

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

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	56	e30	e23	e39	e28	e185	79	84	553	161	646
2	22	e66	e32	e23	e41	e28	e175	77	113	471	144	e700
3	21	e75	e33	e24	e43	e27	e170	68	119	409	130	e604
4	21	e90	e31	e25	e44	e27	e160	62	103	362	117	e545
5	21	99	e30	e25	e44	e27	e150	60	78	325	105	497
6	21	101	e30	e26	e44	e27	e145	60	62	285	94	423
7	21	87	e29	e27	e43	e27	e140	63	55	263	87	351
8	21	79	e28	e28	e42	e27	e135	74	50	246	82	297
9	37	e74	e28	e28	e41	e26	e130	142	996	226	79	253
10	49	e71	e28	e29	e40	e26	e128	183	2120	2480	77	217
11	36	e69	e28	e29	e39	e26	e124	170	1070	3360	72	190
12	29	e66	e27	e29	e39	e26	133	164	894	e3000	73	171
13	27	e64	e27	e29	e38	e26	154	160	1150	e2200	75	156
14	36	e61	e26	e29	e37	e26	144	159	1320	e1700	70	142
15	43	e58	e25	e28	e36	e26	114	137	1090	e1300	68	130
16	47	e57	e25	e27	e35	e26	106	119	768	e900	72	119
17	46	e55	e25	e27	e34	e26	97	105	564	e500	77	113
18	38	e52	e24	e26	e33	e26	96	96	451	428	83	106
19	32	48	e24	e25	e33	e26	106	86	446	365	75	100
20	29	42	e23	e24	e32	e26	113	77	358	319	72	94
21	27	40	e23	e24	e32	e27	103	74	315	286	70	88
22	25	38	e23	e23	e31	e29	97	68	384	263	68	84
23	24	38	e22	e23	e31	e32	89	64	1220	239	74	82
24	30	41	e22	e23	e30	e39	81	65	1200	218	84	82
25	17	39	e22	e23	e30	e48	81	60	932	192	86	80
26	42	29	e22	e24	e29	e65	76	58	1180	180	80	78
27	44	22	e22	e25	e29	e85	e78	60	1160	160	76	75
28	43	23	e22	e26	e29	e110	e81	59	973	147	172	74
29	47	e26	e23	e28	---	e140	83	60	781	135	e212	74
30	49	e29	e23	e31	---	e200	84	59	648	127	188	74
31	49	---	e23	e35	---	e195	---	57	---	154	522	---
TOTAL	1016	1695	800	816	1018	1500	3558	2825	20684	21793	3445	6645
MEAN	32.77	56.50	25.81	26.32	36.36	48.39	118.6	91.13	689.5	703.0	111.1	221.5
MAX	49	101	33	35	44	200	185	183	2120	3360	522	700
MIN	17	22	22	23	29	26	76	57	50	127	68	74
AC-FT	2020	3360	1590	1620	2020	2980	7060	5600	41030	43230	6830	13180
CFSM	0.08	0.13	0.06	0.06	0.09	0.12	0.28	0.22	1.64	1.67	0.26	0.53
IN.	0.09	0.15	0.07	0.07	0.09	0.13	0.32	0.25	1.83	1.93	0.31	0.59

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	38.55	35.28	20.21	14.91	17.66	94.42	382.9	132.9	112.6	93.42	41.51	36.53
MAX	223	284	58.0	36.8	183	610	1568	1156	689	703	426	374
(WY)	1972	2001	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

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1943 - 2002

ANNUAL TOTAL	43405	65795	
ANNUAL MEAN	118.9	180.3	85.44a
HIGHEST ANNUAL MEAN			249 1999
LOWEST ANNUAL MEAN			18.4 1977
HIGHEST DAILY MEAN	3400	Apr 10	3360 Jul 11 4360 Apr 14 1965
LOWEST DAILY MEAN	17	Oct 25	17 Oct 25 1.0 Jan 17 1962
ANNUAL SEVEN-DAY MINIMUM	21	Oct 2	21 Oct 2 1.1 Jan 12 1962
MAXIMUM PEAK FLOW			3530 Jul 10 4560b Apr 14 1965
MAXIMUM PEAK STAGE			16.62 Jul 10 39.40c Apr 20 1997
ANNUAL RUNOFF (AC-FT)	86090	130500	61890
ANNUAL RUNOFF (CFSM)	0.28	0.43	0.20
ANNUAL RUNOFF (INCHES)	3.84	5.83	2.76
10 PERCENT EXCEEDS	216	425	165
50 PERCENT EXCEEDS	38	66	25
90 PERCENT EXCEEDS	24	25	9.0

- a Median of annual mean discharges is 65 ft³/s.
- b Gage-height, 17.81 ft, site and datum then in use.
- c Backwater from Red River of the North.
- e Estimated.

