

05127000 KAWISHIWI RIVER NEAR WINTON, MN

LOCATION.--Lat 47°56'05", long 91°45'50", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 20, T.63 N., R.11 W., Lake County, Hydrologic Unit 09030001, Superior National Forest, at power plant of Minnesota Power Co., just upstream from Fall Lake, and 1.8 mi east of Winton.

DRAINAGE AREA.--1,230 mi².

PERIOD OF RECORD.--June 1905 to June 1907, October 1912 to September 1919 (fragmentary), September 1923 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WDR MN-77-1: Drainage area.

REMARKS.--No estimated daily discharges. Records fair. Daily discharge computed from power plant records. Flow regulated by power plant and by Camp Six, Bald Eagle, Gabbro, Little Gabbro, Birch, White Iron, South Farm, and Garden Lakes.

COOPERATION.--Records collected by Minnesota Power Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission project.

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	231	587	303	448	395	262	705	1,400	2,180	1,470	244	49
2	226	694	303	451	448	255	597	1,330	1,940	1,370	244	49
3	215	656	319	439	451	255	550	1,020	1,830	1,200	219	49
4	198	739	370	397	451	256	505	906	1,830	936	205	49
5	189	872	303	355	451	256	486	812	1,770	764	205	49
6	189	899	252	328	451	256	437	837	1,840	763	199	49
7	207	895	277	328	451	255	639	979	1,840	761	165	49
8	250	809	303	310	451	248	878	1,920	1,840	760	156	49
9	293	794	320	303	451	231	1,150	2,250	1,760	716	138	49
10	335	733	327	303	451	229	1,520	2,670	1,530	542	138	49
11	301	611	327	303	451	208	1,680	2,630	1,530	563	131	49
12	261	583	356	303	451	197	1,610	2,670	1,610	564	99	49
13	266	583	365	307	451	268	1,180	2,470	1,740	664	94	50
14	292	572	372	336	451	192	791	2,460	1,860	738	94	50
15	312	514	375	341	451	307	754	2,480	2,100	699	94	50
16	266	459	375	341	451	393	747	2,500	2,240	616	94	50
17	259	459	365	341	451	443	841	2,550	2,210	638	107	50
18	259	445	357	341	451	442	985	2,760	2,210	614	239	49
19	266	366	356	341	451	442	1,310	2,970	2,200	510	255	58
20	255	442	356	341	451	442	1,400	2,950	2,200	420	255	78
21	237	507	341	341	451	442	1,500	2,940	2,200	323	163	78
22	264	408	278	346	451	703	1,630	2,910	2,170	318	89	78
23	302	231	257	356	454	861	1,630	2,630	2,160	271	80	78
24	338	328	262	366	452	795	1,760	2,450	1,790	205	81	78
25	338	365	292	366	418	678	1,830	2,440	1,620	195	66	78
26	338	319	305	366	398	622	1,830	2,350	1,280	194	52	78
27	305	284	305	366	360	622	1,830	2,420	913	218	49	78
28	268	348	305	353	314	612	1,840	2,480	1,100	260	49	78
29	268	357	305	305	---	619	1,610	2,470	1,460	243	49	80
30	414	347	308	305	---	710	1,410	2,460	1,570	243	49	44
31	453	---	378	305	---	815	---	2,300	---	244	49	---
TOTAL	8,595	16,206	10,017	10,732	12,259	13,316	35,635	68,414	54,523	18,022	4,151	1,771
MEAN	277	540	323	346	438	430	1,188	2,207	1,817	581	134	59.0
MAX	453	899	378	451	454	861	1,840	2,970	2,240	1,470	255	80
MIN	189	231	252	303	314	192	437	812	913	194	49	44
AC-FT	17,050	32,140	19,870	21,290	24,320	26,410	70,680	135,700	108,100	35,750	8,230	3,510
CFSM	0.23	0.44	0.26	0.28	0.36	0.35	0.97	1.79	1.48	0.47	0.11	0.05
IN.	0.26	0.49	0.30	0.32	0.37	0.40	1.08	2.07	1.65	0.55	0.13	0.05
+	77.4	-22.5	-31.6	-54.9	-206	-50.3	333	-11.6	-25.2	-49.2	-39.8	-4.19
MEAN ‡	355	518	292	291	232	379	1,521	2,195	1,792	532	94.1	54.8
CFSM ‡	.29	.42	.24	.24	.19	.31	1.24	1.78	1.46	.43	.08	.04
IN ‡	.33	.47	.28	.28	.20	.36	1.38	2.05	1.63	.50	.09	.04

CAL YR 04 ‡TOTAL 265,537 MEAN ‡ 726 CFSM ‡ 0.59 IN ‡ 8.02

WTR YR 05 ‡TOTAL 251,346 MEAN ‡ 689 CFSM ‡ 0.56 IN ‡ 7.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2005, BY WATER YEAR (WY)

	870	754	591	452	350	379	1,216	3,060	1,882	1,150	680	716
MEAN	870	754	591	452	350	379	1,216	3,060	1,882	1,150	680	716
MAX	4,277	3,572	1,422	862	770	844	5,020	9,278	5,661	3,382	3,775	3,149
(WY)	(1947)	(1971)	(1983)	(1978)	(1927)	(1945)	(1945)	(1950)	(1968)	(1999)	(1988)	(1928)
MIN	66.5	8.97	76.1	80.3	74.5	103	19.3	111	519	217	51.7	38.1
(WY)	(1924)	(1924)	(1977)	(1977)	(1977)	(1924)	(1924)	(1924)	(1980)	(1961)	(1919)	(1919)

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SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1905 - 2005	
ANNUAL TOTAL	264,109		253,641			
ANNUAL MEAN	722		695		1,018	
HIGHEST ANNUAL MEAN					1,967	1950
LOWEST ANNUAL MEAN					240	1924
HIGHEST DAILY MEAN	3,180	Apr 28	2,970	May 19	16,000	May 18, 1950
LOWEST DAILY MEAN	117	Aug 7,8,26-30	44	Sep 30	a0.00	Aug 24, 1905
ANNUAL SEVEN-DAY MINIMUM	120	Aug 25	49	Aug 27	0.00	Oct 13, 1923
ANNUAL RUNOFF (AC-FT)	523,900		503,100		737,200	
ANNUAL RUNOFF (CFSM)	0.587		0.565		0.827	
ANNUAL RUNOFF (INCHES)	7.99		7.67		11.24	
10 PERCENT EXCEEDS	2,040		1,850		2,400	
50 PERCENT EXCEEDS	440		375		595	
90 PERCENT EXCEEDS	205		79		199	

+ Change in contents, equivalent in cubic feet per second, in Camp Six, Bald Eagle, Gabbro, Little Gabbro, Birch, White Iron, Farm, South Farm, and Garden Lakes.

++Adjusted for change in reservoir contents.

a Many days, several years.

