

RED RIVER OF THE NORTH BASIN--Continued

05069000 SAND HILL RIVER AT CLIMAX, MN

LOCATION.--Lat 47°36'43", long 96°48'52", in NE¹/₄NE¹/₄ 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 good except those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	75	e60	e39	e28	e110	103	86	60	e370	39	36
2	167	76	e60	e39	e27	e110	99	83	59	e310	38	35
3	165	73	e57	e39	e27	e100	101	81	56	e280	36	36
4	176	74	e54	e38	e27	e90	99	82	57	257	37	37
5	178	74	e48	e38	e26	e82	102	80	51	286	38	34
6	172	74	e44	e38	e26	e79	121	77	48	247	37	33
7	166	71	e38	e38	e25	e73	130	78	45	476	35	35
8	154	70	e40	e37	e25	e64	131	77	43	874	32	34
9	154	69	e43	e37	e25	e62	135	88	40	520	31	32
10	145	68	e47	e36	e24	e62	131	90	35	344	31	30
11	131	66	e50	e36	e24	e60	117	94	36	247	29	30
12	121	65	e53	e35	e23	e58	105	94	34	215	28	28
13	117	65	e56	e35	e23	e53	99	93	34	171	31	27
14	114	65	e56	e34	e23	e47	100	91	47	139	34	27
15	107	64	e52	e34	e22	e43	97	84	83	116	72	27
16	102	64	e45	e33	e22	e39	99	82	178	98	60	26
17	96	64	e42	e33	e22	37	102	78	119	86	64	25
18	94	64	e41	e32	e22	37	118	74	101	76	69	25
19	94	64	e43	e32	e23	62	130	70	98	70	77	24
20	92	66	e43	e32	e23	57	128	68	292	68	82	24
21	89	63	e42	e31	e24	61	118	67	410	69	80	27
22	90	68	e42	e31	e25	83	109	65	e500	62	73	33
23	90	68	e42	e31	e30	108	101	63	e600	56	63	43
24	86	65	e41	e30	e41	113	94	61	e700	54	54	42
25	85	e64	e41	e30	e60	153	90	59	e740	51	49	40
26	85	e63	e40	e30	e80	192	93	55	e740	50	46	39
27	82	e62	e40	e30	e100	211	89	54	e720	48	43	37
28	81	e62	e40	e29	e110	204	86	51	e660	45	41	38
29	80	e60	e39	e29	e110	181	86	53	e580	42	39	45
30	80	e58	e39	e29	---	145	85	57	e470	40	37	44
31	78	---	e39	e28	---	116	---	60	---	39	36	---
TOTAL	3645	2004	1417	1043	1067	2892	3198	2295	7636	5806	1461	993
MEAN	118	66.8	45.7	33.6	36.8	93.3	107	74.0	255	187	47.1	33.1
MAX	178	76	60	39	110	211	135	94	740	874	82	45
MIN	78	58	38	28	22	37	85	51	34	39	28	24
AC-FT	7230	3970	2810	2070	2120	5740	6340	4550	15150	11520	2900	1970
CFSM	.28	.16	.11	.08	.09	.22	.25	.18	.61	.45	.11	.08
IN.	.32	.18	.13	.09	.09	.26	.28	.20	.68	.51	.13	.09

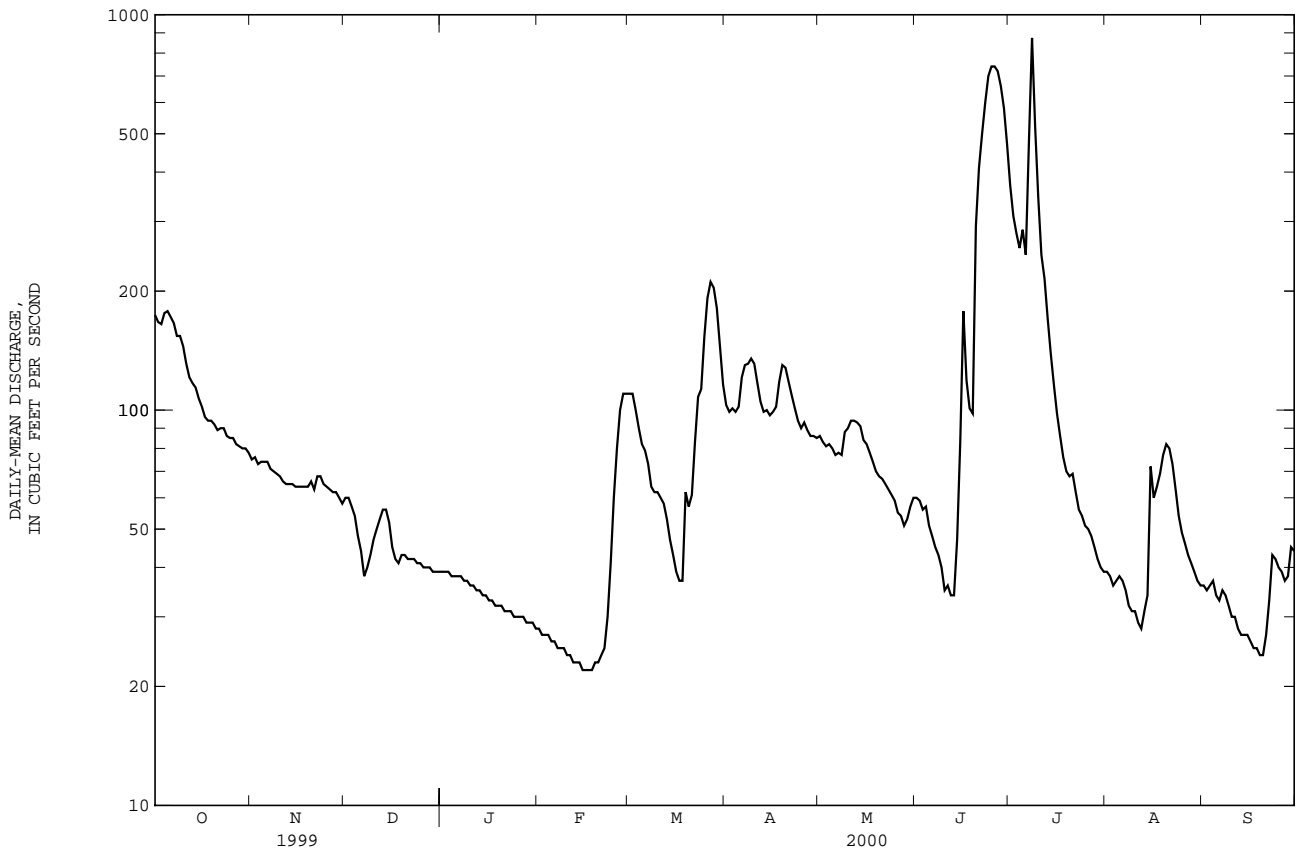
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2000, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	38.4	30.5	19.6	14.3	17.0	95.9	380	133	103	83.9	40.3	33.2
MAX	223	209	58.0	33.6	183	610	1568	1156	596	478	426	374
(WY)	1972	1972	1999	2000	1998	1999	1997	1950	1984	1997	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 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1943 - 2000	
ANNUAL TOTAL	91861		33457		82.6 ^a	
ANNUAL MEAN	252		91.4		249	
HIGHEST ANNUAL MEAN					18.4	
LOWEST ANNUAL MEAN					1977	
HIGHEST DAILY MEAN	3680	Mar 31	874	Jul 8	4360	Apr 14 1965
LOWEST DAILY MEAN	28	Jan 7	22	Feb 15	1.0	Jan 17 1962
ANNUAL SEVEN-DAY MINIMUM	28	Jan 5	22	Feb 12	1.1	Jan 12 1962
INSTANTANEOUS PEAK FLOW			1160 ^b		4560 ^c	
INSTANTANEOUS PEAK STAGE			16.24 ^d		39.40 ^d	
ANNUAL RUNOFF (AC-FT)	182200		66360		59840	
ANNUAL RUNOFF (CFSM)	.60		.22		.20	
ANNUAL RUNOFF (INCHES)	8.14		2.96		2.67	
10 PERCENT EXCEEDS	483		157		167	
50 PERCENT EXCEEDS	99		62		25	
90 PERCENT EXCEEDS	34		29		9.0	

a Median of annual mean discharges is 64 ft³/s.
 b Gage-height, 10.91 ft.
 c Gage-height, 17.81 ft., site and datum then in use.
 d Backwater from Red River of the North.
 e Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1966, 1975, 1979, 1991, 2000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
SEP	08...	33	602	8.4	15.5	58	8.9	60	100