

# RAINY RIVER BASIN

## 05133500 RAINY RIVER AT MANITOU RAPIDS, MN

(International Gaging Station)

LOCATION.--Lat 4838'04", long 9354'47", in NW 1 / 4 SE 1 / 4 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. 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. Satellite telemeter at station. Diurnal fluctuation caused by power plant at International Falls. Some regulation at low and medium flows by Rainy and Namakan Lakes.

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

## 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	5310	5730	e5000	e7700	e4900	9200	6220	6920	7830	9750	5090	4110
2	5420	5490	e5050	e6100	e4800	10000	6800	6950	7500	9340	5100	3960
3	5550	5730	e5050	e6400	e6700	11900	7910	6610	7330	8870	5050	3870
4	5540	5900	e5000	e5300	e6900	12300	8900	6460	7190	8430	5010	3860
5	5530	5970	e5000	e5200	e7000	12300	9880	6760	6990	8160	4950	3850
6	5470	6060	e5050	e6300	e7100	12500	10000	6880	6870	7920	4930	3830
7	5420	6420	e5600	e7200	e7300	12600	9480	6650	6620	7670	4900	3790
8	5370	6610	e6600	e7700	e5600	11100	9230	6410	6400	7460	4870	3810

9	5410	6780	e9700	e8200	e5600	11100	9590	6230	6230	7260	4830	3610
10	5590	6840	e9700	e7800	e8200	12200	9900	5710	6100	7020	4850	3430
11	5510	6700	e9000	e5800	e8200	e11500	9870	5530	5970	6780	4830	3400
12	5540	6360	e10300	e5700	e8300	e9800	9620	6040	5880	6340	4760	3550
13	5700	6030	e8600	e7400	e8400	e8700	9350	6830	5830	5970	4750	3680
14	6000	5660	e5600	e7200	e8900	e8500	9440	7790	5780	6020	4740	3690
15	6420	5400	e6000	e7600	e7100	e6400	9830	8570	5670	5920	4770	3710
16	7030	5430	e7900	e7300	e7300	e6300	10200	13600	5560	5940	4680	3690
17	7300	e5500	e7700	e7200	9250	e7100	10300	17700	5500	5950	4590	3710
18	7080	e5400	e7400	e6100	8910	e7300	10100	18600	5450	5930	4520	3700
19	6630	e5300	e7200	e5700	8600	e7000	9160	17800	5620	5880	4560	3700
20	6500	e5300	e7000	e6400	8290	6250	8660	16500	5880	5840	4650	3650
21	6600	e5200	e5200	e6500	7820	5440	8800	14800	6780	5750	4680	3750
22	6480	e5200	e5100	e6700	6300	5210	8660	13000	8040	5650	4670	3770
23	6240	e5150	e7500	e6800	6370	5130	8390	11600	8340	5520	4620	3730
24	6020	e5100	e8200	e6700	8160	5160	8220	10600	8420	5480	4650	3720
25	5930	e5050	e8700	e5400	8660	5130	7890	9720	8400	5440	4240	3760
26	5560	e5000	e8200	e5300	8850	5170	7060	8990	7960	5420	3850	3810
27	5430	e4950	e8400	e7000	9350	5270	6810	8340	7410	5410	3950	3790
28	5620	e4900	e7600	e7400	9940	5370	7320	7930	7970	5370	4140	3810
29	5750	e4900	e6700	e8300	---	5590	7310	7770	9040	5320	4190	3830
30	5750	e4950	e7700	e7400	---	5780	7290	7950	9780	5230	4250	3800
31	5740	---	e7800	e6700	---	5980	---	7890	---	5100	4250	---
TOTAL	183440	169010	219550	208500	212800	253280	262190	293130	208340	202140	143920	112370
MEAN	5917	5634	7082	6726	7600	8170	8740	9456	6945	6521	4643	3746
MAX	7300	6840	10300	8300	9940	12600	10300	18600	9780	9750	5100	4110
MIN	5310	4900	5000	5200	4800	5130	6220	5530	5450	5100	3850	3400
AC-FT	363900	335200	435500	413600	422100	502400	520100	581400	413200	400900	285500	222900
CFSM	.31	.29	.37	.35	.39	.42	.45	.49	.36	.34	.24	.19
IN.	.35	.32	.42	.40	.41	.49	.50	.56	.40	.39	.28	.22

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11960	11410	10270	9196	8765	9014	15470	19550	19840	16480	11340	11040
MAX	42410	37280	27790	18430	17240	16640	38100	52880	49480	47970	33700	30620
(WY)	1942	1972	1972	1972	1969	1945	1966	1950	1950	1950	1944	1988
MIN	4728	3796	3190	2900	3129	2926	4378	4106	3676	3483	3422	3746
(WY)	1981	1977	1930	1931	1931	1931	1977	1977	1980	1980	1980	1998

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1929 - 1998		
ANNUAL TOTAL	4343040		2468670				
ANNUAL MEAN	11900		6763		12870		
HIGHEST ANNUAL MEAN					23260		1950
LOWEST ANNUAL MEAN					4470		1931
HIGHEST DAILY MEAN	40000	Apr 8	18600	May 18	71300	May 11	1950
LOWEST DAILY MEAN	4540	Sep 3	3400	Sep 11	928	Dec 26	1929
ANNUAL SEVEN-DAY MINIMUM	4760	Sep 12	3580	Sep 9	1500	Dec 24	1929
INSTANTANEOUS PEAK FLOW			18600	May 18	71600	May 12	1950
INSTANTANEOUS PEAK STAGE			8.51	May 18	21.04	May 12	1950
ANNUAL RUNOFF (AC-FT)	8614000		4897000		9327000		
ANNUAL RUNOFF (CFSM)	.61		.35		.66		
ANNUAL RUNOFF (INCHES)	8.33		4.73		9.02		
10 PERCENT	25300		9600		25300		

EXCEEDS							
50 PERCENT EXCEEDS	9360		6300		10300		
90 PERCENT EXCEEDS	5000		4250		5010		

