

STREAMS TRIBUTARY TO LAKE SUPERIOR

04010500 PIGEON RIVER AT MIDDLE FALLS, NEAR GRAND PORTAGE, MN

LOCATION.--Lat 48°00'44", long 89°36'58", in SW¹/₄NE¹/₄ sec. 24, T.64 N., R.6 E., Cook County, Hydrologic Unit 04010101, on the Grand Portage Indian Reservation, on right bank 400 ft upstream from Middle Falls, 2.5 mi upstream from Grand Portage Port of Entry, 3.5 mi upstream from mouth, and 4.7 mi northeast of city of Grand Portage.

DRAINAGE AREA.--609 mi².

PERIOD OF RECORD.--June to October 1921, April to November 1922, March 1923 to current year. Published as "at International Bridge" April 1924 to September 1940; as "below International Bridge" October 1940 to September 1965. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 744:1927-28. WSP 804: 1934(M). WSP 974: Drainage area. WSP 1337:1924(M), 1925, 1926-28(M), 1931(M), 1938(M), 1941(M), 1945-46(M), 1947, 1948(M), 1950(M).

GAGE.--Water-stage recorder. Datum of gage is 787.58 ft above sea level (NGVD of 1929). Prior to Sept. 30, 1940, nonrecording gage at International Bridge, 5.8 mi upstream at datum 102.24 ft higher. Oct. 1, 1940 to Dec. 31, 1975, at present site at datum 2.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 14	(daily)	e3,200	--	Apr 24	2200	*5,880	*10.41

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	66	e94	e65	e88	e88	e155	4400	1470	385	416	225
2	64	293	e89	e66	e88	e88	e160	4360	1540	371	625	218
3	60	418	e85	e66	e89	e88	e167	4080	1600	340	530	210
4	57	350	e82	e67	e89	e89	e172	3700	1500	319	432	202
5	54	296	e80	e68	e89	e90	e185	3370	1360	304	370	194
6	53	258	e79	e69	e89	e91	e225	3110	1250	299	333	185
7	53	908	e78	e70	e90	e93	e600	2980	1150	292	305	203
8	55	1010	e77	e71	e90	e94	e1400	2870	1060	283	300	228
9	55	786	e76	e72	e90	e96	e1700	2700	994	271	334	242
10	50	620	e75	e73	e90	e98	e1550	2510	937	257	359	239
11	48	514	e74	e74	e91	e100	e1750	2340	881	246	351	226
12	48	449	e74	e76	e91	e103	e2000	2190	829	234	319	211
13	48	403	e73	e77	e91	e106	e2500	2040	913	220	285	196
14	59	366	e72	e78	e91	e108	e3200	1930	1020	208	264	184
15	64	334	e72	e79	e90	e110	e3100	1850	1010	235	295	173
16	63	e290	e71	e79	e90	e112	e2850	1850	940	523	353	162
17	62	e260	e70	e80	e89	e114	2590	1770	873	610	487	157
18	62	e225	e70	e81	e89	e116	2410	1670	790	448	721	151
19	61	e193	e70	e82	e88	e119	2560	1560	733	388	735	147
20	59	e160	e70	e82	e88	e121	2850	1450	688	363	595	140
21	57	e130	e70	e83	e88	e123	3170	1560	655	331	489	134
22	55	e127	e70	e83	e88	e126	3950	2140	618	303	421	129
23	54	e138	e68	e84	e88	e127	5400	2060	587	283	377	127
24	52	e144	e68	e84	e87	e129	5530	1820	558	263	341	124
25	53	e140	e67	e85	e87	e132	5690	1790	525	248	315	119
26	55	e131	e66	e85	e86	e136	5710	2160	498	236	284	115
27	56	e122	e66	e86	e86	e138	5660	2130	476	217	266	110
28	57	e113	e66	e86	e87	e141	5260	1940	449	200	252	107
29	58	e106	e66	e87	---	e145	4750	2000	421	194	240	102
30	58	e99	e65	e87	---	e147	4490	1870	402	193	240	96
31	59	---	e64	e88	---	e150	---	1640	---	202	230	---
TOTAL	1756	9449	2267	2413	2487	3518	81734	73840	26727	9266	11864	5056
MEAN	56.6	315	73.1	77.8	88.8	113	2724	2382	891	299	383	169
MAX	67	1010	94	88	91	150	5710	4400	1600	610	735	242
MIN	48	66	64	65	86	88	155	1450	402	193	230	96
AC-FT	3480	18740	4500	4790	4930	6980	162100	146500	53010	18380	23530	10030
CFSM	.09	.52	.12	.13	.15	.19	4.47	3.91	1.46	.49	.63	.28
IN.	.11	.58	.14	.15	.15	.21	4.99	4.51	1.63	.57	.72	.31

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	361	355	207	151	126	176	1208	1615	841	420	242	289
MAX	2095	1461	720	431	300	1169	2724	4016	2801	1127	1029	2985
(WY)	1978	1971	1978	1975	1969	1945	2001	1950	1947	1968	1950	1977
MIN	17.4	11.4	2.85	2.18	8.02	60.0	290	138	125	78.0	46.5	40.2
(WY)	1977	1977	1977	1977	1977	1941	1977	1977	1977	1958	1998	1976

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1921 - 2001
ANNUAL TOTAL	123020	230377	
ANNUAL MEAN	336	631	502
HIGHEST ANNUAL MEAN			840
LOWEST ANNUAL MEAN			158
HIGHEST DAILY MEAN	2210	5710	10700
LOWEST DAILY MEAN	48	48	1.0a
ANNUAL SEVEN-DAY MINIMUM	51	51	1.0
MAXIMUM PEAK FLOW		5880	11000b
MAXIMUM PEAK STAGE		10.41	12.37c
INSTANTANEOUS LOW FLOW		47	1.0
ANNUAL RUNOFF (AC-FT)	244000	457000	363800
ANNUAL RUNOFF (CFM)	.55	1.04	.82
ANNUAL RUNOFF (INCHES)	7.51	14.07	11.20
10 PERCENT EXCEEDS	757	2000	1290
50 PERCENT EXCEEDS	194	172	223
90 PERCENT EXCEEDS	66	66	84

- a Minimum observed.
- b Gage height 7.60 ft, site and datum then in use.
- c At present site and datum, discharge 10,500 cfs.
- e Estimated.

