

## 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 mi<sup>2</sup>, approximately, including 3,800 mi<sup>2</sup> 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.--Acoustic doppler velocity meter and 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 those for Nov. 27 to Jan. 17, which are fair and for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	536	653	494	e580	e430	e550	32,800	3,690	17,700	3,300	1,970	1,070
2	476	628	515	e590	e430	e557	31,100	3,440	21,200	3,320	1,730	1,020
3	429	676	526	e600	e440	e567	28,800	3,190	21,900	3,280	1,640	918
4	e405	665	502	e600	e450	e570	25,000	3,100	20,700	3,180	1,490	933
5	e385	637	617	e600	e455	e635	21,500	2,950	19,100	3,050	1,440	887
6	363	616	557	e590	e444	e700	16,700	2,830	17,600	3,100	1,340	1,040
7	376	615	519	e580	e444	e725	13,900	2,370	16,600	3,100	1,170	1,130
8	361	648	529	e570	e444	e760	11,700	2,240	15,400	3,160	1,180	3,500
9	373	646	e529	e560	e472	e800	10,300	2,090	14,700	3,540	1,430	4,760
10	405	563	e527	e550	e472	e830	9,820	2,000	13,200	3,410	e1,660	6,610
11	520	573	e524	e530	e472	e840	9,850	1,890	12,200	3,390	e1,670	6,290
12	566	648	e524	e520	e470	e850	9,860	2,670	11,000	e3,730	e1,660	5,430
13	640	673	506	e510	e455	e890	8,710	8,130	10,000	5,100	1,570	4,710
14	654	679	483	e500	e450	1,020	7,560	12,700	9,530	7,350	1,540	4,170
15	745	e687	459	e500	e455	e1,120	6,990	15,200	9,180	8,260	1,500	3,750
16	699	e695	e460	e500	e470	e1,240	6,830	14,700	8,840	8,250	1,480	3,290
17	593	702	462	e498	e470	e1,350	6,650	11,100	8,280	7,240	1,510	2,890
18	578	772	445	e498	e470	e1,480	6,640	9,650	7,740	6,210	1,170	2,600
19	535	791	428	e497	e470	e1,560	6,590	8,440	7,230	5,460	1,060	2,610
20	517	859	402	e497	e465	e1,710	6,490	7,670	6,870	4,830	1,050	2,700
21	541	977	434	e485	e460	e1,890	6,480	7,720	6,430	4,370	968	2,720
22	571	875	475	e477	e465	e2,240	6,450	7,740	6,150	3,910	957	2,800
23	625	e680	526	e493	e465	e2,650	6,450	6,990	5,680	3,490	873	3,170
24	653	429	532	e487	e481	e3,220	5,840	6,340	5,390	3,210	984	3,520
25	621	e530	524	e470	e499	e4,280	5,630	5,930	4,990	3,090	915	3,810
26	634	633	508	e460	e510	e7,680	5,280	5,520	4,730	2,850	1,410	4,660
27	606	646	516	e455	e523	15,400	4,860	5,450	4,440	2,680	1,660	5,620
28	603	611	e560	e450	e536	19,400	4,670	5,300	3,970	2,570	1,990	6,020
29	599	517	e580	e450	e543	29,100	4,570	5,150	3,670	2,420	1,870	5,690
30	593	460	e580	e445	---	31,200	4,050	5,840	3,460	2,210	1,450	5,960
31	579	---	e580	e435	---	32,900	---	12,100	---	2,130	1,390	---
TOTAL	16,781	19,784	15,823	15,977	13,610	168,714	332,070	194,130	317,880	125,190	43,727	104,278
MEAN	541	659	510	515	469	5,442	11,070	6,262	10,600	4,038	1,411	3,476
MAX	745	977	617	600	543	32,900	32,800	15,200	21,900	8,260	1,990	6,610
MIN	361	429	402	435	430	550	4,050	1,890	3,460	2,130	873	887
AC-FT	33,290	39,240	31,380	31,690	27,000	334,600	658,700	385,100	630,500	248,300	86,730	206,800

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2004, BY WATER YEAR (WY)

MEAN	1,495	1,376	1,077	891	870	2,813	10,230	5,590	4,378	3,782	1,888	1,623
MAX	5,127	9,971	3,832	2,656	3,520	15,370	56,210	36,510	19,340	25,270	17,050	11,340
(WY)	(1995)	(2001)	(2001)	(2001)	(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 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1904 - 2004	
ANNUAL TOTAL	816,997		1,367,964			
ANNUAL MEAN	2,238		3,738		2,986	
HIGHEST ANNUAL MEAN					10,070	1997
LOWEST ANNUAL MEAN					244	1934
HIGHEST DAILY MEAN	16,200	Jun 29	32,900	Mar 31	127,000	Apr 18, 1997
LOWEST DAILY MEAN	318	Sep 10	361	Oct 8	1.80	Sep 2, 1977
ANNUAL SEVEN-DAY MINIMUM	365	Sep 6	381	Oct 4	2.5	Feb 12, 1937
MAXIMUM PEAK FLOW			34,300	Apr 1	a137,000	Apr 18, 1997
MAXIMUM PEAK STAGE			38.34	Apr 1	b54.35	Apr 22, 1997
ANNUAL RUNOFF (AC-FT)	1,621,000		2,713,000		2,163,000	
10 PERCENT EXCEEDS	5,300		9,570		6,500	
50 PERCENT EXCEEDS	906		1,180		1,440	
90 PERCENT EXCEEDS	484		465		290	

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, ND—Continued

- a Maximum observed, affected by breakout from Red River of the North about 20 mi upstream of gage that entered Red Lake River about 2 mi upstream of confluence with the Red River of the North
- b From floodmark
- e Estimated

