

RED RIVER OF THE NORTH BASIN

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, ND

LOCATION.--Lat 4755'38", long 9701'34", in sec. 2, T.151 N., R.50 W., Grand Forks County, Hydrologic Unit 09020301, on the right bank 200 ft upstream from the DeMers Avenue bridge, 0.4 mi downstream from Red Lake River, and at mile 297.6.

DRAINAGE AREA.--30,100 mi², approximately, including 3,800 mi² in closed basins.

PERIOD OF RECORD.--April 1882 to current year. Prior to January 1904 monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 855: 1936(M). WSP 1115: 1942. WSP 1175: 1897(M). WSP 1388: 1904, 1914-15, 1917-19, 1921-22, 1927, 1950. WSP 1728: Drainage area. WRD-ND-81-1: 1882, 1897 (M).

GAGE.--Water-stage recorder. Datum of gage is 779.00 ft above sea level. Oct. 1, 1983 to Sept. 30, 1986, datum of gage was 780.00 ft at same site. Apr. 14, 1965 to Sept. 30, 1983, water-stage recorder 1.9 mi downstream at a datum of 778.35 ft. Nov. 3, 1933 to Apr. 13, 1965, water-stage recorder 0.3 mi upstream at 778.35 ft datum. See WSP 1728 or 1913 for history of changes prior to Nov. 3, 1933.

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

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2150	3060	2740	e2000	e2200	e23000	e13700	4430	7540	18700	4260	3220
2	2120	3050	2750	e1930	e2150	e27000	e13800	4410	7260	18800	4080	2990
3	2120	3190	2800	e1800	e2100	e28500	e13100	4240	7020	18900	3860	2620
4	2090	3120	2830	e1700	e2100	e29000	e12700	3950	6770	19000	3710	2380
5	2060	3000	2710	e1700	e2100	e28000	e12500	3820	6510	19100	3620	2330
6	2070	3020	2610	e1690	e2100	e25000	e12000	3710	6210	18900	3540	2280
7	2070	3090	2500	e1690	e2100	e22000	e11200	3570	5870	18100	3460	2170
8	2140	3070	2550	e1700	e2100	e19000	e10700	3480	5510	17000	3370	2210

9	2360	3100	2580	e1700	e2150	e15500	e10700	3450	5240	16900	3280	2160
10	2380	3140	2610	e1800	e2150	e13000	e10700	3450	5030	17200	3160	2110
11	2650	3120	2690	e1820	e2150	e11200	e10500	3500	4850	17100	2990	2080
12	2750	2500	2750	e1800	e2150	e10000	e10000	3500	4640	16800	2840	2100
13	2720	2120	2810	e1700	e2150	e9200	e9600	4210	4500	16400	2770	2110
14	2830	1880	2860	e1700	e2100	e8500	9440	9440	4430	15700	2740	2110
15	3510	1880	2950	e1700	e2100	e8000	9650	14100	4620	14600	2750	2040
16	4470	2250	2910	e1800	e2100	e7600	9980	16600	5000	13900	2700	2030
17	4660	2250	2870	e1800	e2100	e7400	9510	19700	5180	12900	2690	1960
18	4560	2340	2850	e1900	e2100	e7300	9500	23200	5180	11800	2670	1890
19	4260	2520	2830	e1900	e2200	e7400	8680	26400	5430	10500	2700	1900
20	4220	2740	2850	e1900	e2400	e7400	7690	28700	7410	8820	2660	1860
21	4040	2740	2800	e1950	e2650	e7600	7190	29600	13100	7870	2610	1870
22	3900	2740	2660	e1950	e3000	e7800	6610	29000	17200	7500	2620	1800
23	3750	2620	2590	e2000	e3500	e8600	5930	27600	18400	7410	2570	1710
24	3640	2590	2540	e2100	e4500	e9700	5530	25800	15700	7190	2550	1720
25	3540	2530	2490	e2100	e6100	e10800	5230	23400	13700	6860	2510	1760
26	3430	2690	2440	e2100	e8000	e11500	4960	20400	13600	6560	2330	1780
27	3320	2980	2330	e2100	e11000	e11800	4760	17500	14500	6160	2260	1690
28	3190	3080	2360	e2100	e17000	e12000	4580	14300	15800	5690	2330	1590
29	3170	2970	e2250	e2150	---	e12000	4490	11900	17500	5250	2470	1560
30	3100	2840	e2190	e2150	---	e12500	4470	9950	18500	4920	2790	1580
31	3070	---	e2100	e2200	---	e13500	---	8420	---	4590	3230	---
TOTAL	96340	82220	81800	58630	98550	431800	269400	405730	272200	391120	92120	61610
MEAN	3108	2741	2639	1891	3520	13930	8980	13090	9073	12620	2972	2054
MAX	4660	3190	2950	2200	17000	29000	13800	29600	18500	19100	4260	3220
MIN	2060	1880	2100	1690	2100	7300	4470	3450	4430	4590	2260	1560
AC-FT	191100	163100	162300	116300	195500	856500	534400	804800	539900	775800	182700	122200
CFSM	.12	.10	.10	.07	.13	.53	.34	.50	.34	.48	.11	.08
IN.	.14	.12	.12	.08	.14	.61	.38	.57	.39	.55	.13	.09

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1423	1216	990	839	826	2641	9957	5404	3998	3483	1775	1444
MAX	5127	5207	3052	2030	3520	15370	56210	36500	19250	25230	17050	6251
(WY)	1995	1972	1972	1996	1998	1995	1997	1950	1962	1975	1993	1993
MIN	12.1	30.5	17.8	18.8	2.87	42.1	954	373	151	88.5	30.6	20.3
(WY)	1937	1937	1937	1937	1937	1937	1938	1934	1934	1936	1934	1936

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1904 - 1998		
ANNUAL TOTAL	3752130		2341520				
ANNUAL MEAN	10280		6415		2816		
HIGHEST ANNUAL MEAN					10070		1997
LOWEST ANNUAL MEAN					244		1934
HIGHEST DAILY MEAN	127000	Apr 18	29600	May 21	127000	Apr 18	1997
LOWEST DAILY MEAN	1680	Jan 25	1560	Sep 29	1.8	Sep 2	1977
ANNUAL SEVEN-DAY MINIMUM	1740	Jan 20	1670	Sep 24	2.5	Feb 12	1937
INSTANTANEOUS PEAK FLOW			29700	May 21	137000a	Apr 18	1997
INSTANTANEOUS PEAK STAGE			39.84	May 4	54.35b	Apr 22	1997
ANNUAL RUNOFF (AC-FT)	7442000		4644000		2040000		
ANNUAL RUNOFF (CFSM)	.39		.24		.11		
ANNUAL RUNOFF (INCHES)	5.31		3.31		1.45		
10 PERCENT	26300		16700		6200		

EXCEEDS							
50 PERCENT EXCEEDS	2840		3220		1400		
90 PERCENT EXCEEDS	1880		1960		280		

a Maximum observed, affected by breakout flow from the Red River about 20 river miles upstream of gage that re-entered by way of the Red Lake River about 2 river miles upstream of the gage.

b From floodmarks.

