

05069000 SAND HILL RIVER AT CLIMAX, MN

LOCATION.--Lat 47°36'43", long 96°48'52", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T.148 N., R.48 W., Polk County, Hydrologic Unit 09020301, on left bank 25 ft upstream from bridge on U.S. Highway 75 in Climax and 3.7 mi upstream from mouth.

DRAINAGE AREA.--420 mi².

PERIOD OF RECORD.--March 1943 to September 1984, June 1985 to current year (winter records incomplete prior to 1947). Monthly discharge only for some periods, published in WSP 1308 and 1728. October 1984 to May 1985, operated as a high-flow partial-record station.

REVISED RECORDS.--WSP 1388: 1943(M), 1944, 1947(M). WSP 1728: 1951(M), 1960 (average discharge).

GAGE.--Water-stage recorder. Datum of gage is 820.10 ft above sea level (NGVD or 1929, levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1966, nonrecording gage at site 3.2 mi upstream at datum 12.78 ft higher. Oct. 1, 1966 to Sept 5, 1989, nonrecording gage at present site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	1,010	e93	e33	e31	e30	e1,900	102	133	171	40	82
2	41	854	e96	e31	e32	e31	2,010	99	132	157	39	76
3	38	799	e98	e30	e32	e31	1,550	98	131	148	38	75
4	35	736	e90	e29	e31	e32	1,190	112	134	146	37	70
5	34	653	e83	e29	e30	e33	901	94	203	138	36	89
6	32	594	e78	e29	e29	e32	703	87	258	133	32	269
7	36	546	e74	e29	e29	e31	585	82	252	129	30	196
8	31	488	e70	e29	e29	e32	500	81	320	127	29	127
9	29	434	e65	e29	e30	e33	440	83	326	123	26	163
10	28	390	e66	e29	e32	e33	394	85	252	111	26	223
11	26	349	e67	e30	e32	e32	362	88	338	102	27	144
12	26	314	e57	e29	e32	e32	358	86	1,220	114	32	106
13	25	286	e56	e28	e31	e31	425	93	1,060	119	31	106
14	25	264	e57	e28	e30	e31	435	108	1,210	91	28	103
15	25	246	e56	e28	e30	e31	393	123	1,320	81	26	85
16	27	230	e57	e28	e29	e32	356	129	913	74	25	78
17	30	216	e51	e29	e29	e33	330	127	577	67	67	68
18	28	204	e49	e30	e29	e33	310	113	535	63	124	58
19	29	191	e50	e29	e29	e34	288	98	462	60	378	51
20	30	182	e44	e29	e29	e35	263	87	353	57	533	46
21	32	172	e40	e29	e30	e38	234	87	322	54	276	45
22	34	161	e39	e29	e30	e44	213	92	284	48	155	41
23	37	149	e38	e29	e30	e54	190	90	235	46	99	37
24	53	e120	e37	e30	e30	e75	172	88	227	47	72	36
25	56	e116	e37	e29	e30	e83	158	94	225	48	65	36
26	57	e115	e37	e29	e30	e108	145	104	173	59	131	36
27	57	e114	e37	e29	e30	e117	131	110	156	55	161	34
28	63	e118	e37	e30	e30	e221	122	111	143	51	178	32
29	77	e117	e38	e30	---	e350	114	115	149	50	160	30
30	706	e102	e37	e31	---	e580	108	135	166	46	122	33
31	1,260	---	e35	e31	---	e1,020	---	144	---	41	98	---
TOTAL	3,051	10,270	1,769	911	845	3,332	15,280	3,145	12,209	2,756	3,121	2,575
MEAN	98.4	342	57.1	29.4	30.2	107	509	101	407	88.9	101	85.8
MAX	1,260	1,010	98	33	32	1,020	2,010	144	1,320	171	533	269
MIN	25	102	35	28	29	30	108	81	131	41	25	30
AC-FT	6,050	20,370	3,510	1,810	1,680	6,610	30,310	6,240	24,220	5,470	6,190	5,110
CFSM	0.23	0.82	0.14	0.07	0.07	0.26	1.21	0.24	0.97	0.21	0.24	0.20
IN.	0.27	0.91	0.16	0.08	0.07	0.30	1.35	0.28	1.08	0.24	0.28	0.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2005, BY WATER YEAR (WY)

MEAN	39.8	40.5	21.0	15.2	17.8	97.3	380	134	117	92.7	41.9	37.1
MAX	223	342	58.0	36.8	183	610	1,568	1,156	689	703	426	374
(WY)	(1972)	(2005)	(1999)	(2001)	(1998)	(1999)	(1997)	(1950)	(2002)	(2002)	(1993)	(1999)
MIN	9.43	8.64	5.11	2.02	3.55	5.81	25.3	23.7	11.5	8.95	6.30	6.49
(WY)	(1977)	(1956)	(1964)	(1962)	(1962)	(1948)	(1981)	(1958)	(1980)	(1980)	(1961)	(1955)

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SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1943 - 2005	
ANNUAL TOTAL	48,079.6		59,264			
ANNUAL MEAN	131		162		a86.6	
HIGHEST ANNUAL MEAN					249 1999	
LOWEST ANNUAL MEAN					18.4 1977	
HIGHEST DAILY MEAN	2,540	Apr 1	2,010	Apr 2	4,360	Apr 14, 1965
LOWEST DAILY MEAN	9.3	Jan 30	25	Oct 13-15, Aug 16	1.0	Jan 17, 1962
ANNUAL SEVEN-DAY MINIMUM	9.5	Jan 28	26	Oct 10	1.1	Jan 12, 1962
MAXIMUM PEAK FLOW			b2,140	Apr 2	c4,560	Apr 14, 1965
MAXIMUM PEAK STAGE			d16.51	Jun 18	d39.40	Apr 20, 1997
ANNUAL RUNOFF (AC-FT)	95,370		117,600		62,720	
ANNUAL RUNOFF (CFSM)	0.313		0.387		0.206	
ANNUAL RUNOFF (INCHES)	4.26		5.25		2.80	
10 PERCENT EXCEEDS	290		383		168	
50 PERCENT EXCEEDS	40		72		26	
90 PERCENT EXCEEDS	13		29		9.2	

- a Median of annual mean discharges is 67 ft³/s.
- b Gage-height, 13.79 ft.
- c Gage-height, 17.81 ft, site and datum then in use.
- d Backwater from Red River of the North.
- e Estimated.

