Water-Data Report 2013

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^2.

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. WDR MI-2010: 1990 (Annual, Monthly, Daily discharges).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,061.05 ft above NGVD 1929. 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. Gage-height telemeter at station.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	434	1,060	1,070	991	932	1,550	1,190	9,210	1,790	1,800	1,320	1,110
2	393	1,120	1,070	1,010	996	1,710	1,270	9,680	3,010	1,820	1,190	1,150
3	433	1,050	1,140	980	996	1,690	1,260	e12,500	3,300	1,430	1,230	1,010
4	464	986	1,270	978	978	1,620	1,230	e11,300	2,550	1,420	1,310	849
5	475	873	1,240	993	1,000	1,760	1,240	e6,990	2,270	1,430	1,240	1,030
6	463	997	1,250	995	928	1,770	1,150	e6,010	2,160	1,480	1,270	939
7	464	885	1,150	986	932	1,680	1,240	e5,500	2,070	1,490	1,290	799
8	504	870	1,140	1,080	923	1,640	1,430	e5,920	1,650	1,300	1,440	844
9	512	907	1,250	1,040	900	1,740	1,360	e6,360	1,710	1,590	1,370	842
10	537	864	1,110	1,050	873	1,670	882	e6,200	1,530	2,380	1,480	841
11	538	917	919	1,130	967	1,740	884	e5,770	1,630	2,170	1,310	796
12	520	1,000	946	1,150	978	1,680	890	e5,580	1,590	1,930	1,270	963
13	477	1,020	1,040	1,060	918	1,640	879	e5,160	1,540	1,520	1,140	950
14	583	1,050	1,030	1,160	1,020	1,780	960	e5,260	1,440	1,320	1,070	959
15	676	1,140	1,060	982	944	1,700	949	4,070	1,360	966	1,050	888
16	699	1,050	956	1,030	953	1,690	1,320	3,530	1,120	978	1,020	853
17	706	1,200	1,030	962	979	1,730	1,440	3,020	1,170	1,090	1,170	923
18	739	1,050	1,050	969	897	1,710	1,450	3,010	1,120	880	1,330	831
19	789	1,090	1,030	943	1,050	922	1,570	2,910	1,090	822	1,180	715
20	861	921	1,200	992	1,080	928	1,760	2,670	1,160	1,020	1,140	910
21	916	994	1,120	965	1,030	882	1,810	2,960	1,210	1,060	1,130	1,050
22	893	919	1,040	962	1,030	953	1,790	3,060	1,310	992	1,310	998
23	882	809	983	934	1,120	981	1,590	3,150	1,420	960	1,110	972
24	829	787	1,040	925	1,050	1,010	1,490	3,090	1,620	946	1,080	981
25	1,100	856	1,010	797	1,160	952	1,590	3,090	1,780	893	1,060	1,080
26	2,190	884	936	891	1,000	970	1,810	3,240	1,840	1,280	1,070	978
27	1,650	933	943	878	1,010	1,080	1,720	2,860	1,580	1,670	1,190	1,080
28	1,300	887	916	978	1,230	1,000	3,050	2,590	1,850	1,600	1,460	816
29	1,320	940	975	1,040	---	983	5,290	2,200	1,750	1,510	1,230	858
30	1,140	978	932	1,110	---	1,010	7,530	2,130	1,780	1,500	1,370	837
31	1,080	---	950	1,060	---	1,070	---	2,050	---	1,310	1,140	---
Total	24,567	29,037	32,796	31,021	27,874	43,241	52,024	151,070	51,400	42,557	37,970	27,852
Mean	792	968	1,058	1,001	996	1,395	1,734	4,873	1,713	1,373	1,225	928
Max	2,190	1,200	1,270	1,160	1,230	1,780	7,530	12,500	3,300	2,380	1,480	1,150
Min	393	787	916	797	873	882	879	2,050	1,090	822	1,020	715

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,435	1,534	1,423	1,391	1,391	1,596	3,063	2,957	2,058	1,549	1,269	1,342
Max	3,537	3,465	2,640	2,253	2,514	3,544	8,159	6,319	5,035	4,309	2,359	3,149
(WY)	(1986)	(1986)	(1984)	(1983)	(1984)	(1973)	(1916)	(1960)	(1916)	(1953)	(1972)	(1968)
Min	611	725	765	691	647	692	707	595	799	721	527	567
(WY)	(2009)	(1964)	(1925)	(1924)	(1926)	(1914)	(1990)	(1987)	(1988)	(1925)	(2007)	(2012)

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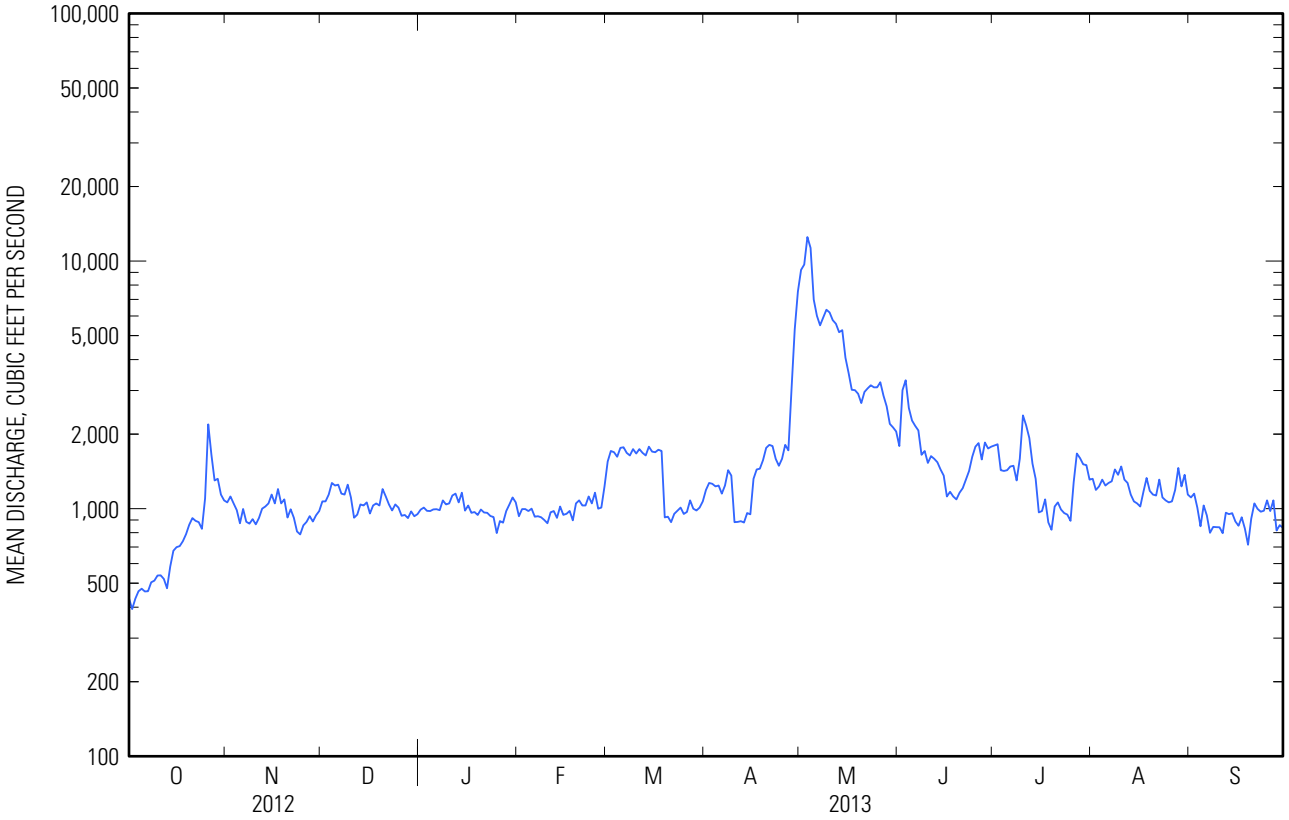
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1914 - 2013	
Annual total	390,613		551,409			
Annual mean	1,067		1,511		1,750	
Highest annual mean					3,069	1916
Lowest annual mean					922	1925
Highest daily mean	2,720	Jul 6	12,500	May 3	18,100	Apr 26, 1960
Lowest daily mean	393	Oct 2	393	Oct 2	57	Sep 26, 1975
Annual seven-day minimum	447	Oct 1	447	Oct 1	277	Oct 18, 1975
Maximum peak flow			[a]15,500	May 3	[b]19,500	Apr 26, 1960
Maximum peak stage			12.59	May 3	[c]13.88	Apr 17, 2002
10 percent exceeds	1,500		2,230		2,920	
50 percent exceeds	1,020		1,080		1,440	
90 percent exceeds	605		857		841	

[a] Bypass flow added from We Energies Aux. flow.
[b] Gage height 14.15 ft, site and datum then in use.
[c] Present site and datum.