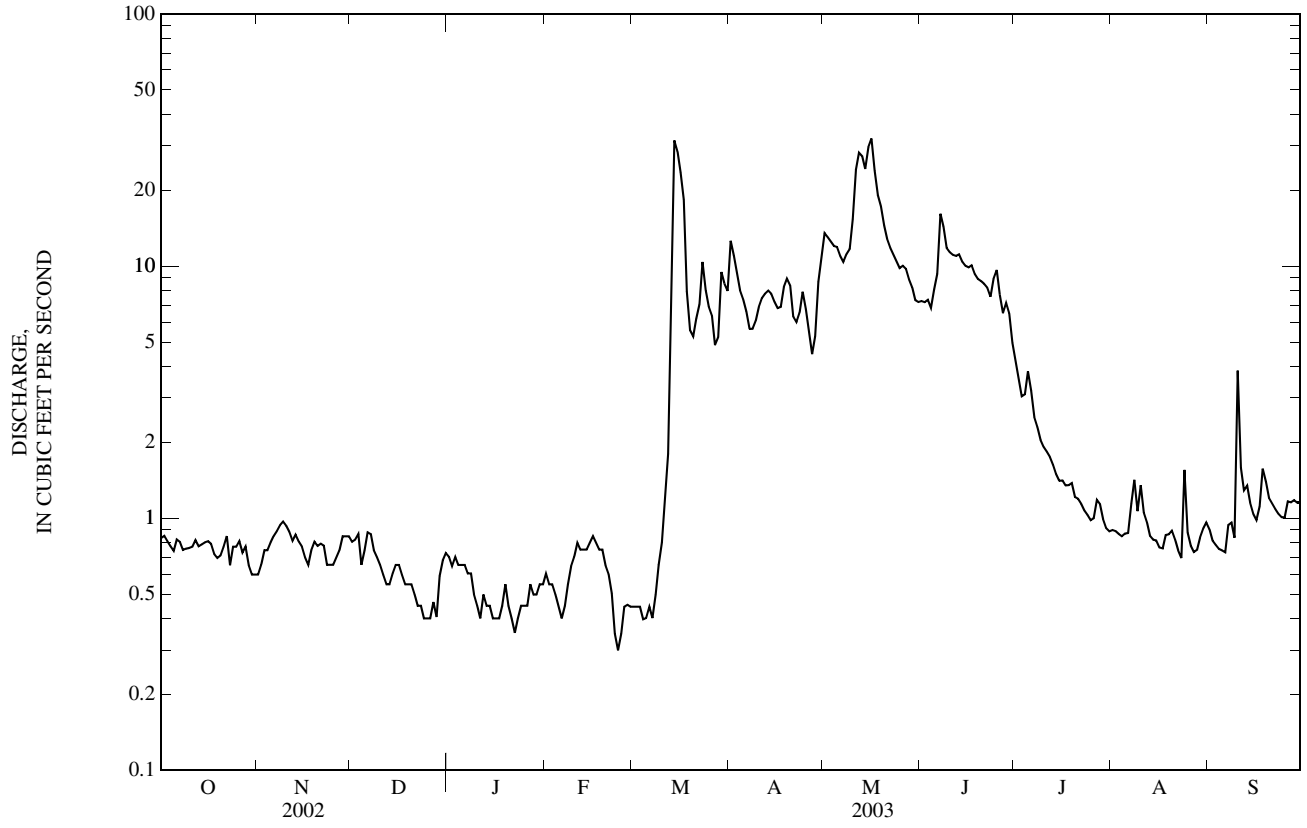
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

MEAN	4.91	3.08	2.08	1.76	1.96	6.77	20.4	24.8	17.1	4.61	3.09	2.11
MAX	37.5	15.8	6.53	4.42	4.66	21.2	73.7	94.8	44.7	9.68	10.3	6.26
(WY)	(1999)	(1999)	(1999)	(1997)	(1997)	(1997)	(1997)	(1995)	(1991)	(1997)	(1998)	(1998)
MIN	0.69	0.78	0.28	0.30	0.45	1.67	4.38	4.12	1.59	1.07	0.66	0.31
(WY)	(1993)	(2003)	(1991)	(1991)	(1991)	(2002)	(1989)	(2002)	(2002)	(2002)	(1992)	(1990)

06437020 BEAR BUTTE CREEK NEAR DEADWOOD, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1989 - 2003	
ANNUAL TOTAL	821.88		1,407.19			
ANNUAL MEAN	2.25		3.86		7.74	
HIGHEST ANNUAL MEAN					17.1	1997
LOWEST ANNUAL MEAN					2.29	1992
HIGHEST DAILY MEAN	82	Apr 7	32	Mar 14	543	May 8, 1995
LOWEST DAILY MEAN	0.40	Dec 24	0.30	Feb 24	0.00	Sep 1, 1990
ANNUAL SEVEN-DAY MINIMUM	0.43	Dec 22	0.40	Feb 23	0.05	Aug 29, 1990
MAXIMUM PEAK FLOW			80	May 15	1,590	May 8, 1995
MAXIMUM PEAK STAGE			5.11	May 15	8.34	May 8, 1995
ANNUAL RUNOFF (AC-FT)	1,630		2,790		5,610	
10 PERCENT EXCEEDS	4.2		10		19	
50 PERCENT EXCEEDS	0.97		0.89		2.6	
90 PERCENT EXCEEDS	0.65		0.45		0.79	

e Estimated.



06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD

LOCATION.--Lat 44° 22'11", long 102° 33'56", in $NE^1/_4$ $NE^1/_4$ sec.29, T.5 N., R.13 E., Meade County, Hydrologic Unit 10120202, on right bank 50 ft downstream from highway bridge, 4.3 mi northwest of Elm Springs, and 4.7 mi downstream from Hay Creek.

DRAINAGE AREA.--7,210 mi^2, approximately.

PERIOD OF RECORD.--August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 926: 1929, 1931(M), 1935, 1937.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,171.60 ft above NGVD of 1929. Prior to July 27, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Keyhole Dam, usable capacity, 191,600 acre-ft, 304 mi upstream since Oct. 25, 1952. At a point 133 mi above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal near Belle Fourche (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres upstream from station. Maximum discharge prior to Sept. 30, 1953, 35,700 ft^3/s, June 10, 1941, gage height, 14.30 ft; no flow for many days in 1936-37, 1939-40. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1927 reached a stage of 21.8 ft. Flood in spring of 1933 reached a stage of about 20 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	e37	e32	e37	e61	e44	75	83	77	161	175	239
2	83	e35	e26	e38	e65	e46	70	224	112	167	161	296
3	72	e41	e22	e39	e66	e45	67	145	122	164	154	284
4	66	e51	e22	e38	e62	e42	70	197	126	165	171	284
5	64	e56	e23	e37	e56	e41	75	189	134	158	155	229
6	67	e60	e23	e38	e48	e41	76	133	136	131	141	201
7	67	e65	e24	e39	e46	e42	77	111	134	150	126	175
8	67	e58	e26	e39	e45	e49	73	98	127	152	112	148
9	64	50	e28	e39	e44	e58	67	89	126	127	116	135
10	62	48	e27	e38	e43	e70	64	83	176	110	133	167
11	56	49	e26	e35	e43	e82	59	81	185	105	134	159
12	54	47	e26	e29	e42	e92	55	72	176	117	156	228
13	52	45	e26	e21	e43	e115	52	72	156	119	157	341
14	51	43	e26	e18	e44	e140	52	82	133	129	158	291
15	48	43	e26	e20	e48	e180	52	88	135	135	140	255
16	50	41	e26	e22	e52	e240	57	93	140	154	133	220
17	53	42	e25	e24	e56	e355	54	92	127	148	140	181
18	52	43	e25	e26	e59	1,010	58	100	117	119	137	160
19	51	42	e24	e30	e61	3,700	63	105	111	129	147	150
20	50	41	e23	e31	e62	1,750	67	97	110	143	176	151
21	50	40	e21	e28	e61	787	63	91	99	136	178	143
22	51	40	e19	e28	e58	442	61	86	132	133	201	132
23	54	39	e17	e28	e51	300	58	80	145	145	194	113
24	54	e40	e15	e29	e41	217	66	75	152	153	162	97
25	51	e21	e16	e29	e37	171	62	67	159	151	178	82
26	61	e23	e21	e30	e36	147	55	61	166	164	178	67
27	58	e24	e23	e33	e37	129	52	55	228	170	179	64
28	54	e33	e28	e40	e42	112	54	51	211	141	191	57
29	e52	e36	e30	e43	---	99	64	49	177	170	196	50
30	e49	e36	e32	e50	---	92	71	67	165	200	181	46
31	e44	---	e37	e58	---	89	---	76	---	179	197	---
TOTAL	1,802	1,269	765	1,034	1,409	10,727	1,889	2,992	4,294	4,525	4,957	5,145
MEAN	58.1	42.3	24.7	33.4	50.3	346	63.0	96.5	143	146	160	172
MAX	95	65	37	58	66	3,700	77	224	228	200	201	341
MIN	44	21	15	18	36	41	52	49	77	105	112	46
AC-FT	3,570	2,520	1,520	2,050	2,790	21,280	3,750	5,930	8,520	8,980	9,830	10,210

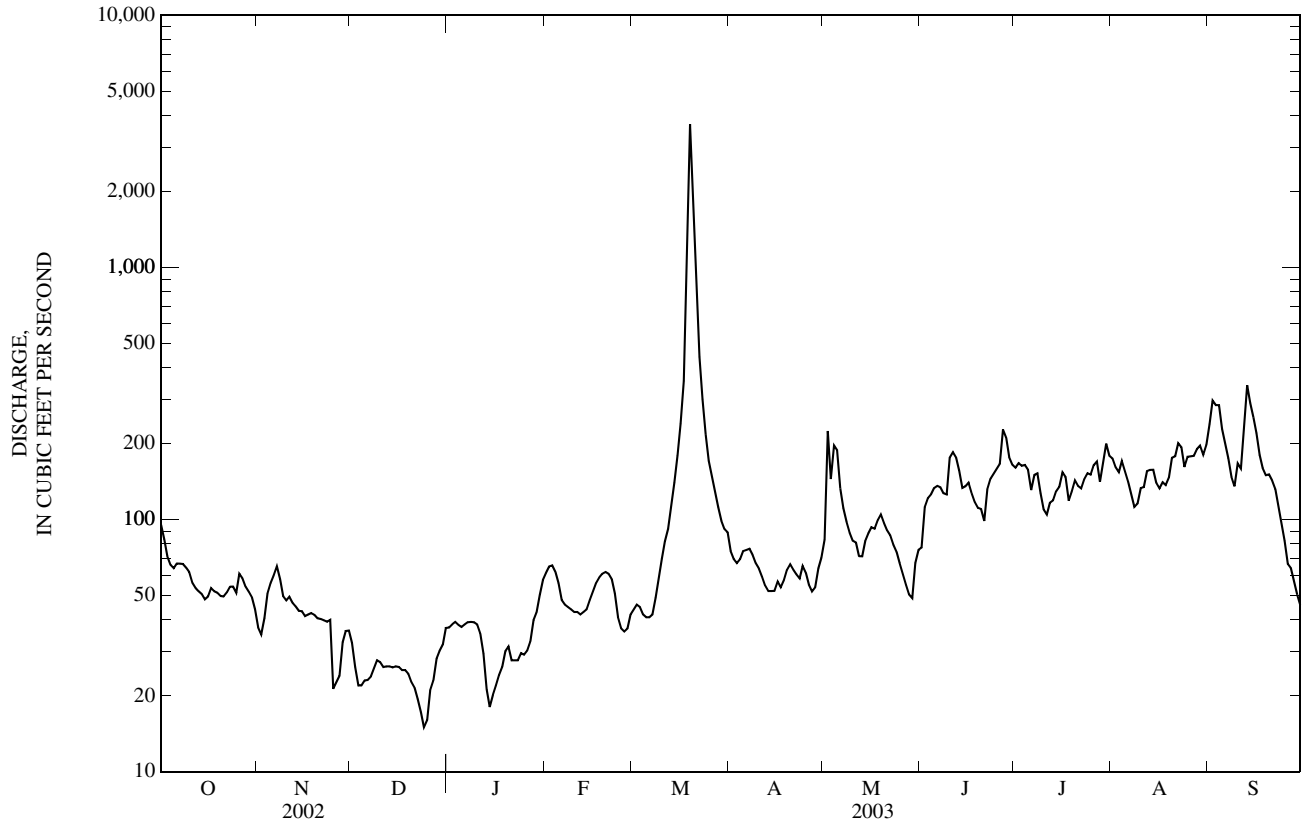
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)*

MEAN	140	86.1	56.3	49.3	186	478	494	1,009	818	357	273	229
MAX	1,361	1,081	479	440	2,283	2,457	2,671	6,264	2,985	1,791	634	768
(WY)	(1999)	(1999)	(1999)	(1999)	(1997)	(1978)	(1997)	(1995)	(1976)	(1993)	(1976)	(1986)
MIN	13.9	14.8	2.45	0.016	0.45	27.9	13.4	13.6	76.1	34.0	0.77	2.65
(WY)	(1962)	(1960)	(1962)	(1991)	(1991)	(2002)	(1981)	(1961)	(1961)	(1960)	(1961)	(1961)

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003*	
ANNUAL TOTAL	36,647.6		40,808			
ANNUAL MEAN	100		112		[a]348	
HIGHEST ANNUAL MEAN					1,036	1996
LOWEST ANNUAL MEAN					28.4	1961
HIGHEST DAILY MEAN	460	Sep 21	3,700	Mar 19	35,700	May 28, 1996
LOWEST DAILY MEAN	8.8	Mar 7	15	Dec 24	[b]0.00	Jun 5, 1961
ANNUAL SEVEN-DAY MINIMUM	9.3	Mar 3	19	Dec 20	0.00	Aug 9, 1961
MAXIMUM PEAK FLOW			4,580	Mar 19	[c]45,100	Jun 8, 1964
MAXIMUM PEAK STAGE			5.39	Mar 19	18.22	May 21, 1982
ANNUAL RUNOFF (AC-FT)	72,690		80,940		252,500	
10 PERCENT EXCEEDS	227		179		662	
50 PERCENT EXCEEDS	52		67		110	
90 PERCENT EXCEEDS	20		28		20	

* Regulated period only (1954-2003). See REMARKS.
a Median of annual mean discharges, 290 ft^3/s.
b No flow for many days in 1961-62, 1981, and 1991.
c Gage height, 15.90 ft.
e Estimated.



06438500 CHEYENNE RIVER NEAR PLAINVIEW, SD

LOCATION.--Lat 44° 31'51", long 101° 55'43", in $NW^1/_4$ $NW^1/_4$ $NE^1/_4$ sec.34, T.7 N., R.18 E., Ziebach County, Hydrologic Unit 10120112, on SD Highway 34 and 73 bridge, 10.5 mi south of Howes.

DRAINAGE AREA.--21,640 mi^2, approximately.

PERIOD OF RECORD.--October 1950 to September 1981, October 1994 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,868 ft above NGVD of 1929, from topographic map. Prior to October 1994 at site 3 mi upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flows regulated by: Angostura Dam, 167 mi upstream on the Cheyenne River (see station 06401000) since October 1949 significantly affect peak flows; Pactola Reservoir, 25.4 mi upstream from Rapid City (see station 06411000) since June 1963; Keyhole Reservoir (see station 06427000) near Moorcroft, WY, since Oct. 25, 1952; and Belle Fourche Reservoir near Belle Fourche (see station 06435000) since May 1910. Flow also affected by diversions for irrigation of about 70,000 acres and return flow from irrigated areas. U.S. Army Corps of Engineers satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood late in May 1920 reached a stage of about 17.5 ft, previous datum, and flood in May 1927 reached a stage of about 14 ft, previous datum, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	228	e130	e180	e230	e600	e260	218	186	181	261	184	209
2	210	e130	e170	e220	e580	e260	204	2,190	177	248	186	235
3	198	e160	e160	e210	e550	e260	195	1,070	220	239	174	269
4	187	e200	e120	e200	e500	e250	187	583	257	237	165	280
5	185	e240	e78	e195	e450	e250	183	564	265	233	179	283
6	179	290	e68	e180	e410	e250	183	531	251	251	164	250
7	183	309	e80	e180	e320	e260	199	881	249	365	149	221
8	181	314	e95	e170	e270	e270	204	494	252	252	153	199
9	179	299	e110	e175	e210	e260	194	1,150	254	243	523	180
10	182	241	e140	e190	e180	e250	191	1,060	246	216	383	414
11	168	208	e150	e200	e170	e250	180	524	285	172	228	294
12	162	199	e170	e180	e160	e290	175	623	295	147	202	242
13	161	192	e180	e160	e170	e340	170	505	286	145	198	320
14	160	184	e190	e140	e180	e650	160	369	302	137	175	384
15	156	178	e200	e130	e210	e940	156	320	341	133	170	345
16	160	174	e210	e110	e310	e1,200	149	285	321	137	155	319
17	168	176	e220	e94	e400	e763	154	270	285	139	150	284
18	172	176	e230	e90	e550	960	153	264	256	140	148	265
19	159	177	e240	e90	e700	3,770	165	270	237	128	150	240
20	159	178	e230	e93	e800	4,460	174	268	238	123	151	290
21	158	172	e205	e98	e900	2,000	236	250	285	146	166	272
22	159	171	e170	e102	e600	948	215	242	255	155	175	248
23	172	162	e150	e110	e480	617	186	236	260	154	191	226
24	176	160	e140	e120	e400	467	187	234	296	161	197	197
25	188	e140	e140	e130	e330	386	198	227	306	151	181	173
26	196	e60	e140	e140	e270	332	229	244	295	147	171	167
27	210	e75	e150	e150	e250	294	233	230	292	148	167	150
28	e210	e90	e160	e180	e250	265	196	220	343	169	170	140
29	e214	e140	e180	e300	---	242	188	207	324	147	170	137
30	e200	e230	e210	e400	---	238	188	186	283	160	178	128
31	e170	---	e240	e500	---	234	---	177	---	186	190	---
TOTAL	5,590	5,555	5,106	5,467	11,200	22,216	5,650	14,860	8,137	5,670	5,943	7,361
MEAN	180	185	165	176	400	717	188	479	271	183	192	245
MAX	228	314	240	500	900	4,460	236	2,190	343	365	523	414
MIN	156	60	68	90	160	234	149	177	177	123	148	128
AC-FT	11,090	11,020	10,130	10,840	22,220	44,070	11,210	29,470	16,140	11,250	11,790	14,600

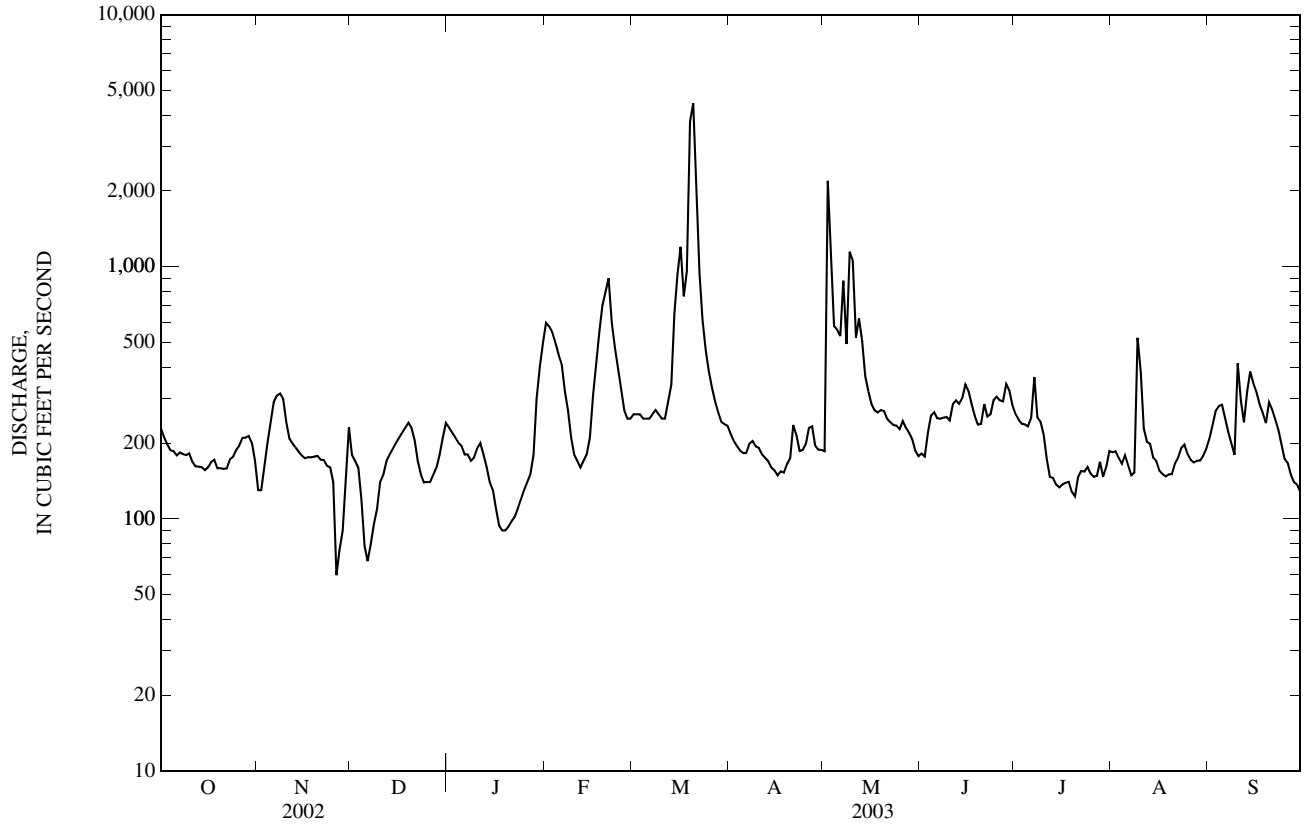
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1981, 1995 - 2003, BY WATER YEAR (WY)

MEAN	334	273	181	163	472	1,024	1,124	1,845	2,002	739	495	381
MAX	2,927	3,016	907	954	4,980	4,359	5,182	8,471	8,981	2,585	1,949	1,110
(WY)	(1999)	(1999)	(1999)	(1997)	(1997)	(1978)	(2000)	(1995)	(1967)	(1962)	(1997)	(1955)
MIN	39.2	93.8	28.6	10.0	42.1	124	71.3	83.3	172	61.8	48.0	16.2
(WY)	(1962)	(1960)	(1962)	(1962)	(1979)	(1981)	(1961)	(1961)	(1961)	(1960)	(1961)	(1961)

06438500 CHEYENNE RIVER NEAR PLAINVIEW, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1951-1981, 1995-2003	
ANNUAL TOTAL	88,153		102,755			
ANNUAL MEAN	242		282		[a]753	
HIGHEST ANNUAL MEAN					2,417	1997
LOWEST ANNUAL MEAN					97.2	1961
HIGHEST DAILY MEAN	1,750	Sep 10	4,460	Mar 20	61,200	May 28, 1996
LOWEST DAILY MEAN	60	Nov 26	60	Nov 26	[b]0.00	Dec 14, 1961
ANNUAL SEVEN-DAY MINIMUM	99	Dec 4	97	Jan 16	1.0	Jan 17, 1962
MAXIMUM PEAK FLOW			7,440	Mar 19	69,700	May 28, 1996
MAXIMUM PEAK STAGE			13.45	Mar 19	22.10	May 28, 1996
ANNUAL RUNOFF (AC-FT)	174,900		203,800		545,400	
10 PERCENT EXCEEDS	351		428		1,500	
50 PERCENT EXCEEDS	200		200		283	
90 PERCENT EXCEEDS	140		140		80	

a Median of annual mean discharges, 650 ft^3/s.
b Also Dec. 19-21, 1961.
e Estimated.



06439000 CHERRY CREEK NEAR PLAINVIEW, SD

LOCATION.--Lat 44° 44'35", long 102° 03'11", in $SW^1/_4$ $NE^1/_4$ sec.16, T.9 N., R.17 E., Meade County, Hydrologic Unit 10120113, on right upstream wingwall of bridge on State Highway 73, 0.2 mi downstream from small right-bank tributary, 6.2 mi downstream from Red Owl Creek, and 11 mi northeast of Plainview.

DRAINAGE AREA.--1,190 mi^2, approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October and November 1945, published in WSP 1309.

REVISED RECORDS.--WDR SD-85-1: Location and datum.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,157.91 ft above NGVD of 1929. Prior to June 8, 1948, nonrecording gage at same site and datum. Prior to Sept. 27, 1985, recording gage at site 100 ft downstream at same datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	e0.00	7.5	0.09	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	e0.00	5.7	0.36	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	e0.00	4.4	0.28	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	e0.00	3.4	0.31	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	e0.00	2.5	0.30	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	e0.00	2.1	0.20	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	e0.00	1.6	0.12	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	e0.00	1.2	0.19	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	e0.00	1.0	0.53	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	e0.00	0.82	0.52	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	e0.2	0.68	0.47	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	e1.0	0.49	0.37	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	e4.0	0.35	0.22	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	e5.0	0.27	0.12	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	e6.0	0.18	0.06	58	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	e7.0	0.05	0.00	14	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	e0.58	e9.0	0.08	0.00	3.4	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	e13	0.10	0.00	1.1	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	64	0.12	0.00	0.58	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	69	0.03	0.00	0.18	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	383	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	328	0.01	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	158	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	e0.00	81	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	e0.00	48	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	e0.00	33	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	e0.00	24	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	e0.00	17	0.00	0.00	0.44	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	14	0.24	0.00	0.40	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	12	0.10	0.00	0.08	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	11	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.58	1,287.20	32.92	4.14	78.18	0.00	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.021	41.5	1.10	0.13	2.61	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.58	383	7.5	0.53	58	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	1.2	2,550	65	8.2	155	0.00	0.00	0.00

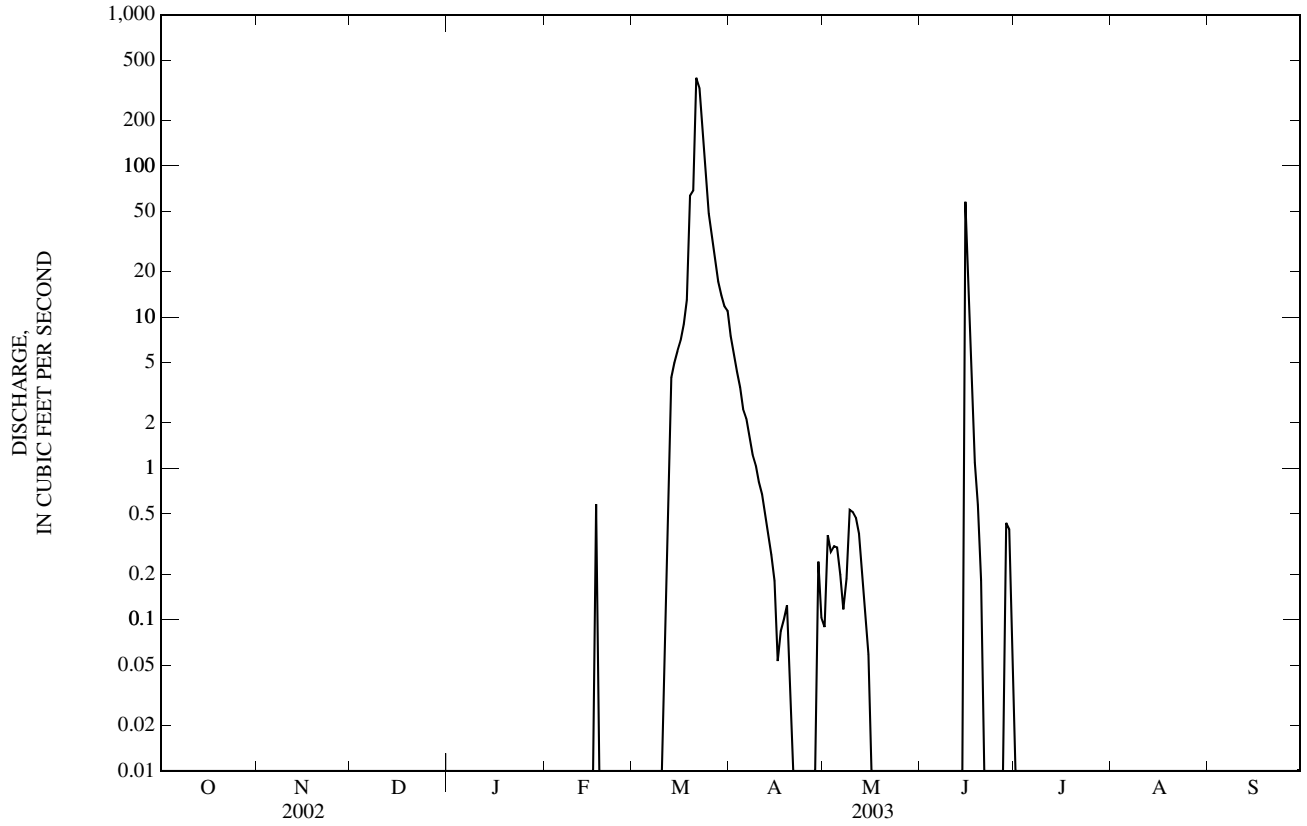
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

MEAN	4.81	1.88	0.92	1.15	29.5	168	142	132	110	27.8	8.10	0.79
MAX	109	50.7	10.6	16.5	721	1,475	2,221	1,215	794	685	175	16.6
(WY)	(1983)	(1999)	(1999)	(1947)	(1996)	(1997)	(1952)	(1982)	(1953)	(1993)	(1953)	(1986)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1946)	(1946)	(1946)	(1946)	(1946)	(1957)	(1957)	(1955)	(1955)	(1949)	(1946)	(1946)

06439000 CHERRY CREEK NEAR PLAINVIEW, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL TOTAL	32.60		1,403.02			
ANNUAL MEAN	0.089		3.84		[a]52.3	
HIGHEST ANNUAL MEAN					269	1997
LOWEST ANNUAL MEAN					0.000	1961
HIGHEST DAILY MEAN	3.6	Apr 22	383	Mar 21	13,800	Apr 2, 1952
LOWEST DAILY MEAN	0.00	Jan 1	[b]0.00	Oct 1	[b]0.00	Oct 1, 1945
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1, 1945
MAXIMUM PEAK FLOW			860	Mar 21	17,500	Apr 1, 1952
MAXIMUM PEAK STAGE			8.69	Mar 21	22.63	Apr 1, 1952
ANNUAL RUNOFF (AC-FT)	65		2,780		37,860	
10 PERCENT EXCEEDS	0.25		0.58		58	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Median of annual mean discharges, 28 ft^3/s.
b No flow for long periods in most years.
e Estimated.



06439980 LAKE OAHE NEAR PIERRE, SD

LOCATION.--Lat 44° 27'30", long 100° 23'29", in NE$^1/_4$ sec.1, T.111 N., R.80 W., 5th principal meridian, Hughes County, Hydrologic Unit 10130105, in Pier A of Control Tower No. 1 of powerhouse intake structure of dam on Missouri River, 6.0 mi northwest of Pierre, 7.1 mi upstream from Bad River, and at mile 1,072.3.

DRAINAGE AREA.--243,500 mi^2, approximately.

PERIOD OF RECORD.--August 1958 to current year (monthend contents only). Prior to October 1967, published as Oahe Reservoir near Pierre.

GAGE.--Water-stage recorder. Elevations listed to NGVD of 1929. Prior to Jan. 14, 1958, nonrecording gages at various locations upstream from outlet works, Jan. 14, 1959, to Sept. 30, 1962, recorder in Tower No. 1 of outlet works, all at same datum.

REVISED RECORDS.--WDR SD-88-1: September monthend elevation.

REMARKS.--Reservoir is formed by an earthfill dam; storage began in August 1958. Maximum capacity, 23,338,000 acre-ft below elevation 1,620.0 ft (top of spillway gates). Normal maximum, 22,240,000 acre-ft below 1,617.0 ft, of which about 2,390,000 acre-ft is designated for flood control. Inactive storage, 5,451,000 acre-ft below elevation 1,540.0 ft. Dead storage, 1,970 acre-ft below elevation 1,425.0 ft (invert of lowest outlet tunnel). Figures given herein represent elevations at powerhouse intake structure and total contents adjusted for wind effect.

The spillway consists of a gated chute with flat crest at elevation 1,596.5 ft, 8 gates, 50 by 23.5 ft each; design capacity, 300,000 ft^3/s. The outlet works consist of 7 turbines with a generating capacity of 85,000 kilowatts each. Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Records of elevation and contents provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 22,764,000 acre-ft, May 14, 1986, affected by wind; maximum elevation, 1,618.71 ft, June 25, 1995; minimum since initial filling, 11,932,000 acre-ft, Sept. 30, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 13,685,000 acre-ft, May 25; minimum contents, 11,932,000 acre-ft, Sept. 30.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,586.39	13,112,000	--
Oct. 31	1,585.12	12,844,000	-268,000
Nov. 30	1,583.44	12,495,000	-349,000
Dec. 31	1,584.33	12,790,000	+295,000
CAL YR 2002	--	--	-3,425,000
Jan. 31	1,585.31	12,887,000	+97,000
Feb. 28	1,587.15	13,304,000	+417,000
Mar. 31	1,588.15	13,558,000	+254,000
Apr. 30	1,587.45	13,364,000	-194,000
May 31	1,588.67	13,660,000	+296,000
June 30	1,587.42	13,437,000	-223,000
July 31	1,586.48	13,137,000	-300,000
Aug. 31	1,584.36	12,691,000	-446,000
Sept. 30	1,581.00	11,932,000	-759,000
WTR YR 2003	--	--	-1,180,000

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06440000 MISSOURI RIVER AT PIERRE, SD

LOCATION.--Lat 44° 22'23", long 100° 22'03" in NW$^1/_4$ SW$^1/_4$ sec.32, T.111 N., R.79 W., Hughes County, Hydrologic Unit 10140101, on left bank downstream from Dakota Minnesota and Eastern Railroad bridge, 1.3 mi upstream from Bad River, 5.8 mi downstream from Oahe Dam, and at mile 1,066.5.

PERIOD OF RECORD.--October 1929 to September 1965, October 1988 to current year (daily gage height). Daily discharges, October 1929 to September 1965 and October 1996 to September 2000.

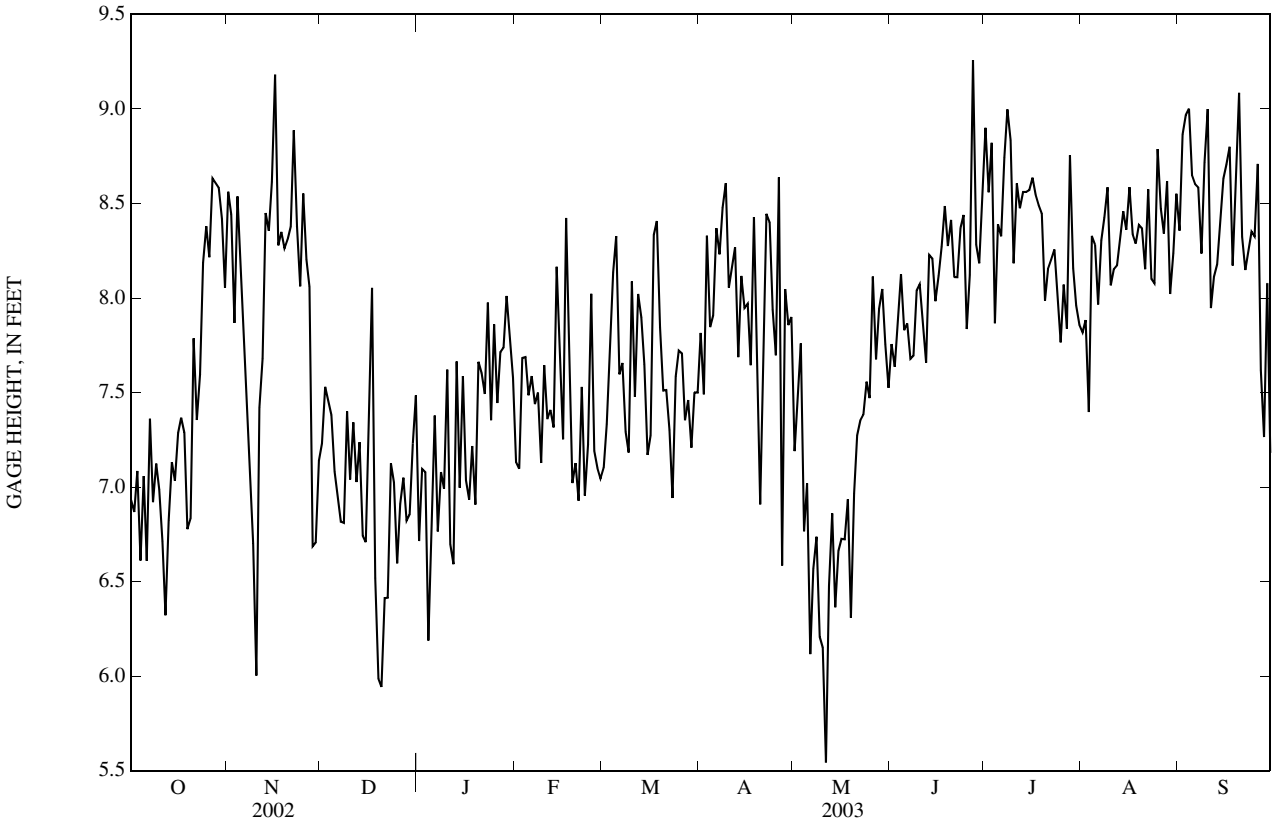
GAGE.--Water-stage recorder. Datum of gage is 1,414.26 ft above NGVD of 1929. Prior to Mar. 11, 1932, chain gage at same site at datum 2.00 ft higher.

REMARKS.--Records good. Stage regulated by Big Bend Dam approximately 82 mi downstream. Flow regulated by Oahe Dam 5.8 mi (revised) upstream. Gage heights for period of October 1965 to September 1988 in files of U.S. Army Corps of Engineers.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.93	8.56	7.23	6.71	7.13	7.10	7.82	7.19	7.76	8.90	7.82	8.36
2	6.87	8.44	7.53	7.10	7.10	7.33	7.49	7.46	7.64	8.56	7.88	8.86
3	7.08	7.87	7.46	7.08	7.68	7.73	8.33	7.76	7.90	8.82	7.40	8.97
4	6.61	8.54	7.38	6.19	7.69	8.14	7.85	6.77	8.13	7.87	8.33	9.00
5	7.06	8.17	7.08	6.80	7.49	8.33	7.91	7.02	7.83	8.39	8.28	8.65
6	6.61	7.88	6.96	7.38	7.59	7.60	8.37	6.12	7.87	8.33	7.97	8.60
7	7.36	7.48	6.82	6.76	7.44	7.66	8.23	6.57	7.68	8.74	8.30	8.58
8	6.92	7.05	6.81	7.08	7.50	7.29	8.48	6.74	7.70	9.00	8.43	8.23
9	7.12	6.70	7.40	6.99	7.13	7.18	8.61	6.21	8.04	8.84	8.59	8.72
10	6.99	6.00	7.04	7.62	7.64	8.09	8.05	6.15	8.07	8.18	8.07	9.00
11	6.71	7.42	7.34	6.70	7.36	7.48	8.17	5.54	7.87	8.61	8.15	7.95
12	6.32	7.68	7.03	6.59	7.41	8.02	8.27	6.48	7.66	8.47	8.17	8.11
13	6.82	8.45	7.24	7.66	7.32	7.90	7.69	6.86	8.23	8.56	8.31	8.18
14	7.13	8.36	6.74	7.00	8.16	7.65	8.12	6.36	8.21	8.56	8.46	8.42
15	7.03	8.61	6.71	7.59	7.68	7.17	7.95	6.66	7.98	8.57	8.36	8.63
16	7.29	9.18	7.29	7.04	7.25	7.27	7.97	6.73	8.12	8.64	8.59	8.71
17	7.37	8.28	8.05	6.93	8.42	8.33	7.64	6.72	8.27	8.55	8.34	8.80
18	7.29	8.35	6.52	7.22	7.84	8.41	8.43	6.94	8.49	8.49	8.29	8.17
19	6.78	8.26	5.99	6.91	7.02	7.85	7.64	6.31	8.27	8.45	8.39	8.56
20	6.83	8.31	5.94	7.66	7.13	7.51	6.91	6.97	8.41	7.99	8.37	9.08
21	7.79	8.38	6.41	7.60	6.93	7.51	7.85	7.27	8.11	8.15	8.15	8.32
22	7.36	8.89	6.41	7.49	7.53	7.30	8.44	7.35	8.11	8.20	8.57	8.15
23	7.59	8.38	7.12	7.98	6.95	6.94	8.40	7.38	8.37	8.26	8.10	8.24
24	8.19	8.06	7.02	7.35	7.22	7.58	7.94	7.56	8.44	8.02	8.08	8.35
25	8.38	8.55	6.60	7.86	8.02	7.72	7.70	7.47	7.84	7.77	8.79	8.33
26	8.22	8.20	6.91	7.44	7.19	7.71	8.64	8.11	8.12	8.07	8.47	8.71
27	8.63	8.06	7.05	7.71	7.10	7.35	6.58	7.68	9.26	7.84	8.34	7.62
28	8.61	6.69	6.82	7.74	7.04	7.46	8.05	7.94	8.28	8.75	8.62	7.26
29	8.58	6.71	6.85	8.01	---	7.21	7.86	8.05	8.18	8.16	8.02	8.08
30	8.42	7.14	7.23	7.79	---	7.50	7.90	7.76	8.53	7.96	8.24	7.18
31	8.05	---	7.48	7.58	---	7.50	---	7.52	---	7.86	8.55	---
MEAN	7.39	7.96	6.98	7.28	7.43	7.61	7.98	7.02	8.11	8.37	8.27	8.39
MAX	8.63	9.18	8.05	8.01	8.42	8.41	8.64	8.11	9.26	9.00	8.79	9.08
MIN	6.32	6.00	5.94	6.19	6.93	6.94	6.58	5.54	7.64	7.77	7.40	7.18

06440000 MISSOURI RIVER AT PIERRE, SD—Continued



06440200 SOUTH FORK BAD RIVER NEAR COTTONWOOD, SD
(Formerly published as Buffalo Creek near Cottonwood)

LOCATION.--Lat 43° 58'08", long 101° 46'00", in NE$^1/_4$ SW$^1/_4$ SE$^1/_4$ sec.7, T.1 S., R.20 E., Jackson County, Hydrologic Unit 10140102, on right bank at upstream side of bridge on old U.S. Highway 16, 1.0 mi above confluence with Cottonwood Creek, and 7.0 mi east of Cottonwood.

DRAINAGE AREA.--250 mi^2.

PERIOD OF RECORD.--October 1954 to September 1960 (discharge measurements only), October 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,242.96 ft above NGVD of 1929. October 1954 to September 1960, nonrecording gage at same site at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	e0.10	e3.2	e1.0	0.00	0.47	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	e0.05	e3.7	e0.80	0.00	70	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	e0.03	e2.7	e0.70	0.00	80	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	e0.02	e1.9	e0.60	0.00	17	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	e0.01	e1.5	e0.50	0.00	6.7	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	e0.00	e1.0	e0.40	0.00	27	0.00	55	0.00	0.00
7	0.00	0.00	0.00	e0.00	e1.0	e0.30	0.00	21	0.00	108	0.00	0.00
8	0.00	9.2	0.00	e0.00	e1.1	e0.20	0.00	9.0	0.00	24	0.00	0.00
9	0.00	17	0.00	e0.00	e1.3	e0.20	0.00	8.7	0.00	8.8	0.00	0.00
10	0.00	8.8	0.00	e0.00	e1.4	e0.20	0.00	68	0.00	3.5	0.00	0.00
11	0.00	3.6	0.00	e0.00	e1.5	e0.30	0.00	29	0.00	0.72	0.00	0.00
12	0.00	1.8	0.00	e0.00	e1.6	e2.0	0.00	11	0.00	0.17	0.00	0.00
13	0.00	1.2	0.00	e0.00	e1.7	e10	0.00	9.1	0.00	0.02	0.00	0.00
14	0.00	0.49	0.00	e0.00	e1.8	16	0.00	4.4	0.00	0.00	0.00	0.00
15	0.00	0.22	0.00	e0.00	e1.9	6.5	0.00	1.2	0.00	0.00	0.00	0.00
16	0.00	0.09	0.00	e0.00	e2.0	14	0.00	0.49	0.00	0.00	0.00	0.00
17	0.00	0.06	e0.00	e0.00	e4.0	8.5	0.00	0.15	0.00	0.00	0.00	0.00
18	0.00	0.03	e0.00	e0.00	e10	5.1	0.33	0.10	0.00	0.00	0.00	0.00
19	0.00	0.00	e0.00	e0.00	e100	11	11	0.07	0.00	0.00	0.00	0.00
20	0.00	0.00	e0.00	e0.00	e50	154	40	0.04	0.00	0.00	0.00	0.00
21	0.00	0.00	e0.00	e0.00	e20	59	13	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	e0.00	e0.00	e10	13	4.1	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	e0.00	e0.00	e6.0	4.3	2.0	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	e0.00	e0.00	e4.0	1.5	1.1	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	e0.00	e0.00	e3.0	0.25	0.58	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	e0.00	e0.00	e2.2	0.05	18	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	e0.00	e0.01	e1.7	0.00	6.2	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	e0.01	e0.10	e1.4	0.00	2.4	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	e0.10	e1.0	---	0.00	0.90	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	e0.20	e2.0	---	0.00	0.48	0.00	0.00	0.00	0.00	0.00
31	0.00	---	e0.15	e3.0	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	42.49	0.46	6.32	241.6	310.40	100.09	363.42	0.00	200.21	0.00	0.00
MEAN	0.000	1.42	0.015	0.20	8.63	10.0	3.34	11.7	0.000	6.46	0.000	0.000
MAX	0.00	17	0.20	3.0	100	154	40	80	0.00	108	0.00	0.00
MIN	0.00	0.00	0.00	0.00	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	84	0.9	13	479	616	199	721	0.00	397	0.00	0.00

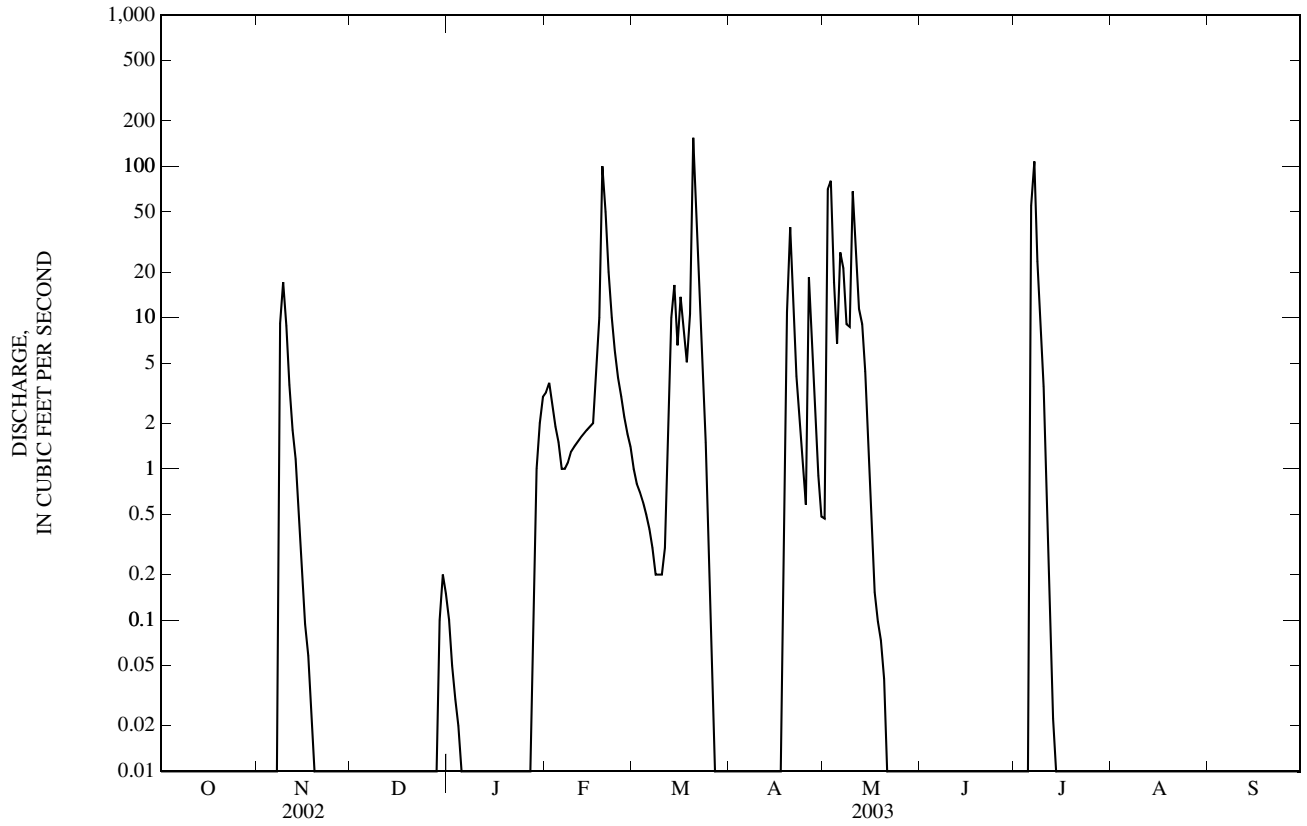
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

MEAN	5.57	3.25	0.44	0.90	41.1	33.4	24.8	74.8	60.5	13.9	9.97	3.73
MAX	39.9	29.3	3.50	4.46	555	122	150	324	347	99.5	72.6	12.3
(WY)	(1999)	(1999)	(1994)	(1994)	(1997)	(2001)	(2000)	(1995)	(1991)	(1997)	(1997)	(1999)
MIN	0.000	0.000	0.000	0.000	0.000	0.64	0.017	1.11	0.000	0.000	0.000	0.000
(WY)	(1991)	(1990)	(1991)	(1989)	(1989)	(1991)	(1990)	(2001)	(2002)	(2002)	(1989)	(2000)

06440200 SOUTH FORK BAD RIVER NEAR COTTONWOOD, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1989 - 2003	
ANNUAL TOTAL	602.74		1,264.99			
ANNUAL MEAN	1.65		3.47		[a]22.5	
HIGHEST ANNUAL MEAN					94.5	1997
LOWEST ANNUAL MEAN					1.53	2002
HIGHEST DAILY MEAN	197	Sep 11	154	Mar 20	3,990	May 31, 1991
LOWEST DAILY MEAN	0.00	Jan 1	[b]0.00	Oct 1	[b]0.00	Oct 2, 1988
ANNUAL SEVEN-DAY MINIMUM	0.00	Feb 9	0.00	Oct 1	0.00	Oct 2, 1988
MAXIMUM PEAK FLOW			250	Feb 19	15,200	May 31, 1991
MAXIMUM PEAK STAGE			[c]8.20	Feb 19	17.89	May 31, 1991
ANNUAL RUNOFF (AC-FT)	1,200		2,510		16,330	
10 PERCENT EXCEEDS	1.4		6.6		23	
50 PERCENT EXCEEDS	0.00		0.00		0.11	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Median of annual mean discharges, 18 ft^3/s.
b No flow for many days in most years.
c Backwater from ice.
e Estimated.



06441000 BAD RIVER NEAR MIDLAND, SD

LOCATION.--Lat 44° 04'01", long 101° 09'36", in $NE^1/_4$ $NW^1/_4$ sec.7, T.1 N., R.25 E., Haakon County, Hydrologic Unit 10140102, on right bank at downstream side of bridge on State Highway 63, 0.4 mi southwest of Midland, 2.0 mi upstream from Mitchell Creek, and 3.7 mi upstream from Ash Creek.

DRAINAGE AREA.--1,460 mi^2, approximately.

PERIOD OF RECORD.--October 1945 to current year. Prior to February 1946 monthly discharge only, published in WSP 1309.

REVISED RECORDS.--WSP 2117: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,849.14 ft above NGVD of 1929. Prior to Feb. 21, 1961, nonrecording gage, and Feb. 21, 1961, to June 14, 1967, water-stage recorder at site 4.2 mi downstream at datum 15.72 ft lower. June 15 to July 26, 1967, nonrecording gage at site 30 ft upstream and July 27, 1967, to June 14, 1971, water-stage recorder at site 60 ft upstream, both at present datum.

REMARKS.--Records poor. Only daily discharges above 100 ft^3/s are being published. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft^3/s, June 15, 1967, gage height, 24.44 ft, from floodmarks, 20.10 ft, from floodmarks, at former site and datum, from rating curve extended above 16,000 ft^3/s; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 400 ft^3/s, Feb. 20, gage height, 7.41 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

Daily discharge above 100 ft^3/s are given herewith:

Feb. 21	e200	Mar. 22	e110

e Estimated.

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