

05133500 RAINY RIVER AT MANITOU RAPIDS, MN  
(International Gaging Station)

LOCATION.--Lat 48°38'04", long 93°54'47", in NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 36, T.160 N., R.26 W., Koochiching County, Hydrologic Unit 09030004, on left bank at Manitou Rapids, 4 mi west of Indus.

DRAINAGE AREA.--19,400 mi<sup>2</sup> (approximately).

PERIOD OF RECORD.--July 1928 to current year. Monthly discharge only for some periods, published in WSP 1308. October 1911 to October 1924 (gage heights only) at site near Birchdale in files of U.S. Army Corps of Engineers. Published as "near Birchdale" 1932-34.

GAGE.--Water-stage recorder. Datum of gage is 1,062.48 ft above sea level (NGVD of 1929). Prior to Nov. 10, 1934, nonrecording gage at site near Birchdale, 7 mi. downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diurnal fluctuation caused by power plants at International Falls. Some regulation at Rainy and Namakan Lakes affects low and medium flows.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15,700	30,400	15,600	e10,700	e11,400	e11,600	e10,500	25,800	46,300	33,200	12,900	5,410
2	14,700	33,700	14,800	e10,500	e11,400	e11,500	e13,000	23,300	43,900	32,800	12,800	5,350
3	14,200	36,300	14,700	e10,500	e11,400	e11,200	15,300	19,700	42,100	34,100	12,900	5,120
4	14,200	35,400	14,400	e10,400	e11,500	e10,400	17,200	18,300	40,800	35,700	12,700	4,980
5	12,600	34,100	14,300	e10,500	e11,500	e10,300	20,500	17,700	40,200	35,300	12,500	4,940
6	11,200	30,900	e14,400	e10,700	e11,500	e10,300	25,100	17,900	40,600	34,500	11,400	4,990
7	11,300	29,100	e14,500	e11,000	e11,500	e10,100	32,400	18,000	41,100	32,700	10,300	5,050
8	11,300	27,800	e14,400	e11,300	e11,400	e10,000	34,900	17,900	41,400	31,100	9,190	5,100
9	11,000	25,700	e14,300	e11,300	e11,000	e10,000	33,000	18,300	40,900	28,900	8,600	5,120
10	10,600	24,500	e12,900	e11,300	e10,500	e9,900	29,400	20,600	40,300	27,600	8,010	5,110
11	10,800	24,000	e12,700	e11,300	e10,300	e9,600	27,800	21,200	39,600	26,800	7,790	5,060
12	11,300	23,400	e12,600	e11,300	e10,100	e9,400	30,400	23,500	39,300	24,300	7,650	5,180
13	11,400	21,800	e12,600	e11,500	e10,000	e9,300	32,100	24,100	38,800	23,000	7,710	5,840
14	11,400	20,700	e12,600	e11,700	e10,100	e9,300	32,200	24,200	39,800	21,800	7,600	6,670
15	10,700	20,000	e12,800	e11,900	e10,100	e9,200	32,000	24,800	41,400	18,100	7,480	6,890
16	10,200	18,600	e12,900	e12,000	e10,100	e9,200	31,800	25,100	42,800	16,600	6,510	6,840
17	10,100	18,000	e12,700	e12,100	e10,200	e9,200	31,200	25,200	43,600	16,200	5,930	6,780
18	10,100	17,800	e12,900	e12,100	e10,300	e9,100	30,300	24,900	43,000	15,400	6,650	6,680
19	9,320	17,600	e12,600	e11,600	e10,500	e8,900	29,400	24,700	41,700	15,300	8,650	6,660
20	8,860	17,600	e12,600	e10,800	e10,700	e8,700	29,400	26,200	43,800	14,600	9,470	6,250
21	8,820	17,600	e12,600	e10,800	e10,700	e8,500	29,800	26,900	41,200	14,400	9,540	6,000
22	8,800	17,400	e12,600	e11,400	e10,800	e8,600	29,700	27,000	39,600	14,700	9,640	5,450
23	9,220	17,300	e12,300	e11,600	e11,000	e8,600	29,300	27,100	38,300	15,300	9,440	5,150
24	9,900	16,900	e12,000	e11,600	e11,200	e8,700	28,900	27,300	37,100	15,400	7,720	4,960
25	10,400	15,900	e11,800	e11,600	e11,200	e8,700	28,500	30,000	35,900	15,300	6,710	4,890
26	11,000	15,300	e11,400	e11,600	e11,100	e8,700	28,300	39,500	34,900	15,200	6,410	4,830
27	12,800	16,100	e11,400	e11,500	e11,100	e8,700	28,200	47,700	34,400	14,800	6,110	4,810
28	13,400	16,700	e11,200	e11,500	e11,000	e8,600	27,900	53,900	33,900	13,600	5,700	4,740
29	13,500	16,600	e10,800	e11,500	---	e8,600	27,100	55,800	33,500	13,200	5,550	4,810
30	17,000	16,200	e10,800	e11,500	---	e8,500	26,500	53,500	33,300	13,000	5,510	4,740
31	25,800	---	e10,700	e11,400	---	e8,400	---	49,600	---	13,000	5,450	---
TOTAL	371,620	673,400	398,900	350,500	303,600	291,800	822,100	879,700	1,193,500	675,900	264,520	164,400
MEAN	11,990	22,450	12,870	11,310	10,840	9,413	27,400	28,380	39,780	21,800	8,533	5,480
MAX	25,800	36,300	15,600	12,100	11,500	11,600	34,900	55,800	46,300	35,700	12,900	6,890
MIN	8,800	15,300	10,700	10,400	10,000	8,400	10,500	17,700	33,300	13,000	5,450	4,740
AC-FT	737,100	1,336,000	791,200	695,200	602,200	578,800	1,631,000	1,745,000	2,367,000	1,341,000	524,700	326,100
CFSM	0.62	1.16	0.66	0.58	0.56	0.49	1.41	1.46	2.05	1.12	0.44	0.28
IN.	0.71	1.29	0.76	0.67	0.58	0.56	1.58	1.69	2.29	1.30	0.51	0.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2005, BY WATER YEAR (WY)

MEAN	11,710	11,500	10,210	9,186	8,705	8,910	15,660	19,690	20,490	16,820	11,470	10,990
MAX	42,410	37,280	27,790	18,430	17,240	16,640	38,100	52,880	49,480	47,970	33,700	30,620
(WY)	(1942)	(1972)	(1972)	(1972)	(1969)	(1945)	(1966)	(1950)	(1950)	(1950)	(1944)	(1988)
MIN	4,131	3,796	3,190	2,900	3,129	2,926	4,378	4,106	3,676	3,483	3,422	3,746
(WY)	(2004)	(1977)	(1930)	(1931)	(1931)	(1931)	(1977)	(1977)	(1980)	(1980)	(1980)	(1998)

05133500 RAINY RIVER AT MANITOU RAPIDS, MN—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1929 - 2005	
ANNUAL TOTAL	5,248,220		6,389,940		12,960	
ANNUAL MEAN	14,340		17,510		4,470	
HIGHEST ANNUAL MEAN					23,260	1950
LOWEST ANNUAL MEAN					4,470	1931
HIGHEST DAILY MEAN	38,500	Jun 2	55,800	May 29	71,300	May 11, 1950
LOWEST DAILY MEAN	4,540	Aug 9	4,740	Sep 28, 30	928	Dec 26, 1929
ANNUAL SEVEN-DAY MINIMUM	4,670	Aug 17	4,830	Sep 24	1,500	Dec 24, 1929
MAXIMUM PEAK FLOW			56,200	May 29	71,600	May 12, 1950
MAXIMUM PEAK STAGE			17.87	May 29	21.04	May 12, 1950
ANNUAL RUNOFF (AC-FT)	10,410,000		12,670,000		9,388,000	
ANNUAL RUNOFF (CFSM)	0.739		0.902		0.668	
ANNUAL RUNOFF (INCHES)	10.06		12.25		9.08	
10 PERCENT EXCEEDS	26,600		34,900		25,700	
50 PERCENT EXCEEDS	12,600		12,600		10,300	
90 PERCENT EXCEEDS	5,320		6,700		5,000	

e Estimated.

