

RED RIVER OF THE NORTH BASIN--Continued

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, ND

LOCATION.--Lat 47°55'39", long 97°01'40", in sec.2, T.151 N., R.50 W., Polk County, MN, Hydrologic Unit 09020301, on right bank 30 ft downstream 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 National Geodetic Vertical Datum of 1929. 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 for periods of estimated discharge, 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	5910	e3750	e3200	e2300	e1700	e3500	6730	5000	3260	27400	4580	e2100
2	5610	e3700	e3400	e2250	e1700	e4500	6210	4900	3270	25700	5180	e2300
3	5230	e3700	e3500	e2250	e1700	e6000	5860	4780	3210	23600	4570	e2500
4	5040	3680	e3500	e2250	e1700	e7200	5660	4700	3160	20900	3780	e3000
5	4890	e3650	e3300	e2250	e1700	e8200	5710	4650	3090	17500	3530	e4300
6	4760	e3700	e2800	e2200	e1700	e8900	5750	4550	3110	13200	3290	e5000
7	4560	3760	2460	e2200	e1700	e9200	5720	4470	3170	9740	3120	e5000
8	4440	e3730	2190	e2200	e1700	e9800	5720	4380	3190	9670	3210	e4700
9	4420	3700	2230	e2200	e1700	e10200	5740	4160	3240	12600	2970	e4000
10	4590	3750	2420	e2200	e1700	e10500	5610	4100	3250	14800	2880	e3400
11	4620	3940	2540	e2150	e1700	e10500	5450	4100	3190	15400	e2700	e3000
12	4620	3770	2690	e2100	e1700	e10200	5260	4160	3090	14800	e2600	e2700
13	4610	3690	2790	e2100	e1700	e10000	5140	4160	3070	13300	e2500	e2500
14	4570	3750	2990	e2050	e1700	e9500	5090	4170	3100	11400	e2450	e2300
15	4530	3780	3040	e2050	e1700	e9000	5060	4230	2990	9670	e2450	e2200
16	4500	3800	e2650	e2000	e1680	e8200	5030	4220	3320	7900	e2500	e2100
17	4470	3840	2460	e2000	e1680	e7200	5020	4210	3820	7010	e2650	e2100
18	4440	3910	2350	e2000	e1680	6540	5090	4250	4560	6600	e2750	e2100
19	4390	3950	2200	e2000	e1680	6070	5170	4180	5980	6180	e2750	e2100
20	4340	3960	2130	e1950	e1680	5680	5130	4100	7940	5820	e2700	e2100
21	4200	3950	1970	e1950	e1680	5370	5060	4020	13200	5470	2660	e2100
22	4150	3960	1930	e1900	e1750	5480	5010	3890	20400	5160	2500	e2100
23	4140	3980	1970	e1900	e1850	6110	5030	3750	25100	4990	2420	e2100
24	4130	3950	e2000	e1850	e1900	6510	5140	3660	28400	4860	2420	e2100
25	4050	3950	e2200	e1850	e2000	7150	5320	3610	30600	4720	2390	e2150
26	4000	3930	e2400	e1800	e2250	8870	5420	3540	31400	4520	2370	e2350
27	3900	3860	e2500	e1800	e2500	10600	5440	3460	31300	4410	2230	e2600
28	3830	3780	e2500	e1750	e3000	11200	5350	3460	30800	4310	2180	e2950
29	3740	3160	e2450	e1750	e3250	10000	5240	3400	29900	4210	e2150	e3000
30	3730	2980	e2400	e1700	---	8570	5110	3360	28800	4140	e2150	e2900
31	3750	---	e2350	e1700	---	7420	---	3300	---	4180	e2100	---
TOTAL	138160	113010	79510	62650	54080	248170	162270	126920	342910	324160	88730	83850
MEAN	4457	3767	2565	2021	1865	8005	5409	4094	11430	10460	2862	2795
MAX	5910	3980	3500	2300	3250	11200	6730	5000	31400	27400	5180	5000
MIN	3730	2980	1930	1700	1680	3500	5010	3300	2990	4140	2100	2100
AC-FT	274000	224200	157700	124300	107300	492200	321900	251700	680200	643000	176000	166300

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2000, BY WATER YEAR (WY)

MEAN	1477	1266	1037	864	848	2790	10070	5507	4140	3592	1825	1563
MAX	5127	5218	3571	2030	3520	15370	56210	36510	19340	25270	17050	11340
(WY)	1995	1972	1999	1996	1998	1995	1997	1950	1962	1975	1993	1999
MIN	12.1	30.5	17.8	18.8	2.87	42.1	954	373	151	88.8	30.6	20.3
(WY)	1937	1937	1937	1937	1937	1937	1938	1934	1934	1936	1934	1936

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1904 - 2000	
ANNUAL TOTAL	3079680		1824420			
ANNUAL MEAN	8437		4985		2899	
HIGHEST ANNUAL MEAN					10070	
LOWEST ANNUAL MEAN					244	
HIGHEST DAILY MEAN	49700	Apr 1	31400	Jun 26	127000	Apr 18 1997
LOWEST DAILY MEAN	1500	Feb 10	1680	Feb 16	1.8	Sep 2 1977
ANNUAL SEVEN-DAY MINIMUM	1510	Feb 8	1680	Feb 15	2.5	Feb 12 1937
INSTANTANEOUS PEAK FLOW			31500	Jun 26	137000 ^a	Apr 18 1997
INSTANTANEOUS PEAK STAGE			37.14	Jun 28	54.35 ^b	Apr 22 1997
ANNUAL RUNOFF (AC-FT)	6109000		3619000		2100000	
10 PERCENT EXCEEDS	20800		9060		6370	
50 PERCENT EXCEEDS	4930		3750		1400	
90 PERCENT EXCEEDS	1710		1950		281	

^a Maximum observed, affected by breakout from Red River of the North about 20 miles upstream of gage that entered Red Lake

River about 2 miles upstream of confluence with the Red River of the North.

^b From floodmark

^e Estimated

