

05079000 RED LAKE RIVER AT CROOKSTON, MN

LOCATION.--Lat 47°46'32", long 96°36'33", in SW¹/₄SW¹/₄ sec. 30, T.150 N., R.46 W., Polk County, Hydrologic Unit 09020303, on right bank 100 ft upstream from Sargent Street bridge in Crookston, 0.3 mi downstream from Interstate Power Co.'s dam, 0.6 mi downstream from bridge on U.S. Highway 75, and 53 mi upstream from mouth.

DRAINAGE AREA.--5,270 mi².

PERIOD OF RECORD.--May 1901 to current year. Monthly discharge only for some periods, published in WSP 1308. Figures of daily discharge for Apr. 3-30, 1904, published in WSP 130, have been found unreliable and should not be used.

REVISED RECORDS.--WSP 1115: 1906, 1915-16, 1919-20, 1922, 1925, 1927, 1929. WSP 1308: 1916(M), 1919(M), 1928(M), 1930(M). (See also PERIOD OF RECORD).

GAGE.--Water-stage recorder. Datum of gage is 832.72 ft above sea level (NGVD of 1929). May 18, 1901 to June 30, 1909, nonrecording gage at bridge 300 ft upstream at same datum. July 1, 1909 to Sept. 25, 1911, nonrecording gage, Sept. 26, 1911 to Sept. 30, 1919, water-stage recorder, Oct. 1, 1919 to Sept. 30, 1930, nonrecording gage, at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diurnal fluctuation prior to 1975 caused by power plant 1,000 ft upstream. Runoff from 1,950 mi² in the headwaters of Red Lake River is completely controlled by dam at outlet of Lower Red Lake. Flow partially affected by occasional regulation at Thief and Mud Lakes in Thief River basin (see station 05076000).

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,210	1,100	e570	e360	e234	e222	948	1,290	463	1,730	326	165
2	1,220	1,080	e550	e350	e234	e222	1,010	1,270	468	1,320	298	171
3	1,220	1,180	e517	e340	e234	e221	918	1,240	487	1,130	312	195
4	1,220	1,180	e480	e330	e234	e221	604	896	491	979	303	133
5	1,210	1,240	e491	e320	e234	e220	545	662	483	872	295	119
6	1,200	1,260	e552	e310	e234	e220	592	631	482	802	292	131
7	1,180	1,250	e580	e295	e233	e220	545	623	512	740	291	134
8	1,260	1,240	e580	e285	e233	e220	556	595	561	669	301	89
9	1,130	e1,200	e580	e275	e232	e220	625	563	573	625	285	93
10	1,160	1,160	e578	e270	e230	e220	618	598	625	580	268	122
11	1,170	1,090	e575	e260	e230	e225	614	715	882	552	260	141
12	1,210	e950	e570	e250	e230	e230	590	783	1,190	537	250	154
13	1,240	765	e565	e245	e228	e250	472	730	1,370	506	250	156
14	1,230	598	e562	e242	e227	e270	443	681	1,240	515	229	166
15	1,150	473	e560	e240	e226	e320	459	606	1,130	517	229	165
16	e1,080	e470	e560	e240	e224	e430	470	538	918	524	211	168
17	e1,100	492	e560	e240	e224	e875	479	505	778	516	197	187
18	e1,080	745	e560	e240	e224	e2,000	506	486	680	519	190	209
19	1,070	1,080	e560	e238	e224	e3,000	526	524	644	512	186	172
20	e1,020	1,130	e560	e235	e224	e3,400	543	622	735	473	181	201
21	e1,020	1,150	e555	e235	e224	e3,200	585	786	788	447	168	186
22	e1,030	1,050	e550	e235	e224	e2,900	670	835	841	435	132	194
23	e1,040	992	e530	e235	e224	2,610	634	801	2,960	419	125	186
24	1,290	894	e500	e235	e224	2,050	597	732	3,220	402	144	169
25	1,390	697	e475	e235	e224	1,670	534	678	2,640	402	172	170
26	1,400	562	e460	e235	e222	1,140	498	618	3,570	403	183	175
27	1,400	469	e440	e235	e222	1,130	469	588	4,110	399	197	180
28	1,490	484	e430	e235	e222	1,080	462	540	3,580	392	185	184
29	1,530	e590	e420	e235	---	1,130	434	502	2,760	370	188	182
30	1,470	e600	e400	e235	---	1,110	878	484	2,150	337	190	147
31	1,290	---	e380	e235	---	935	---	475	---	346	173	---
TOTAL	37,710	27,171	16,250	8,150	6,379	32,161	17,824	21,597	41,331	18,970	7,011	4,844
MEAN	1,216	906	524	263	228	1,037	594	697	1,378	612	226	161
MAX	1,530	1,260	580	360	234	3,400	1,010	1,290	4,110	1,730	326	209
MIN	1,020	469	380	235	222	220	434	475	463	337	125	89
AC-FT	74,800	53,890	32,230	16,170	12,650	63,790	35,350	42,840	81,980	37,630	13,910	9,610
CFSM	0.23	0.17	0.10	0.05	0.04	0.20	0.11	0.13	0.26	0.12	0.04	0.03
IN.	0.27	0.19	0.11	0.06	0.05	0.23	0.13	0.15	0.29	0.13	0.05	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 2003, BY WATER YEAR (WY)

MEAN	865	755	604	530	512	1,020	3,103	2,143	1,753	1,399	887	880
MAX	2,836	3,620	1,900	1,663	1,778	4,257	11,870	15,290	7,205	6,851	3,868	5,408
(WY)	(1972)	(2001)	(1904)	(1951)	(1998)	(1995)	(1997)	(1950)	(1962)	(1975)	(1985)	(1999)
MIN	8.02	10.1	5.34	15.6	17.8	24.9	232	154	80.4	26.2	12.3	8.87
(WY)	(1937)	(1937)	(1937)	(1934)	(1937)	(1936)	(1981)	(1934)	(1934)	(1936)	(1934)	(1934)

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SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1901 - 2003	
ANNUAL TOTAL	740,601		239,398		1,201	
ANNUAL MEAN	2,029		656		83.6	
HIGHEST ANNUAL MEAN					3,129	1950
LOWEST ANNUAL MEAN					83.6	1934
HIGHEST DAILY MEAN	15,400	Jun 11	4,110	Jun 27	27,500	Apr 18, 1997
LOWEST DAILY MEAN	380	Dec 31	89	Sep 8	2.5	Sep 29, 1936
ANNUAL SEVEN-DAY MINIMUM	429	Dec 25	117	Sep 4	3.9	Sep 28, 1936
MAXIMUM PEAK FLOW			4,230	Jun 27	28,400	Apr 12, 1969
MAXIMUM PEAK STAGE			9.76	Jun 27	a28.40	Apr 17, 1997
INSTANTANEOUS LOW FLOW					b0.00	Jul 13, 1960
ANNUAL RUNOFF (AC-FT)	1,469,000		474,800		870,100	
ANNUAL RUNOFF (CFSM)	0.39		0.12		0.23	
ANNUAL RUNOFF (INCHES)	5.23		1.69		3.10	
10 PERCENT EXCEEDS	4,530		1,240		2,620	
50 PERCENT EXCEEDS	1,330		505		740	
90 PERCENT EXCEEDS	580		188		120	

- a From highwater mark, backwater from ice.
- b From regulation by power plant upstream.
- c Estimated.

