

**04063500 MENOMINEE RIVER AT TWIN FALLS NEAR IRON MOUNTAIN, MI**

Northwestern Lake Michigan Basin  
Menominee Subbasin

LOCATION.--Lat 45°52'17", long 88°04'12" referenced to North American Datum of 1927, in NE ¼ SE ¼ sec.12, T.40 N., R.31 W., Dickinson County, MI, Hydrologic Unit 04030108, on left bank 150 ft downstream from We Energies powerhouse at Twin Falls Dam, 3.6 mi north of Iron Mountain, and at mile 106.6.

DRAINAGE AREA.--1,800 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--January 1914 to current year. Published as "near Florence, WI", October 1957 to September 1989. Records published for both sites July 1950 to September 1957, October 1989 to September 1996, October 1998 to current year.

REVISED RECORDS.--WDR MI-91-1: 1990(M). WDR MI-92-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,061.05 ft above sea level. Prior to September 1957, headwater and tailwater gages and generation data entered hourly in daily log sheets by company employees. October 1957 to September 1989, water-stage recorder at site 10.4 mi upstream at different datum. November 1989 to July 1993, water-stage recorder at site 150 ft upstream at same datum.

COOPERATION.--Gage-height record was provided by We Energies, under general supervision of the U.S. Geological Survey.

REMARKS.--Records good. Prior to September 1957, discharge determined from powerplant records computed on basis of load-discharge rating of hydroelectric units and rating for tailwater gage during periods of spill; ratings developed by U.S. Geological Survey. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft, on Michigamme River, and by many smaller reservoirs upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

REVISIONS.--Revised daily discharges, in cubic feet per second, for high-water period in March 1990, revised monthly and yearly discharges are given below. These figures supersede those published in the report for 1990, 1991.

Daily Discharges

DATE	DISCHARGE (ft <sup>3</sup> /s)
Mar. 14	2,500
Mar. 15	3,500
Mar. 16	3,400
Mar. 17	3,060
Mar. 18	2,420

Monthly and Annual Discharges

MONTH/YEAR	TOTAL	MEAN	MAX
March 1990	46,828	1,511	3,500
Water Year 1990	427,621	1,172	3,500
Calendar Year 1990	457,979	1,255	3,500

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**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	542	1,440	990	927	1,360	1,270	961	635	430	974	1,160	929
2	592	1,470	1,030	1,010	1,360	1,330	987	648	461	915	1,060	940
3	587	1,310	1,120	957	1,290	1,240	987	629	483	824	1,640	1,030
4	627	1,200	1,010	1,070	1,370	1,300	949	628	462	686	1,640	988
5	722	1,210	953	1,150	1,360	1,250	950	680	571	692	1,400	958
6	1,160	1,080	969	1,040	1,290	1,310	942	693	644	994	1,450	951
7	1,880	1,080	984	1,110	1,300	1,300	937	735	601	1,360	1,320	1,400
8	1,190	1,080	959	1,060	1,250	1,310	893	683	586	1,950	1,260	1,410
9	1,140	1,060	893	1,020	1,290	1,590	1,180	638	1,010	1,930	1,090	1,310
10	989	1,100	951	1,050	1,300	1,540	879	608	1,230	1,440	1,000	1,490
11	888	1,010	918	1,120	1,180	1,620	819	e578	1,300	1,210	1,030	1,410
12	828	927	843	1,030	1,340	1,660	795	544	1,460	1,150	1,060	1,370
13	762	1,030	842	964	1,290	1,840	810	677	1,510	1,130	953	1,310
14	760	798	894	1,070	1,320	1,760	704	672	1,440	997	1,100	1,010
15	867	804	931	1,070	1,270	1,700	819	676	1,440	1,240	981	1,080
16	786	799	991	995	1,390	1,570	689	683	1,560	1,460	899	2,590
17	762	796	925	1,020	1,430	1,280	666	e699	1,310	1,370	872	3,210
18	791	787	1,030	955	1,440	1,100	734	714	1,120	1,290	861	2,760
19	832	794	1,060	1,060	1,350	906	727	624	865	1,350	958	2,110
20	734	841	1,110	986	1,320	948	620	555	864	1,320	1,130	1,790
21	814	861	1,020	1,080	1,330	954	617	615	742	1,220	1,690	2,100
22	950	868	1,020	994	1,250	1,080	587	571	858	931	1,430	2,250
23	1,180	913	991	980	1,320	1,070	572	573	733	1,050	1,550	2,460
24	1,770	916	1,010	990	1,260	1,080	577	546	1,110	875	1,530	4,120
25	1,480	1,000	1,080	1,090	1,310	1,120	584	575	1,130	926	1,270	3,960
26	1,540	1,010	1,040	981	1,290	1,060	654	556	1,050	916	1,350	4,340
27	1,530	1,010	1,070	1,190	1,310	1,010	644	512	1,170	866	1,220	3,910
28	1,770	937	1,040	1,120	1,280	1,020	641	437	1,250	2,300	1,130	2,750
29	1,550	947	987	1,290	---	1,010	611	424	1,280	2,220	912	2,410
30	1,610	958	1,010	1,410	---	941	504	435	1,000	1,510	898	2,290
31	1,410	---	1,030	1,270	---	948	---	409	---	1,390	951	---
<b>Total</b>	33,043	30,036	30,701	33,059	36,850	39,117	23,039	18,652	29,670	38,486	36,795	60,636
<b>Mean</b>	1,066	1,001	990	1,066	1,316	1,262	768	602	989	1,241	1,187	2,021
<b>Max</b>	1,880	1,470	1,120	1,410	1,440	1,840	1,180	735	1,560	2,300	1,690	4,340
<b>Min</b>	542	787	842	927	1,180	906	504	409	430	686	861	929

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2010, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	1,444	1,548	1,430	1,398	1,393	1,600	3,110	2,956	2,076	1,558	1,280	1,361
<b>Max</b>	3,537	3,465	2,640	2,253	2,514	3,544	8,159	6,319	5,035	4,309	2,359	3,149
<b>(WY)</b>	(1986)	(1986)	(1984)	(1983)	(1984)	(1973)	(1916)	(1960)	(1916)	(1953)	(1972)	(1968)
<b>Min</b>	611	725	765	691	647	692	707	595	799	721	527	612
<b>(WY)</b>	(2009)	(1964)	(1925)	(1924)	(1926)	(1914)	(1990)	(1987)	(1988)	(1925)	(2007)	(2007)

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SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1914 - 2010	
<b>Annual total</b>	395,831		410,084			
<b>Annual mean</b>	1,084		1,124		1,762	
<b>Highest annual mean</b>					3,069	1916
<b>Lowest annual mean</b>					922	1925
<b>Highest daily mean</b>	2,750	Apr 30	4,340	Sep 26	18,100	Apr 26, 1960
<b>Lowest daily mean</b>	474	Sep 29	409	May 31	57	Sep 26, 1975
<b>Annual seven-day minimum</b>	519	Sep 25	440	May 28	277	Oct 18, 1975
<b>Maximum peak flow</b>			4,380	Sep 26	<sup>a</sup> 19,500	Apr 26, 1960
<b>Maximum peak stage</b>			9.03	Sep 26	<sup>b</sup> 13.88	Apr 17, 2002
<b>10 percent exceeds</b>	1,480		1,540		2,940	
<b>50 percent exceeds</b>	1,000		1,030		1,450	
<b>90 percent exceeds</b>	754		629		844	

<sup>a</sup> Gage height 14.15 ft, site and datum then in use.

<sup>b</sup> Present site and datum.

