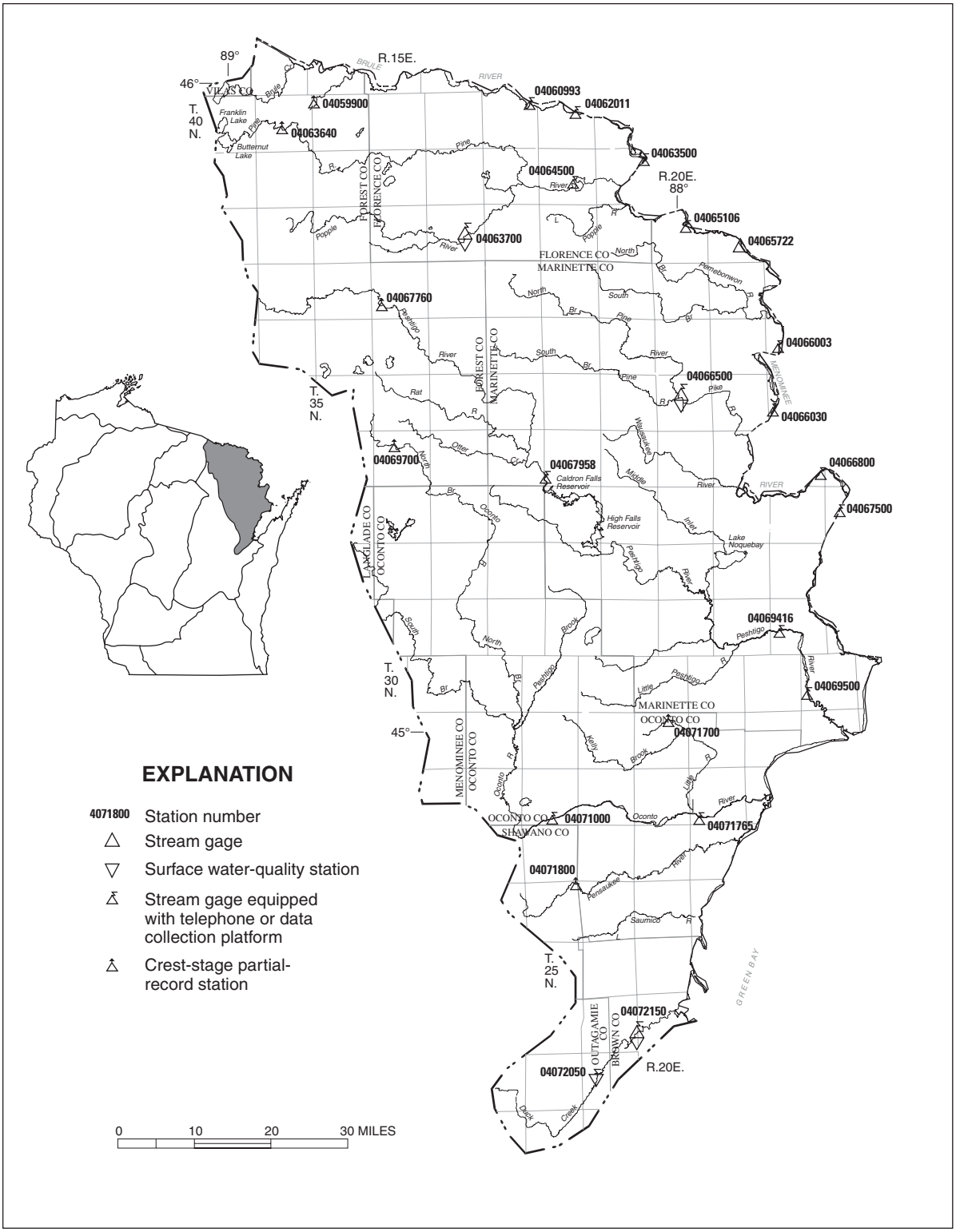

Base from U.S. Geological Survey 1:100,000 digital data; modified by Wisconsin Department of Natural Resources. Wisconsin Transverse Mercator projection.

MENOMINEE-OCONTO-PESHTIGO BASIN

04060993 BRULE RIVER NEAR FLORENCE, WI

LOCATION.--Lat 45°57'39", long 88°18'57", in NW ¼ SE ¼ sec.9, T.41 N., R.32 W., Michigan Meridian, Iron County, Hydrologic Unit 04030106, on left bank 30 ft upstream from bridge on U.S. Highway 2, 4.0 mi upstream from Paint River, 4.0 mi northwest of Florence, and 8.0 mi upstream from confluence with Michigamme River.

DRAINAGE AREA.--366 mi^2, approximately.

PERIOD OF RECORD.--January 1914 to February 1916, June 1944 to current year.

REVISED RECORDS.--WSP 1387: 1914-16. WDR MI-92-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,240 ft above sea level, from topographic map. Prior to Aug. 29, 1944, nonrecording gage, and Aug. 29, 1944 to Apr. 4, 1994, water-stage recorder at site 3.0 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Discharge includes some mine pumpage prior to August 1977. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	244	274	253	e180	e170	e240	612	585	896	268	250	207
2	238	257	226	e180	e170	e250	608	526	792	263	231	229
3	237	249	213	e170	e170	e260	650	484	637	247	218	217
4	240	270	306	e170	e165	e260	628	455	531	314	217	205
5	234	291	340	e170	e165	e250	583	432	471	334	221	198
6	227	278	353	e170	e165	e250	669	412	453	322	206	209
7	223	256	335	e170	e165	e250	845	393	425	388	197	216
8	222	237	313	e170	e165	e250	986	377	385	353	203	214
9	228	219	283	e170	e165	e250	1,110	368	375	317	209	200
10	223	257	274	e170	e165	e250	998	374	364	294	224	195
11	221	254	220	e170	e165	e250	823	366	339	279	228	191
12	263	260	e210	e170	e165	e250	704	356	333	271	246	190
13	259	266	e200	e170	e165	e250	618	445	382	267	230	190
14	240	243	e190	e170	e165	e250	594	529	552	280	213	191
15	230	256	e190	e170	e165	e250	591	566	495	263	205	279
16	224	261	e190	e170	e165	e250	636	500	410	255	202	406
17	222	270	e190	e170	e165	e250	707	449	377	256	218	336
18	227	344	e190	e170	e165	e250	792	411	347	245	231	280
19	223	435	e190	e170	e170	e250	1,210	374	314	235	253	249
20	224	382	e180	e170	e170	e250	1,840	360	295	232	225	236
21	219	330	e180	e170	e170	e250	2,090	352	290	237	208	223
22	218	299	e180	e170	e170	e250	1,570	349	312	228	205	217
23	225	296	e180	e170	e180	e250	1,170	444	303	222	200	209
24	227	310	e180	e170	e190	e250	906	692	319	215	198	211
25	226	283	e180	e170	e200	e250	803	650	307	210	199	204
26	223	270	e180	e170	e200	e270	778	558	294	206	202	202
27	220	290	e180	e170	e210	e350	722	485	276	203	240	201
28	233	270	e180	e170	e220	502	652	458	271	201	210	199
29	256	256	e180	e170	e230	841	603	416	261	199	199	196
30	258	249	e180	e170	---	812	623	385	254	200	196	197
31	282	---	e180	e170	---	667	---	604	---	267	195	---
TOTAL	7,236	8,412	6,826	5,290	5,095	9,702	26,121	14,155	12,060	8,071	6,679	6,697
MEAN	233	280	220	171	176	313	871	457	402	260	215	223
MAX	282	435	353	180	230	841	2,090	692	896	388	253	406
MIN	218	219	180	170	165	240	583	349	254	199	195	190
CFSM	0.64	0.77	0.60	0.47	0.48	0.86	2.38	1.25	1.10	0.71	0.59	0.61
IN.	0.74	0.85	0.69	0.54	0.52	0.99	2.65	1.44	1.23	0.82	0.68	0.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2004, BY WATER YEAR (WY)

MEAN	322	330	273	248	242	318	658	497	390	334	286	305
MAX	612	600	424	369	406	833	1,235	1,104	712	983	604	582
(WY)	(1986)	(1916)	(1986)	(1986)	(1984)	(1973)	(1967)	(1965)	(1981)	(1953)	(1972)	(1959)
MIN	179	202	175	156	163	178	235	242	194	185	186	182
(WY)	(1949)	(1990)	(1990)	(1995)	(1995)	(1965)	(1990)	(1998)	(1988)	(1989)	(1948)	(1948)

04060993 BRULE RIVER NEAR FLORENCE, WI—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1914 - 2004	
ANNUAL TOTAL	113,755		116,344			
ANNUAL MEAN	312		318		349	
HIGHEST ANNUAL MEAN					512	1973
LOWEST ANNUAL MEAN					221	1990
HIGHEST DAILY MEAN	1,600	May 13	2,090	Apr 21	4,420	Jul 2, 1953
LOWEST DAILY MEAN	180	Sep 7	165	Feb 4	130	Dec 2, 1963
ANNUAL SEVEN-DAY MINIMUM	180	Dec 20	165	Feb 4	140	Jan 2, 1995
MAXIMUM PEAK FLOW			2,210	Apr 21	4,700	Jul 2, 1953
MAXIMUM PEAK STAGE			6.46	Apr 21	(a)8.41	Jul 15, 1999
INSTANTANEOUS LOW FLOW			160	Nov 8	(b)95	Dec 17, 1999
ANNUAL RUNOFF (CFSM)	0.852		0.869		0.954	
ANNUAL RUNOFF (INCHES)	11.56		11.83		12.96	
10 PERCENT EXCEEDS	478		597		548	
50 PERCENT EXCEEDS	240		249		285	
90 PERCENT EXCEEDS	198		170		203	

(a) Present site and datum; peak stage at previous site and datum, 8.60 ft, Dec. 20, 1983, backwater from ice.
(b) Result of freezeup.
(e) Estimated.

04062011 BRULE RIVER NEAR COMMONWEALTH, WI

LOCATION.--Lat 45°56'51" long 88°12'55", in NW $\frac{1}{4}$ sec.14, T.40 N., R.18 E., Wisconsin Meridian, Florence County, Hydrologic Unit 04030106, on right bank 900 ft downstream from Brule Island Dam, 1.5 mi upstream from confluence with Michigamme River, and 2.8 mi north of Commonwealth, WI.

DRAINAGE AREA.--1,020 mi^2.

PERIOD OF RECORD.--October 1989 to current year.

REVISED RECORD.--WDR MI-91-1: 1990(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,130 ft above sea level, from topographic map.

REMARKS.--Records excellent (see page 11). Flow regulated by powerplant 900 ft upstream and by Lower Paint Dam 8.2 mi upstream. Records not adjusted for diversion to Michigamme River by Paint River Diversion Canal. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	517	566	506	434	427	514	1,060	994	1,800	555	498	505
2	517	501	401	420	439	507	1,000	911	2,300	521	493	502
3	516	561	331	509	439	577	1,140	881	1,880	495	479	501
4	517	563	357	373	382	521	996	874	1,570	580	481	500
5	517	561	493	414	378	480	1,040	824	1,300	658	484	470
6	517	556	461	349	437	485	1,030	761	904	589	490	467
7	516	485	411	358	450	481	1,300	783	757	723	508	495
8	517	426	405	388	450	473	1,470	804	745	627	478	515
9	502	417	496	395	441	429	2,030	743	741	597	444	466
10	490	564	495	391	414	438	2,110	718	723	594	548	518
11	515	565	346	403	408	507	1,870	767	637	518	476	487
12	551	505	362	434	420	465	1,740	782	667	522	459	469
13	566	573	367	439	431	450	1,310	833	715	579	540	460
14	529	504	416	436	433	422	977	914	945	578	481	455
15	514	509	493	437	435	436	975	990	856	561	490	631
16	512	509	460	438	433	506	1,040	936	768	483	500	667
17	466	509	490	434	429	489	1,120	843	613	509	499	639
18	463	629	448	440	424	452	1,260	734	680	570	521	534
19	497	757	446	439	427	446	2,810	733	572	529	527	525
20	510	689	399	440	426	448	5,540	690	612	445	526	509
21	512	584	394	389	410	442	6,050	671	604	518	512	510
22	504	565	428	441	411	477	5,310	681	526	487	480	539
23	474	558	474	446	452	461	4,580	813	640	498	472	488
24	474	597	478	445	473	459	3,730	1,100	601	501	470	489
25	472	470	426	418	399	455	3,410	1,010	610	483	461	479
26	527	502	428	391	416	507	2,740	913	639	465	484	481
27	493	571	422	415	486	603	2,370	888	563	467	525	478
28	490	577	465	443	451	792	2,160	820	559	504	529	481
29	560	515	497	445	459	1,180	1,680	748	557	467	477	471
30	571	519	506	439	---	1,010	1,230	682	552	443	470	465
31	513	---	449	366	---	1,000	---	977	---	628	504	---
TOTAL	15,839	16,407	13,550	13,009	12,480	16,912	65,078	25,818	25,636	16,694	15,306	15,196
MEAN	511	547	437	420	430	546	2,169	833	855	539	494	507
MAX	571	757	506	509	486	1,180	6,050	1,100	2,300	723	548	667
MIN	463	417	331	349	378	422	975	671	526	443	444	455

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2004, BY WATER YEAR (WY)

MEAN	447	416	372	352	360	451	1,232	885	534	473	400	394
MAX	923	603	545	476	497	634	3,128	2,757	855	887	680	569
(WY)	(2003)	(2003)	(2002)	(2003)	(2003)	(1998)	(2002)	(1996)	(2004)	(1999)	(2002)	(2002)
MIN	276	307	270	259	270	327	322	355	334	272	296	285
(WY)	(1990)	(1990)	(1990)	(1991)	(1991)	(2001)	(1990)	(1998)	(1992)	(1990)	(1990)	(1998)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1990 - 2004	
ANNUAL TOTAL	240,812		251,925			
ANNUAL MEAN	660		688		526	
HIGHEST ANNUAL MEAN					810	1996
LOWEST ANNUAL MEAN					325	1990
HIGHEST DAILY MEAN	4,580	May 13	6,050	Apr 21	10,500	Apr 17, 2002
LOWEST DAILY MEAN	331	Dec 3	331	Dec 3	182	Feb 11, 1994
ANNUAL SEVEN-DAY MINIMUM	408	Dec 2	381	Jan 4	202	Mar 26, 1990
MAXIMUM PEAK FLOW			6,220	Apr 21	11,200	Apr 17, 2002
MAXIMUM PEAK STAGE			12.26	Apr 21	15.67	Apr 17, 2002
10 PERCENT EXCEEDS	913		1,000		762	
50 PERCENT EXCEEDS	509		506		394	
90 PERCENT EXCEEDS	452		422		288	

STREAMS TRIBUTARY TO LAKE MICHIGAN

04063000 MENOMINEE RIVER NEAR FLORENCE, WI

LOCATION.--Lat 45°57'05", long 88°11'21", in SE1/4 sec.12, T.41 N., R.18 E., Wisconsin Meridian, Florence County, Hydrologic Unit 04030108, on right bank 0.4 mi downstream from confluence of Brule and Michigamme Rivers, 3.5 mi northeast of Florence, WI, and at mile 117.

DRAINAGE AREA.--1,760 mi^2.

PERIOD OF RECORD.--January 1914 to current year. Published as "at Twin Falls near Iron Mountain, MI", January 1914 to June 1950, October 1996 to September 1998. Records published for both sites July 1950 to September 1957, October 1989 to September 1996, October 1998 to current year.

REVISED RECORDS.--WSP 1707: 1953(M). WDR MI-92-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,119.23 ft above sea level (levels by Owen Ayres Associates). Prior to July 5, 1950, headwater and tailwater gages and generation data entered hourly in daily log sheets by company employees at the We Energies Twin Falls Powerplant, 10.4 mi downstream. July 5, 1950 to Oct. 19, 2000, water-stage recorder at site 500 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Prior to July 1950, 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	852	858	1040	1210	e1500	1520	1940	3220	4300	1310	1130	898
2	985	940	967	1150	e1400	1430	2060	3200	4800	1330	1250	990
3	901	969	894	1260	e1600	1860	1960	3180	4400	1180	1060	826
4	861	991	881	1170	e1600	1650	2260	3160	4080	1330	1060	975
5	769	1160	1480	e1600	e1600	1990	2320	3160	3700	1360	1140	920
6	950	905	1020	e1350	e1600	1760	2390	3020	3150	1320	1110	859
7	892	1290	909	e1300	1600	1780	2230	2530	3030	1650	998	939
8	870	1000	1030	e1400	e1600	1740	2340	2110	2860	1510	972	875
9	841	928	1270	e1400	e1700	2070	2890	2030	2860	1520	1040	847
10	899	1020	1040	e1300	e1420	1970	2920	1970	2830	1420	1100	1010
11	938	902	817	e1530	1490	1930	3300	2010	2490	1390	938	810
12	827	953	925	1510	1640	1850	3320	1870	2300	1370	940	807
13	1040	984	1010	e1600	1530	e1800	3230	1870	2270	1450	1050	728
14	1010	1050	949	e1530	1550	1550	2850	2240	2460	1350	893	759
15	934	1150	850	e1700	1530	e1800	2510	2710	2220	1180	981	966
16	930	923	933	e1700	1670	e1800	2980	2780	2180	1100	1060	1030
17	884	1100	1300	e1790	1590	1620	3320	2690	1860	1350	1070	991
18	949	1090	1070	e1550	e1500	1570	e3500	2650	1420	1200	1130	873
19	1010	1570	e1140	e1440	1480	1600	e5200	2420	1390	1430	1030	1040
20	956	1420	e1000	1750	e1600	1580	8760	2460	1520	1260	1040	1050
21	880	1440	926	e1500	e1600	1480	9470	2450	1340	1500	1030	920
22	912	1590	1120	e1600	1540	1580	8560	2300	1240	1230	1000	959
23	935	1580	1120	e1600	1630	1550	7260	2360	1230	1100	970	892
24	806	1600	e1160	e1550	1510	1580	6210	3140	1150	1090	1020	892
25	802	1410	985	e1600	e1500	1410	5910	3270	1330	921	914	815
26	888	1100	1060	e1600	e1500	1590	5200	3160	1220	889	931	808
27	907	1130	1020	e1600	1530	1940	4830	2700	1340	1020	945	811
28	884	1220	1060	e1550	1480	1720	4570	2500	1200	1110	955	786
29	834	1080	1290	e1500	1400	1860	3900	2750	1300	1130	880	752
30	863	1170	1190	e1600	---	1960	3250	2900	1250	1030	845	663
31	836	---	1160	e1700	---	1870	---	3050	---	1190	1050	---
TOTAL	27845	34523	32616	46640	44890	53410	121440	81860	68720	39220	31532	26491
MEAN	898	1151	1052	1505	1548	1723	4048	2641	2291	1265	1017	883
MAX	1040	1600	1480	1790	1700	2070	9470	3270	4800	1650	1250	1050
MIN	769	858	817	1150	1400	1410	1940	1870	1150	889	845	663

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2004, BY WATER YEAR (WY)

MEAN	1458	1569	1440	1398	1387	1597	3168	3021	2108	1580	1291	1375
MAX	3537	3465	2640	2253	2514	3544	8159	6319	5035	4253	2359	3149
(WY)	1986	1986	1984	1983	1984	1973	1916	1960	1916	1953	1972	1968
MIN	726	725	765	691	647	692	735	595	799	721	545	718
(WY)	1949	1964	1925	1924	1926	1914	1990	1987	1988	1925	1925	1925

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1914 - 2004	
ANNUAL TOTAL	548416		609187			
ANNUAL MEAN	1503		1664		1782	
HIGHEST ANNUAL MEAN					3069	1916
LOWEST ANNUAL MEAN					922	1925
HIGHEST DAILY MEAN	7550	May 13	9470	Apr 21	18800	Jul 2 1953
LOWEST DAILY MEAN	629	Sep 11	663	Sep 30	57	Sep 26 1975
ANNUAL SEVEN-DAY MINIMUM	728	Sep 8	790	Sep 24	277	Oct 18 1975
MAXIMUM PEAK FLOW			10000	Apr 21	19500	Apr 26 1960
MAXIMUM PEAK STAGE			9.84	Apr 21	14.15	Apr 26 1960
INSTANTANEOUS LOW FLOW					38	(a)
10 PERCENT EXCEEDS	2370		2910		3000	
50 PERCENT EXCEEDS	1270		1360		1460	
90 PERCENT EXCEEDS	846		889		848	

(a) Aug. 21, 1962, Sept. 26, 1975
(e) Estimated

04063500 MENOMINEE RIVER AT TWIN FALLS NEAR IRON MOUNTAIN, MI

LOCATION.--Lat 45°52'17", long 88°04'12" in NE ¼ SE ¼ sec.12, T.40 N., R.31 W., Michigan Meridian, Dickinson County, 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.

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, and 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 1,062 ft above sea level (levels by We Energies). 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.

REMARKS.--Records good (see page 11). 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.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	968	981	1,110	1,220	1,570	1,490	2,150	3,470	4,420	1,420	1,200	1,040
2	1,030	1,010	955	1,240	1,450	1,560	2,240	3,410	5,030	1,470	1,360	1,080
3	1,020	1,080	998	1,260	1,680	1,820	2,250	3,380	4,590	1,300	1,140	934
4	987	1,090	834	1,280	1,640	1,710	2,520	3,360	4,300	1,420	1,160	1,030
5	949	1,280	1,530	1,580	1,630	2,020	2,640	3,420	3,950	1,460	1,200	964
6	914	1,100	985	1,350	1,580	1,900	2,640	3,190	3,430	1,520	1,220	1,010
7	1,100	1,280	973	1,290	1,680	1,830	2,470	2,820	3,130	1,820	1,090	994
8	923	1,160	1,120	1,400	1,650	1,930	2,600	2,230	3,070	1,720	1,110	912
9	992	1,040	1,290	1,430	1,670	1,980	3,190	2,240	3,230	1,650	1,140	993
10	1,010	939	1,060	1,170	1,420	2,090	3,390	2,110	2,950	1,590	1,130	1,050
11	983	1,030	1,030	1,460	1,540	2,030	3,590	2,160	2,690	1,470	1,090	903
12	1,010	1,090	807	1,540	1,560	1,780	3,590	2,060	2,480	1,550	1,080	911
13	1,070	1,030	979	1,590	1,600	1,790	3,540	2,060	2,480	1,540	1,080	826
14	1,170	1,050	937	1,500	1,520	1,680	3,190	2,340	2,740	1,480	1,050	922
15	1,040	1,190	867	1,660	1,620	1,740	2,870	2,930	2,460	1,360	1,170	966
16	1,000	1,060	1,100	1,610	1,580	1,760	3,230	3,010	2,360	1,330	1,130	1,090
17	1,020	1,150	1,250	1,740	1,610	1,740	3,580	2,940	2,050	1,450	1,200	1,060
18	1,070	1,120	1,160	1,710	1,530	1,690	3,700	2,900	1,640	1,280	1,220	996
19	1,060	1,680	1,170	1,480	1,570	1,730	5,350	2,700	1,600	1,570	1,100	1,110
20	1,030	1,600	1,010	1,750	1,590	1,600	8,850	2,680	1,680	1,340	1,150	1,070
21	979	1,530	1,010	1,540	1,570	1,630	9,980	2,580	1,410	1,550	1,160	999
22	982	1,710	1,010	1,610	1,570	1,560	9,050	2,450	1,490	1,360	1,170	1,090
23	1,040	1,710	1,090	1,610	1,650	1,630	7,920	2,570	1,270	1,220	1,100	973
24	885	1,710	1,170	1,560	1,510	1,650	6,450	3,380	1,320	1,180	1,070	929
25	908	1,570	985	1,590	1,570	1,540	6,180	3,530	1,450	1,050	1,130	906
26	880	1,180	1,010	1,620	1,480	1,670	5,440	3,370	1,300	1,040	1,010	871
27	1,020	1,190	992	1,590	1,590	1,970	5,040	2,990	1,430	1,130	1,100	792
28	979	1,280	1,110	1,560	1,450	2,020	4,930	2,830	1,400	1,120	1,040	925
29	918	1,110	1,330	1,470	1,550	2,160	4,050	2,880	1,420	1,180	1,040	813
30	891	1,240	1,290	1,680	---	2,070	3,490	3,040	1,370	1,200	1,050	773
31	891	---	1,200	1,710	---	2,050	---	3,330	---	1,170	1,020	---
TOTAL	30,719	37,190	33,362	46,800	45,630	55,820	130,110	88,360	74,140	42,940	34,910	28,932
MEAN	991	1,240	1,076	1,510	1,573	1,801	4,337	2,850	2,471	1,385	1,126	964
MAX	1,170	1,710	1,530	1,750	1,680	2,160	9,980	3,530	5,030	1,820	1,360	1,110
MIN	880	939	807	1,170	1,420	1,490	2,150	2,060	1,270	1,040	1,010	773

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2004, BY WATER YEAR (WY)

MEAN	1,469	1,583	1,449	1,407	1,395	1,611	3,191	3,039	2,127	1,595	1,305	1,389
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	726	725	765	691	647	692	707	595	799	721	545	718
(WY)	(1949)	(1964)	(1925)	(1924)	(1926)	(1914)	(1990)	(1987)	(1988)	(1925)	(1925)	(1925)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1914 - 2004	
ANNUAL TOTAL	577,358		648,913			
ANNUAL MEAN	1,582		1,773		1,797	
HIGHEST ANNUAL MEAN					3,069	1916
LOWEST ANNUAL MEAN					922	1925
HIGHEST DAILY MEAN	7,990	May 14	9,980	Apr 21	18,100	Apr 26, 1960
LOWEST DAILY MEAN	649	Sep 11	773	Sep 30	57	Sep 26, 1975
ANNUAL SEVEN-DAY MINIMUM	810	Sep 8	858	Sep 24	277	Oct 18, 1975
MAXIMUM PEAK FLOW			10,600	Apr 21	(a)19,500	Apr 26, 1960
MAXIMUM PEAK STAGE			11.99	Apr 21	(b)13.88	Apr 17, 2002
10 PERCENT EXCEEDS	2,590		3,190		3,020	
50 PERCENT EXCEEDS	1,310		1,450		1,470	
90 PERCENT EXCEEDS	885		980		859	

(a) Gage height 14.15 ft, site and datum then in use.
(b) Present site and datum.

04063700 POPPLE RIVER NEAR FENCE, WI
(HYDROLOGIC BENCHMARK STATION)

LOCATION.--Lat 45°45'49", long 88°27'47", in NW ¼ NW ¼ sec.23, T.38 N., R.16 E., Florence County, Hydrologic Unit 04030108, on left bank 20 ft upstream from bridge on U. S. Forest Service Road 2159, 1.8 mi downstream from Mud Creek, 2.6 mi northwest of Fence, and 11.5 mi upstream from mouth.

DRAINAGE AREA.--139 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1963 to current year.

REVISED RECORDS.--WDR WI-76-1: 1972(M). WDR WI-80-1: Drainage area. WDR WI-81-1: 1965 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,406.16 ft above NGVD of 1929. Prior to June 18, 1964, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	54	55	e42	e32	e40	e330	202	303	54	49	42
2	52	52	52	e39	e32	e42	e320	183	317	52	46	42
3	52	50	49	e35	e32	e44	e310	164	292	53	51	41
4	51	56	45	e31	e32	e48	e300	149	260	61	49	39
5	50	70	43	e28	e32	e44	276	136	215	71	44	39
6	47	68	43	e26	e31	e41	280	128	184	74	40	40
7	46	68	42	e25	e31	e41	323	119	161	109	39	41
8	44	55	42	e26	e31	e40	353	114	141	115	38	41
9	42	48	44	e26	e31	e42	390	110	133	108	42	39
10	40	48	43	e27	e31	e43	408	117	134	96	49	38
11	39	51	42	e27	e31	e43	404	122	126	85	49	36
12	48	56	e41	e27	e31	e44	379	118	119	77	50	36
13	50	54	e40	e28	e31	e43	346	136	125	73	49	36
14	48	57	e41	e29	e31	e43	311	179	172	73	44	35
15	46	57	e41	e29	e32	e43	285	208	185	63	42	43
16	45	59	e41	e29	e34	e43	283	205	182	56	42	56
17	43	64	e41	e29	e36	e43	309	177	170	55	43	50
18	42	86	e41	e30	e37	e42	336	161	158	52	48	46
19	41	117	e41	e31	e38	e42	386	139	138	49	55	43
20	40	117	e41	e33	e38	e41	416	128	116	59	50	41
21	42	108	e41	e36	e39	e41	434	122	102	76	46	39
22	41	98	e40	e35	e39	e42	433	115	94	64	44	38
23	41	93	e40	e35	e39	e43	410	157	88	54	43	38
24	41	90	e39	e34	e38	e44	372	289	84	48	42	36
25	41	87	e39	e33	e36	e48	348	324	79	45	41	34
26	41	90	e38	e32	e36	e68	328	314	74	44	41	35
27	40	78	e39	e32	e36	e87	293	289	68	41	46	34
28	43	73	e43	e31	e36	e130	261	251	64	39	44	37
29	55	67	e51	e31	e38	e210	234	203	60	39	44	34
30	56	59	e50	e31	---	e270	219	181	56	38	43	35
31	55	---	e46	e31	---	e300	---	228	---	46	41	---
TOTAL	1,412	2,130	1,334	958	991	2,135	10,077	5,468	4,400	1,969	1,394	1,184
MEAN	45.5	71.0	43.0	30.9	34.2	68.9	336	176	147	63.5	45.0	39.5
MAX	56	117	55	42	39	300	434	324	317	115	55	56
MIN	39	48	38	25	31	40	219	110	56	38	38	34
CFSM	0.33	0.51	0.31	0.22	0.25	0.50	2.42	1.27	1.06	0.46	0.32	0.28
IN.	0.38	0.57	0.36	0.26	0.27	0.57	2.70	1.46	1.18	0.53	0.37	0.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2004, BY WATER YEAR (WY)

MEAN	113	109	64.5	47.0	46.2	85.5	310	216	142	80.4	64.8	102
MAX	265	220	116	86.6	107	356	613	617	345	260	147	356
(WY)	(1972)	(1986)	(1992)	(1969)	(1984)	(1973)	(1979)	(1965)	(1993)	(1999)	(1978)	(1980)
MIN	25.0	30.9	23.9	24.6	22.8	30.5	54.6	52.0	21.2	17.5	23.1	16.4
(WY)	(1990)	(1977)	(1990)	(1977)	(2003)	(1964)	(1990)	(1998)	(1988)	(1988)	(1989)	(1989)

04063700 POPPLE RIVER NEAR FENCE, WI—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1964 - 2004	
ANNUAL TOTAL	32,508		33,452			
ANNUAL MEAN	89.1		91.4		115	
HIGHEST ANNUAL MEAN					175	1973
LOWEST ANNUAL MEAN					64.3	1988
HIGHEST DAILY MEAN	510	Apr 22	434	Apr 21	1,610	Apr 25, 1979
LOWEST DAILY MEAN	21	Feb 7	(a)25	Jan 7	10	Aug 12, 1989
ANNUAL SEVEN-DAY MINIMUM	22	(b)Feb 1	(a)26	Jan 6	12	(c)Jul 3, 1988
MAXIMUM PEAK FLOW			(d)438	Apr 21	(f)1,640	Apr 25, 1979
MAXIMUM PEAK STAGE			(a)2.70	Mar 31	4.81	Apr 19, 2002
INSTANTANEOUS LOW FLOW			(a)		(g)5.9	Oct 28, 1976
ANNUAL RUNOFF (CFSM)	0.641		0.658		0.827	
ANNUAL RUNOFF (INCHES)	8.70		8.95		11.23	
10 PERCENT EXCEEDS	236		264		251	
50 PERCENT EXCEEDS	45		46		69	
90 PERCENT EXCEEDS	27		32		33	

(a) Ice affected
(b) Also occurred Feb. 17, Ice affected
(c) Also occurred Sept. 20, 1989
(d) Gage height, 2.69 ft
(e) Estimated due to ice effect or missing record
(f) Gage height, 4.52 ft
(g) Result of temporary storage from beaver dam

04063700 POPPLE RIVER NEAR FENCE, WI—Continued
(HYDROLOGIC BENCHMARK STATION)

WATER-QUALITY RECORD

PERIOD OF RECORD.--June 1964 to September 1997, October 2000 to current year. National Water-Quality Assessment Program sampling April 1993 to October 1996, and April 2001 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: June 2002 to current year.
SPECIFIC CONDUCTANCE: June 2002 to current year.

INSTRUMENTATION.--Continuous water temperature recorder and specific conductance recorder since June 2002. Sensor located near midstream.

REMARKS.--Records represent water temperature at sensor within 0.5°C. Records for water temperature were faulty Aug. 15-19. Records for specific conductance were faulty Jan. 11 to Feb. 26 and Aug. 15-19.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 27.0°C, July 5 and Aug. 19 (partial day), 2003; minimum, 0.0°C, many days.
SPECIFIC CONDUCTANCE: Maximum, 292 mS/cm, Jan. 11, 2003; minimum, 63 mS/cm, Apr. 11 and 12, 2004.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.5°C, July 1 and 20; minimum, 0.0°C, many days.
SPECIFIC CONDUCTANCE: Maximum, 279 mS/cm, Jan. 10; minimum, 63 mS/cm, Apr. 11 and 12.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.5	5.5	6.5	5.5	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0
2	7.5	4.5	6.0	4.5	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
3	8.0	5.5	7.0	4.0	1.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
4	7.5	5.5	6.5	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
5	8.0	4.0	6.0	2.0	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
6	9.0	4.0	6.5	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
7	11.0	6.0	8.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	13.5	8.5	11.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	14.0	10.5	12.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	15.0	11.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	15.0	12.0	13.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	14.5	11.5	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	12.5	10.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	11.5	9.5	10.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	9.5	7.0	8.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
16	7.5	5.5	6.5	1.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
17	6.5	4.5	5.5	2.5	0.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
18	9.0	5.5	7.0	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
19	8.5	6.0	7.5	3.0	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
20	10.5	7.0	8.5	2.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
21	10.0	8.0	9.0	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
22	8.0	6.0	6.5	1.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
23	7.0	6.0	6.5	1.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
24	6.0	5.0	5.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	7.0	4.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	6.5	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	5.0	3.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	4.5	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	5.0	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	6.0	5.0	5.5	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	15.0	3.0	7.6	5.5	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0

04063700 POPPLE RIVER NEAR FENCE, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	11.5	8.0	9.5
2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	9.5	7.5	8.5
3	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	10.5	5.5	8.0
4	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.5	12.0	8.5	10.0
5	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.5	2.0	12.5	8.5	10.5
6	0.0	0.0	0.0	0.0	0.0	0.0	6.0	2.5	4.0	13.0	10.5	11.5
7	0.0	0.0	0.0	0.0	0.0	0.0	4.5	2.5	3.5	13.0	9.5	11.5
8	0.0	0.0	0.0	0.0	0.0	0.0	3.5	2.5	3.0	11.5	10.0	10.5
9	0.0	0.0	0.0	0.0	0.0	0.0	3.5	1.5	2.5	10.5	9.5	10.0
10	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.5	2.5	15.5	10.0	12.5
11	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.0	2.0	16.0	11.5	14.0
12	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.0	2.0	19.5	14.0	16.5
13	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.5	3.0	17.5	14.0	16.0
14	0.0	0.0	0.0	0.0	0.0	0.0	6.0	4.0	5.0	14.0	10.0	11.5
15	0.0	0.0	0.0	0.0	0.0	0.0	7.5	4.0	6.0	12.5	8.0	10.5
16	0.0	0.0	0.0	0.0	0.0	0.0	9.5	6.5	8.0	15.0	11.0	13.0
17	0.0	0.0	0.0	0.0	0.0	0.0	11.0	7.5	9.5	15.0	13.5	14.0
18	0.0	0.0	0.0	0.0	0.0	0.0	10.0	8.0	9.0	17.5	12.5	15.0
19	0.0	0.0	0.0	0.0	0.0	0.0	9.0	8.0	8.5	18.0	14.0	16.0
20	0.0	0.0	0.0	0.0	0.0	0.0	8.0	5.5	6.5	19.0	16.0	17.5
21	0.0	0.0	0.0	0.0	0.0	0.0	6.0	5.0	5.5	17.5	13.0	15.0
22	0.0	0.0	0.0	0.0	0.0	0.0	8.5	4.5	6.5	13.0	12.0	12.5
23	0.0	0.0	0.0	0.0	0.0	0.0	8.5	6.0	7.0	12.0	9.0	10.5
24	0.0	0.0	0.0	0.0	0.0	0.0	8.0	6.0	7.0	9.5	8.0	9.0
25	0.0	0.0	0.0	0.0	0.0	0.0	7.5	5.5	6.5	10.5	8.5	9.5
26	0.0	0.0	0.0	0.0	0.0	0.0	6.0	4.5	5.5	14.5	9.5	12.0
27	0.0	0.0	0.0	0.0	0.0	0.0	7.0	4.0	5.5	14.0	12.5	13.5
28	0.0	0.0	0.0	0.0	0.0	0.0	11.0	6.0	8.5	15.5	10.5	13.0
29	0.0	0.0	0.0	0.0	0.0	0.0	13.0	11.0	12.0	14.5	12.5	13.5
30	---	---	---	0.0	0.0	0.0	11.5	9.5	10.0	13.5	12.5	13.0
31	---	---	---	0.0	0.0	0.0	---	---	---	12.5	10.5	11.5
MONTH	0.0	0.0	0.0	0.0	0.0	0.0	13.0	0.0	5.0	19.5	5.5	12.2
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.5	10.5	11.0	25.5	19.0	22.0	24.0	19.0	21.5	17.5	16.0	16.5
2	15.0	10.5	12.5	23.5	19.0	21.5	23.0	20.5	22.0	21.5	15.5	18.0
3	17.0	12.0	14.5	23.5	18.5	21.5	24.5	20.0	22.0	23.5	18.0	20.5
4	18.0	14.0	16.0	22.0	18.5	20.0	23.5	20.0	22.0	23.0	18.5	21.0
5	16.5	15.0	16.0	21.0	16.5	18.5	22.5	17.5	20.0	22.5	19.0	21.0
6	20.5	15.0	17.5	19.5	15.0	16.5	23.0	17.0	20.0	22.0	20.0	21.0
7	23.0	18.0	20.0	15.0	13.5	14.0	21.0	17.0	19.0	20.0	16.0	17.0
8	24.5	21.0	22.5	15.5	13.0	14.0	19.0	17.5	18.5	18.0	14.0	16.0
9	23.0	17.5	20.0	17.5	13.5	15.5	21.5	17.5	19.5	18.5	13.5	16.0
10	20.0	15.5	17.5	22.0	15.5	18.5	20.0	17.0	18.5	19.5	14.5	17.5
11	18.0	15.5	16.5	21.0	18.5	20.0	17.0	14.5	15.5	19.5	17.0	18.5
12	21.0	15.0	17.5	24.5	18.5	21.0	18.5	13.0	15.5	20.5	15.5	18.0
13	20.0	18.5	19.0	23.5	20.0	21.5	18.0	14.0	16.0	21.5	17.5	19.5
14	19.0	17.0	18.0	23.5	19.0	21.5	19.0	14.0	16.5	20.5	18.5	19.5
15	20.5	17.0	18.5	25.0	18.5	21.5	---	---	---	19.5	18.0	19.0
16	22.0	18.5	20.0	22.5	19.5	21.0	---	---	---	18.0	15.0	16.5
17	22.5	19.0	20.5	24.0	18.5	21.5	---	---	---	17.0	12.5	15.0
18	22.0	19.0	20.5	23.0	18.0	21.0	---	---	---	18.5	13.5	16.0
19	20.0	16.5	18.5	24.0	19.5	22.0	---	---	---	18.5	15.0	17.0
20	21.0	16.0	18.5	25.5	20.5	23.0	19.0	14.0	16.5	19.5	15.5	17.5
21	20.5	17.0	19.0	24.5	21.5	23.0	18.5	13.0	16.0	19.5	15.0	17.5
22	20.0	16.5	18.5	24.0	21.5	22.5	20.0	15.0	17.5	21.5	17.0	19.0
23	21.0	16.0	18.5	21.5	17.5	20.0	20.5	16.5	18.5	19.5	16.0	18.0
24	18.5	15.5	17.0	21.5	16.0	19.0	18.5	16.5	17.5	18.5	15.5	16.5
25	17.0	13.5	15.5	23.0	16.5	20.0	21.5	17.5	19.5	18.0	14.0	16.0
26	18.5	13.0	15.5	23.5	18.0	20.5	24.0	19.0	21.5	17.0	13.0	15.5
27	17.5	13.5	16.0	24.0	19.0	21.5	24.0	20.0	22.0	16.5	13.5	15.0
28	19.5	14.0	17.0	23.5	19.5	21.5	22.0	16.5	18.0	15.0	12.5	14.0
29	22.5	16.0	19.0	22.5	19.5	21.0	16.5	14.5	15.5	14.0	9.5	12.0
30	24.0	17.5	20.5	23.0	18.5	21.0	17.5	13.5	15.5	13.5	9.0	11.5
31	---	---	---	23.0	19.0	21.0	18.0	14.0	16.5	---	---	---
MONTH	24.5	10.5	17.7	25.5	13.0	20.2	24.5	13.0	18.5	23.5	9.0	17.2
YEAR	25.5	0.0	8.2									

04063700 POPPLE RIVER NEAR FENCE, WI—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	226	224	225	220	213	216	175	163	170	227	216	222
2	232	226	230	218	214	216	188	175	182	226	224	225
3	232	230	231	218	213	215	194	188	190	224	216	221
4	232	230	231	213	204	208	202	193	199	232	220	227
5	231	230	231	204	194	198	206	202	204	237	232	234
6	233	231	232	196	190	195	209	203	205	251	237	243
7	235	232	234	204	186	197	214	209	212	264	251	258
8	237	234	236	214	203	209	214	209	212	273	258	269
9	241	236	239	224	214	220	210	206	208	277	260	274
10	243	240	241	222	213	218	208	205	208	279	263	277
11	244	241	243	214	203	209	211	208	210	---	---	---
12	245	237	241	207	199	203	217	210	213	---	---	---
13	241	233	235	204	200	202	225	217	222	---	---	---
14	235	233	234	208	202	205	229	225	227	---	---	---
15	235	234	235	204	200	202	229	226	228	---	---	---
16	236	235	235	202	198	200	226	221	223	---	---	---
17	236	233	234	200	196	198	221	218	220	---	---	---
18	235	234	234	196	178	187	219	211	217	---	---	---
19	239	234	235	178	155	163	219	214	219	---	---	---
20	238	236	237	155	147	150	224	211	220	---	---	---
21	239	237	238	148	146	146	225	218	224	---	---	---
22	239	234	238	146	145	146	226	217	224	---	---	---
23	239	237	238	147	146	147	225	217	224	---	---	---
24	239	235	237	147	129	142	228	222	226	---	---	---
25	237	233	236	159	128	144	228	215	226	---	---	---
26	238	236	237	153	149	151	229	226	228	---	---	---
27	239	232	237	153	151	152	228	219	226	---	---	---
28	237	227	233	156	153	155	227	204	216	---	---	---
29	231	226	228	178	156	160	214	195	207	---	---	---
30	226	221	223	184	164	180	211	204	208	---	---	---
31	223	219	221	---	---	---	218	211	213	---	---	---
MONTH	245	219	234	224	128	184	229	163	213	279	216	245
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	236	229	233	79	65	77	89	86	87
2	---	---	---	230	222	227	78	74	76	107	89	95
3	---	---	---	225	216	220	75	72	74	105	92	93
4	---	---	---	221	216	218	74	72	73	102	95	98
5	---	---	---	230	216	221	80	74	77	120	99	105
6	---	---	---	231	225	227	80	78	79	125	104	107
7	---	---	---	231	226	228	78	73	74	129	109	112
8	---	---	---	243	227	237	74	67	70	132	114	116
9	---	---	---	237	225	228	67	65	66	137	118	121
10	---	---	---	229	227	228	65	64	64	129	120	122
11	---	---	---	227	218	224	64	63	64	138	118	121
12	---	---	---	227	220	223	65	63	64	124	120	122
13	---	---	---	228	219	224	68	64	66	138	117	122
14	---	---	---	231	227	229	71	68	69	117	107	113
15	---	---	---	229	219	226	75	71	73	119	99	107
16	---	---	---	235	216	225	78	75	76	112	95	98
17	---	---	---	230	218	227	78	76	77	109	96	98
18	---	---	---	234	212	228	78	76	77	104	99	101
19	---	---	---	230	207	223	76	72	74	110	104	107
20	---	---	---	229	217	223	72	69	70	116	110	113
21	---	---	---	231	217	225	69	66	68	120	116	117
22	---	---	---	233	225	229	66	65	66	123	120	121
23	---	---	---	231	226	229	66	65	65	124	104	117
24	---	---	---	231	224	226	66	65	66	104	87	92
25	---	---	---	238	212	233	68	66	67	87	79	82
26	---	---	---	224	187	207	70	68	69	79	78	79
27	243	240	241	187	161	173	72	70	71	81	79	80
28	244	239	240	161	122	146	75	72	74	85	81	82
29	241	234	238	122	89	104	90	75	79	91	84	88
30	---	---	---	89	74	82	93	81	84	100	91	96
31	---	---	---	83	77	80	---	---	---	102	92	99
MONTH	244	234	240	243	74	208	93	63	72	138	78	104

04063700 POPPLE RIVER NEAR FENCE, WI—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	92	85	88	195	189	193	225	220	222	242	237	240
2	85	82	83	200	195	198	232	220	224	244	240	242
3	84	82	83	207	200	206	224	219	222	244	240	243
4	88	84	86	208	205	206	221	216	219	247	242	245
5	96	88	92	206	199	204	227	216	224	248	242	246
6	105	96	101	204	192	198	228	222	225	248	241	244
7	112	105	109	192	174	183	228	222	225	246	241	243
8	121	112	116	174	162	167	232	223	227	245	241	243
9	126	121	123	162	153	156	226	218	222	247	244	245
10	131	126	128	159	153	154	222	216	219	249	244	246
11	132	131	131	165	158	161	221	212	217	250	246	248
12	135	131	133	172	165	168	217	213	215	251	247	249
13	137	133	135	177	172	175	218	215	217	252	247	250
14	133	123	128	181	177	180	224	218	221	254	248	252
15	123	110	116	187	181	184	---	---	---	250	237	244
16	110	105	108	192	187	191	---	---	---	238	234	235
17	115	107	112	197	192	195	---	---	---	240	234	237
18	117	113	115	202	197	200	---	---	---	244	239	242
19	123	116	119	207	199	204	---	---	---	245	236	242
20	132	123	127	212	205	210	228	222	226	238	234	237
21	141	132	136	205	192	197	230	227	229	241	237	239
22	149	141	144	196	193	194	232	227	230	244	240	242
23	156	149	152	197	192	194	238	231	234	245	240	243
24	161	156	159	202	197	201	238	235	237	247	243	245
25	165	161	163	208	202	206	240	230	239	245	242	244
26	171	165	168	229	208	212	244	236	241	245	242	244
27	175	171	173	230	216	221	236	228	231	246	243	245
28	180	175	178	222	217	220	236	230	233	258	243	249
29	185	180	183	226	222	224	236	231	234	246	242	244
30	190	179	188	229	223	226	240	236	238	245	242	244
31	---	---	---	226	221	224	241	237	240	---	---	---
MONTH	190	82	129	230	153	195	244	212	227	258	234	244
YEAR	279	63	183									

04063700 POPPLE RIVER NEAR FENCE, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Discharge, cfs (00060)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
02...	0940	--	53	10	731	10.5	84	7.9	219	4.3	--	--	--
NOV													
05...	0945	--	70	10	723	12.3	92	7.4	201	1.4	--	--	--
10...	1200	--	48	70	--	--	--	--	--	.1	24.2	13.5	.91
10...	1201	--	48	10	--	--	--	--	--	.1	24.7	13.6	.91
DEC													
03...	1030	--	49	10	735	13.2	93	7.2	194	-.1	--	--	--
31...	1215	46	--	70	--	--	--	--	--	.1	24.9	13.2	.88
31...	1216	46	--	50	--	--	--	--	--	.1	25.2	13.2	.88
31...	1217	46	--	10	--	--	--	--	--	.1	25.6	13.2	.88
JAN													
07...	1040	--	24	40	727	9.8	70	7.2	254	-.2	--	--	--
FEB													
03...	1030	--	32	40	719	10.4	75	7.0	235	-.2	--	--	--
MAR													
11...	1245	43	--	50	--	--	--	--	--	-.1	25.2	13.1	.99
11...	1246	43	--	70	--	--	--	--	--	-.1	26.2	13.2	.99
28...	0720	130	--	50	--	--	--	--	--	-.1	17.9	9.27	--
31...	1730	300	--	50	--	--	--	--	--	.2	8.87	4.59	--
APR													
13...	1000	--	358	10	727	12.7	95	6.8	70	1.5	--	--	--
13...	1045	--	358	10	--	--	--	--	--	1.5	7.40	3.88	--
13...	1047	--	358	50	--	--	--	--	--	1.5	7.79	4.02	--
13...	1049	--	358	70	--	--	--	--	--	1.5	7.76	4.01	--
MAY													
23...	1231	--	136	50	--	--	--	--	--	9.9	13.4	6.57	--
24...	0715	--	283	50	--	--	--	--	--	8.2	11.9	5.80	--
26...	0830	--	317	50	--	--	--	--	--	10.0	10.5	4.99	--
31...	1302	--	222	50	--	--	--	--	--	11.2	11.9	5.99	--
JUN													
02...	0940	--	321	10	724	9.4	90	6.9	86	11.0	--	--	--
02...	1917	--	313	50	--	--	--	--	--	14.8	10.8	5.27	--
10...	1335	--	134	70	--	--	--	--	--	18.0	15.3	7.70	--
10...	1345	--	134	70	--	--	--	--	--	18.0	16.3	7.48	--
14...	0210	--	156	50	--	--	--	--	--	17.4	17.9	8.12	--
16...	0137	--	182	50	--	--	--	--	--	18.8	15.1	7.02	--
JUL													
07...	0526	--	102	50	--	--	--	--	--	14.0	23.1	11.2	--
09...	0421	--	112	50	--	--	--	--	--	13.7	20.3	9.93	--
19...	1526	--	49	70	--	--	--	--	--	23.5	24.1	11.7	--
19...	1527	--	49	50	--	--	--	--	--	23.5	25.4	11.9	--
19...	1545	--	49	10	--	--	--	--	--	23.5	24.5	11.9	--
AUG													
13...	0940	--	50	10	728	8.7	88	7.9	226	14.0	--	--	--
SEP													
09...	0945	--	40	70	729	8.0	80	7.9	249	13.5	28.9	15.7	.95
22...	1315	--	38	50	--	--	--	--	--	19.8	28.6	14.7	--
22...	1330	--	38	70	--	--	--	--	--	20.0	28.7	14.7	--

04063700 POPPLE RIVER NEAR FENCE, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sodium, water, fltrd, mg/L (00930)	ANC, water, unfltrd Gran titr., ueq/L (00409)	Alka-linity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Chlor-ide, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite + nitrate water fltrd, mg/L as N (00631)
OCT													
02...	--	--	--	105	128	2.16	--	6.2	--	<.04	--	--	<.06
NOV													
05...	--	--	--	83	101	2.34	--	7.6	--	<.04	--	--	.67
10...	2.01	2,040	--	--	--	2.0	5.53	8.7	--	--	<.028	.05	--
10...	2.01	2,020	--	--	--	2.1	5.61	8.7	--	--	<.028	.05	--
DEC													
03...	--	--	--	81	99	2.29	--	10.2	--	<.04	--	--	.17
31...	1.92	1,980	--	--	--	2.0	6.37	9.1	--	--	.058	.20	--
31...	1.93	1,960	--	--	--	2.0	6.47	9.5	--	--	.053	.20	--
31...	1.94	1,980	--	--	--	2.1	6.54	9.3	--	--	.051	.21	--
JAN													
07...	--	--	--	124	151	2.62	--	9.3	--	.05	--	--	.20
FEB													
03...	--	--	--	123	150	2.45	--	8.4	--	.07	--	--	.21
MAR													
11...	1.92	2,150	--	--	--	1.6	6.42	7.7	--	--	.097	.19	--
11...	1.92	2,200	--	--	--	1.6	6.55	8.7	--	--	.125	.33	--
28...	--	1,450	--	--	--	1.5	4.94	7.2	--	--	.209	.41	--
31...	--	620	--	--	--	1.1	3.22	6.0	--	--	.154	.41	--
APR													
13...	--	--	--	22	27	1.87	--	5.3	--	<.04	--	--	.07
13...	--	453	--	--	--	1.8	3.39	6.0	--	--	.060	.05	--
13...	--	466	--	--	--	1.7	3.43	6.1	--	--	.034	.06	--
13...	--	463	--	--	--	1.8	3.45	6.1	--	--	.046	.06	--
MAY													
23...	--	1,030	--	--	--	1.1	3.40	5.3	--	--	.038	.07	--
24...	--	861	--	--	--	1.0	3.40	4.4	--	--	.055	.11	--
26...	--	715	--	--	--	1.1	3.35	3.6	--	--	.053	.04	--
31...	--	892	--	--	--	.8	3.16	3.9	--	--	.042	.05	--
JUN													
02...	--	--	--	34	42	.80	--	3.0	--	<.04	--	--	<.06
02...	--	753	--	--	--	.7	3.10	3.2	--	--	.045	<.03	--
10...	--	1,210	--	--	--	3.6	3.48	3.6	--	--	<.028	.07	--
10...	--	1,200	--	--	--	1.0	3.65	3.6	--	--	.057	.06	--
14...	--	1,300	--	--	--	1.0	3.98	3.6	--	--	.048	.06	--
16...	--	1,080	--	--	--	.9	3.80	2.8	--	--	.042	.04	--
JUL													
07...	--	1,820	--	--	--	1.4	4.08	4.6	--	--	<.028	<.03	--
09...	--	1,600	--	--	--	1.7	4.16	4.0	--	--	<.028	<.03	--
19...	--	1,980	--	--	--	1.4	3.40	4.7	--	--	<.028	<.03	--
19...	--	2,030	--	--	--	1.4	3.40	4.9	--	--	<.028	<.03	--
19...	--	1,980	--	--	--	1.3	3.33	4.8	--	--	.041	<.03	--
AUG													
13...	--	--	--	101	122	1.54	--	5.6	--	<.04	--	--	<.06
SEP													
09...	1.94	--	127	--	--	1.86	--	5.1	.23	<.04	--	--	<.06
22...	--	2,400	--	--	--	1.8	4.11	5.9	--	--	<.028	<.03	--
22...	--	2,450	--	--	--	1.8	4.09	6.3	--	--	<.028	<.03	--

04063700 POPPLE RIVER NEAR FENCE, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, wat unf by analysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Iron, water, fltrd, ug/L (01046)	Mercury water fltrd, ng/L (50287)
OCT													
02...	<.008	<.02	<.006	--	.011	.29	.2	<.1	.1	7.4	--	--	--
NOV													
05...	E.004	.02	<.006	--	.010	.29	.2	<.1	.2	6.5	--	--	--
10...	--	--	--	--	--	--	--	--	--	6.7	<27	--	--
10...	--	--	--	--	--	--	--	--	--	6.6	<27	--	--
DEC													
03...	<.008	<.02	<.006	--	.011	.70	.2	<.1	.2	17.1	--	--	--
31...	--	--	--	--	--	--	--	--	--	6.9	<27	--	--
31...	--	--	--	--	--	--	--	--	--	6.9	<27	--	--
31...	--	--	--	--	--	--	--	--	--	7.0	<27	--	--
JAN													
07...	<.008	<.02	E.005	--	.015	.45	.2	<.1	.2	6.7	--	--	--
FEB													
03...	<.008	<.02	E.003	--	.012	.46	.2	<.1	.2	3.5	--	--	--
MAR													
11...	--	--	--	--	--	--	--	--	--	5.7	<27	--	--
11...	--	--	--	--	--	--	--	--	--	3.8	<27	--	--
28...	--	--	--	--	--	--	--	--	--	8.1	46	--	--
31...	--	--	--	--	--	--	--	--	--	12.9	79	--	--
APR													
13...	E.005	.05	<.006	--	.024	.85	.4	<.1	.4	21.2	--	--	--
13...	--	--	--	--	--	--	--	--	--	21.3	86	--	--
13...	--	--	--	--	--	--	--	--	--	20.8	100	--	--
13...	--	--	--	--	--	--	--	--	--	21.0	149	--	--
MAY													
23...	--	--	--	--	--	--	--	--	--	21.8	106	--	--
24...	--	--	--	--	--	--	--	--	--	21.5	54	--	--
26...	--	--	--	--	--	--	--	--	--	24.8	102	--	--
31...	--	--	--	--	--	--	--	--	--	22.9	94	--	--
JUN													
02...	E.005	.05	<.006	--	.027	.84	.6	<.1	.6	25.6	--	--	--
02...	--	--	--	--	--	--	--	--	--	24.3	80	--	--
10...	--	--	--	--	--	--	--	--	--	23.2	88	--	--
10...	--	--	--	--	--	--	--	--	--	21.2	74	--	--
14...	--	--	--	--	--	--	--	--	--	22.5	40	--	--
16...	--	--	--	--	--	--	--	--	--	25.1	59	--	--
JUL													
07...	--	--	--	--	--	--	--	--	--	18.0	80	--	--
09...	--	--	--	--	--	--	--	--	--	18.6	47	--	--
19...	--	--	--	--	--	--	--	--	--	15.9	29	--	--
19...	--	--	--	--	--	--	--	--	--	13.5	75	--	--
19...	--	--	--	--	--	--	--	--	--	12.6	91	--	--
AUG													
13...	<.008	.06	<.006	--	.014	.34	.4	<.1	.4	7.0	--	--	--
SEP													
09...	--	--	<.02	<.04	--	--	--	--	--	--	--	147	.93
22...	--	--	--	--	--	--	--	--	--	14.7	<27	--	--
22...	--	--	--	--	--	--	--	--	--	5.6	<27	--	--

04063700 POPPLE RIVER NEAR FENCE, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Organic monomeric aluminum, wat unf ug/L (49288)	Methylmercury water fltrd, ng/L (50285)	Methylmercury suspnd sedimnt total, ng/L (62977)	Suspended sediment concentration mg/L (80154)
OCT				
02...	--	--	--	16
NOV				
05...	--	--	--	21
10...	<40	--	--	--
10...	<40	--	--	--
DEC				
03...	--	--	--	32
31...	<40	--	--	--
31...	<40	--	--	--
31...	<40	--	--	--
JAN				
07...	--	--	--	--
FEB				
03...	--	--	--	23
MAR				
11...	<40	--	--	--
11...	<40	--	--	--
28...	<40	--	--	--
31...	<40	--	--	--
APR				
13...	--	--	--	12
13...	<40	--	--	--
13...	<40	--	--	--
13...	<40	--	--	--
MAY				
23...	--	--	--	--
24...	--	--	--	--
26...	--	--	--	--
31...	--	--	--	--
JUN				
02...	--	--	--	22
02...	--	--	--	--
10...	--	--	--	--
10...	<40	--	--	--
14...	--	--	--	--
16...	--	--	--	--
JUL				
07...	--	--	--	--
09...	--	--	--	--
19...	<40	--	--	--
19...	<40	--	--	--
19...	--	--	--	--
AUG				
13...	--	--	--	26
SEP				
09...	--	.08	<.010	25
22...	--	--	--	--
22...	--	--	--	--

04064500 PINE RIVER BELOW PINE RIVER POWERPLANT NEAR FLORENCE, WI

LOCATION.--Lat 45°50'16", long 88°13'31", in SW ¼ SE ¼ sec.22, T.39 N., R.18 E., Florence County, Hydrologic Unit 04030108, on left bank 60 ft upstream from bridge on County Trunk Highway N, 1.9 mi downstream from powerplant of Wisconsin-Michigan Power Co., 6.0 mi south of Florence, and 7.0 mi downstream from Popple River.

DRAINAGE AREA.--533 mi^2.

PERIOD OF RECORD.--October 1923 to December 1975, October 1996 to current year.

REVISED RECORDS.--WDR WI-97-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,098.84 ft above mean NGVD of 1929. Prior to October 1968, record obtained from Pine River Powerplant 1.9 mi upstream with a drainage area of 528 mi^2.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow regulated by Pine River Powerplant 1.9 mi upstream; since storage capacity is small, monthly flows are not affected appreciably. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	247	279	301	e250	e180	e220	1,110	751	1,260	256	226	187
2	214	239	247	e250	e180	e240	1,160	672	1,130	224	238	193
3	252	247	267	e230	e140	e240	1,200	599	972	210	236	182
4	215	281	255	e230	e170	e240	1,070	607	797	338	249	183
5	222	320	247	e220	e180	e260	964	520	698	367	242	170
6	218	336	242	e160	e190	e230	1,010	501	598	408	177	159
7	203	242	213	e150	e160	e240	1,150	473	570	510	187	203
8	205	169	247	e150	e170	e230	1,360	435	491	491	177	177
9	203	224	238	e140	e170	e230	1,450	431	475	455	195	161
10	188	263	246	e140	e170	e240	1,380	444	465	374	217	189
11	177	285	e190	e130	e170	e250	1,260	471	432	350	234	182
12	214	261	e200	e170	e190	e240	1,130	456	429	308	213	154
13	214	286	e200	e150	e180	e240	992	501	439	289	239	136
14	218	213	e200	e180	e180	e230	948	636	625	306	219	154
15	224	290	e200	e180	e180	e250	936	760	664	264	194	203
16	207	290	e190	e180	e190	e250	975	751	644	282	178	319
17	181	290	e190	e170	e220	e260	1,100	673	612	253	193	329
18	197	344	e190	e180	e180	e240	1,190	575	535	245	261	261
19	187	497	e200	e190	e190	e240	1,430	531	438	208	216	239
20	200	541	e210	e190	e180	e240	1,490	493	376	229	209	203
21	168	481	e220	e190	e190	e240	1,580	442	365	233	203	179
22	193	426	e220	e180	e180	e230	1,510	447	411	275	167	176
23	185	403	e210	e180	e190	e250	1,380	599	390	244	177	162
24	211	423	e200	e170	e190	e220	1,180	1,060	357	246	166	182
25	187	296	e200	e190	e190	e230	1,100	1,070	350	207	166	180
26	175	372	e210	e150	e190	318	1,050	982	327	213	180	163
27	198	372	e220	e160	e180	372	959	840	292	196	183	159
28	191	363	e230	e190	e200	513	877	733	291	204	214	140
29	245	319	e240	e170	e210	911	811	652	263	184	171	177
30	267	267	e230	e190	---	1,090	784	592	234	159	180	136
31	243	---	e220	e180	---	1,080	---	801	---	227	170	---
TOTAL	6,449	9,619	6,873	5,590	5,290	10,264	34,536	19,498	15,930	8,755	6,277	5,638
MEAN	208	321	222	180	182	331	1,151	629	531	282	202	188
MAX	267	541	301	250	220	1,090	1,580	1,070	1,260	510	261	329
MIN	168	169	190	130	140	220	784	431	234	159	166	136
CFSM	0.39	0.60	0.42	0.34	0.34	0.62	2.16	1.18	1.00	0.53	0.38	0.35
IN.	0.45	0.67	0.48	0.39	0.37	0.72	2.41	1.36	1.11	0.61	0.44	0.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2004, BY WATER YEAR (WY)

MEAN	373	384	258	215	197	315	957	796	543	379	299	357
MAX	1,017	694	433	473	351	1,188	1,882	2,127	1,424	1,000	760	1,115
(WY)	(1929)	(1946)	(2002)	(1939)	(1969)	(1973)	(1967)	(1965)	(1939)	(1999)	(1938)	(1928)
MIN	100	185	139	120	80.7	74.5	325	209	190	117	80.3	108
(WY)	(1949)	(1964)	(1964)	(1964)	(1964)	(1964)	(1931)	(1998)	(1948)	(1934)	(1933)	(1998)

04064500 PINE RIVER BELOW PINE RIVER POWERPLANT NEAR FLORENCE, WI—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1924 - 2004	
ANNUAL TOTAL	126,826		134,719			
ANNUAL MEAN	347		368		423	
HIGHEST ANNUAL MEAN					658	1960
LOWEST ANNUAL MEAN					210	1931
HIGHEST DAILY MEAN	1,730	Apr 21	1,580	Apr 21	4,440	Apr 19, 2002
LOWEST DAILY MEAN	(a)92	Jan 23, 26	130	Jan 11	0.00	(b)Jan 20, 1924
ANNUAL SEVEN-DAY MINIMUM	(a)104	Jan 22	(a)147	Jan 7	41	Aug 4, 1936
MAXIMUM PEAK FLOW			1,680	Apr 21	(c)4,850	Apr 19, 2002
MAXIMUM PEAK STAGE			5.52	Apr 21	9.37	Apr 19, 2002
ANNUAL RUNOFF (CFSM)	0.652		0.691		0.794	
ANNUAL RUNOFF (INCHES)	8.85		9.40		10.79	
10 PERCENT EXCEEDS	714		887		878	
50 PERCENT EXCEEDS	224		238		295	
90 PERCENT EXCEEDS	150		170		152	

(a) Ice affected
(b) No flow at times during 1924, 1926-27, 1930-31, 1933, 1940
(c) From rating curve extended above 3,600 ft^3/s
(e) Estimated due to ice effect or missing record

04065106 MENOMINEE RIVER AT NIAGARA, WI

LOCATION.--Lat 45°46'04", long 87°58'50", in NE $^1/_4$ NE $^1/_4$ sec.15, T.38 N., R.20 E., Marinette County, Hydrologic Unit 04030108, on right bank 0.7 mi downstream from Little Quinnesec Falls Dam, at Niagara.

DRAINAGE AREA.--2,470 mi^2.

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 880 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). 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 smaller reservoirs upstream of gage. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,230	1,340	1,430	1,550	e1,800	e1,700	3,460	4,070	6,050	1,670	1,460	1,300
2	1,210	1,330	1,260	1,520	e1,800	e1,800	3,540	4,150	6,840	1,750	1,650	1,310
3	1,380	1,380	1,200	1,600	e1,700	e1,900	3,820	4,010	6,050	1,690	1,560	1,310
4	1,250	1,530	1,250	1,580	e1,700	e2,000	3,780	3,880	5,420	1,700	1,510	1,180
5	1,260	1,630	1,650	1,780	e1,700	2,380	3,780	4,010	4,950	1,930	1,490	1,290
6	1,270	1,610	1,430	1,810	e1,700	2,300	3,790	3,570	4,070	1,940	1,490	1,340
7	1,270	1,590	1,250	1,580	e1,700	2,210	3,810	3,480	3,710	2,420	1,370	1,340
8	1,270	1,460	1,460	e1,500	e1,800	2,130	4,060	2,660	3,610	2,310	1,320	1,290
9	1,190	1,290	1,660	e1,600	e1,700	2,220	4,860	2,580	3,910	2,200	1,440	1,160
10	1,250	1,310	1,330	e1,400	e1,600	2,330	4,920	2,560	3,360	2,070	1,440	1,140
11	1,230	1,380	1,340	e1,500	e1,600	e2,300	4,950	2,530	3,380	2,000	1,360	1,190
12	1,300	1,430	1,230	e1,700	e1,600	2,230	4,990	2,590	2,730	1,970	1,370	1,170
13	1,350	1,420	1,200	e1,700	e1,700	2,030	4,600	2,540	2,950	1,790	1,380	1,040
14	1,430	1,460	1,200	e1,700	e1,600	2,060	4,250	2,860	3,270	1,840	1,440	1,070
15	1,310	1,410	1,250	e1,800	e1,700	1,960	3,760	3,670	3,330	1,760	1,400	1,320
16	1,340	1,480	1,510	e1,800	e1,600	2,070	4,150	3,750	2,940	1,710	1,410	1,450
17	1,240	1,520	1,490	e1,900	e1,700	1,990	4,750	3,720	3,010	1,670	1,460	1,540
18	1,280	1,590	1,470	e1,900	e1,600	1,950	5,030	3,330	2,350	1,660	1,530	1,430
19	1,330	1,980	1,530	e1,800	e1,600	2,090	6,490	3,200	2,230	1,790	1,420	1,280
20	1,370	2,240	1,260	e1,800	e1,700	1,890	10,100	3,160	2,000	1,720	1,320	1,450
21	1,210	2,160	1,400	e1,800	e1,600	1,910	12,100	3,080	1,970	1,860	1,410	1,340
22	1,210	2,150	1,260	e1,800	e1,600	1,870	11,400	2,780	1,860	1,750	1,310	1,280
23	1,230	2,160	1,490	e1,800	e1,800	1,880	10,200	3,310	1,750	1,540	1,450	1,260
24	1,230	2,200	1,450	e1,800	e1,700	1,860	8,130	4,750	1,810	1,500	1,320	1,160
25	1,250	1,960	1,350	e1,800	e1,700	1,900	7,770	5,030	1,830	1,420	1,380	1,190
26	1,160	1,630	1,240	e1,800	e1,700	2,010	7,190	4,730	1,720	1,360	1,260	1,160
27	1,240	1,680	1,300	e1,800	e1,700	2,310	6,160	4,000	1,700	1,430	1,410	1,040
28	1,180	1,690	1,500	e1,700	e1,700	2,580	6,130	3,580	1,720	1,440	1,300	1,150
29	1,230	1,580	1,650	e1,600	e1,700	3,360	5,160	3,590	1,730	1,460	1,340	1,160
30	1,230	1,550	1,720	e1,800	---	3,420	4,410	3,610	1,770	1,490	1,290	1,100
31	1,230	---	1,630	e1,900	---	3,370	---	4,050	---	1,520	1,250	---
TOTAL	39,160	49,140	43,390	53,120	48,800	68,010	171,540	108,830	94,020	54,360	43,540	37,440
MEAN	1,263	1,638	1,400	1,714	1,683	2,194	5,718	3,511	3,134	1,754	1,405	1,248
MAX	1,430	2,240	1,720	1,900	1,800	3,420	12,100	5,030	6,840	2,420	1,650	1,540
MIN	1,160	1,290	1,200	1,400	1,600	1,700	3,460	2,530	1,700	1,360	1,250	1,040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2004, BY WATER YEAR (WY)

MEAN	1,777	1,724	1,690	1,711	1,841	2,082	4,033	3,675	2,564	2,022	1,640	1,573
MAX	3,689	2,531	2,458	2,258	2,286	2,800	7,476	7,555	4,184	3,547	2,290	2,225
(WY)	(2003)	(1993)	(1993)	(1993)	(1997)	(2000)	(2002)	(1996)	(1993)	(1999)	(1996)	(1994)
MIN	1,151	1,245	1,161	1,369	1,391	1,553	1,953	1,175	1,587	1,176	1,080	1,180
(WY)	(2001)	(2001)	(2001)	(1995)	(1995)	(2001)	(1994)	(1998)	(1998)	(2003)	(1998)	(2003)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1993 - 2004	
ANNUAL TOTAL	722,541		811,350			
ANNUAL MEAN	1,980		2,217		2,194	
HIGHEST ANNUAL MEAN					3,135	1996
LOWEST ANNUAL MEAN					1,707	1998
HIGHEST DAILY MEAN	9,730	May 14	12,100	Apr 21	18,400	Apr 19, 2002
LOWEST DAILY MEAN	826	Sep 11	1,040	Sep 13, 17	826	Sep 11, 2003
ANNUAL SEVEN-DAY MINIMUM	997	Sep 6	1,140	Sep 24	951	May 24, 1998
MAXIMUM PEAK FLOW			12,400	Apr 21	18,900	Apr 18, 2002
MAXIMUM PEAK STAGE			13.21	Apr 21	16.22	Apr 18, 2002
10 PERCENT EXCEEDS	3,340		4,000		3,540	
50 PERCENT EXCEEDS	1,500		1,700		1,790	
90 PERCENT EXCEEDS	1,150		1,250		1,200	

(e) Estimated due to ice effect or missing record

04065722 MENOMINEE RIVER NEAR VULCAN, MI

LOCATION.--Lat 45°44'12", long 87°51'48", sec.34, T.39 N., R.29 W., Michigan Meridian, Dickinson County, Hydrologic Unit 04030108, on left bank 0.35 mi downstream from Sturgeon Falls Dam, 3.0 mi south of Vulcan, and at mile 78.7.

DRAINAGE AREA.--2,900 mi^2.

PERIOD OF RECORD.--December 1987 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 820 ft above sea level, from topographic map.

REMARKS.--Records good (see page 11). 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 smaller reservoirs upstream from station. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,310	1,360	1,550	1,620	1,900	1,840	5,410	5,030	7,380	1,850	1,530	1,390
2	1,260	1,350	1,270	1,650	1,860	1,930	5,510	4,970	8,560	1,920	1,710	1,440
3	1,330	1,400	1,230	1,740	1,820	2,040	6,070	4,840	7,960	1,880	1,750	1,430
4	1,330	1,570	1,380	1,680	1,840	2,150	6,000	4,520	6,960	1,910	1,570	1,390
5	1,220	1,670	1,630	1,790	1,830	2,450	5,800	4,830	6,320	2,200	1,530	1,380
6	1,340	1,870	1,590	1,900	1,830	2,410	5,500	4,110	5,070	2,290	1,530	1,390
7	1,260	1,730	1,270	1,640	1,760	2,270	5,750	4,230	4,750	2,710	1,430	1,460
8	1,310	1,570	1,540	1,610	1,890	2,220	5,980	3,280	4,390	2,830	1,380	1,530
9	1,170	1,280	1,700	1,730	1,830	2,380	6,970	3,240	4,480	2,560	1,480	1,250
10	1,230	1,460	1,420	1,450	1,740	2,460	7,220	2,980	4,100	2,450	1,570	1,250
11	1,230	1,420	1,320	1,570	1,700	2,430	7,010	3,070	4,240	2,280	1,380	1,260
12	1,360	1,440	1,240	1,810	1,730	2,380	6,790	3,070	3,190	2,270	1,490	1,290
13	1,340	1,650	1,230	1,850	1,780	2,130	6,180	3,060	3,400	2,020	1,450	1,150
14	1,470	1,560	1,230	1,780	1,690	2,160	5,660	3,320	4,100	2,180	1,480	1,080
15	1,280	1,470	1,260	1,860	1,810	2,080	5,040	4,340	3,980	2,010	1,550	1,270
16	1,380	1,640	1,550	1,920	1,750	2,170	5,280	4,450	3,600	1,990	1,490	1,650
17	1,220	1,590	1,500	1,970	1,850	2,090	6,160	4,450	3,700	1,870	1,520	1,650
18	1,240	1,710	1,540	2,010	1,700	2,090	6,390	3,910	2,810	1,910	1,590	1,600
19	1,360	2,120	1,590	1,910	1,760	2,180	7,480	3,810	2,690	2,010	1,520	1,460
20	1,400	2,580	1,350	1,900	1,860	1,990	10,900	3,680	2,370	1,750	1,490	1,450
21	1,200	2,480	1,410	1,870	1,720	2,010	13,300	3,730	2,490	2,160	1,390	1,610
22	1,170	2,400	1,300	1,900	1,750	1,970	13,500	3,220	2,150	1,990	1,360	1,410
23	1,280	2,470	1,470	2,020	1,860	2,030	11,900	3,920	2,080	1,660	1,390	1,240
24	1,130	2,560	1,500	1,890	1,810	1,960	10,100	6,060	2,070	1,630	1,450	1,310
25	1,260	2,390	1,350	1,880	1,760	1,990	8,990	6,900	2,130	1,540	1,370	1,130
26	1,180	1,840	1,250	1,850	1,830	2,210	8,570	6,650	1,990	1,420	1,390	1,280
27	1,220	1,860	1,300	1,860	1,780	2,620	7,230	5,600	1,950	1,510	1,580	1,250
28	1,220	1,910	1,560	1,790	1,770	2,960	7,460	4,980	1,940	1,490	1,670	1,090
29	1,190	1,760	1,750	1,740	1,750	4,360	6,280	4,850	1,950	1,560	1,500	1,140
30	1,330	1,740	1,900	1,930	---	4,820	5,420	4,650	2,000	1,560	1,470	1,190
31	1,280	---	1,850	2,000	---	4,910	---	4,890	---	1,620	1,370	---
TOTAL	39,500	53,850	45,030	56,120	51,960	75,690	219,850	134,640	114,800	61,030	46,380	40,420
MEAN	1,274	1,795	1,453	1,810	1,792	2,442	7,328	4,343	3,827	1,969	1,496	1,347
MAX	1,470	2,580	1,900	2,020	1,900	4,910	13,500	6,900	8,560	2,830	1,750	1,650
MIN	1,130	1,280	1,230	1,450	1,690	1,840	5,040	2,980	1,940	1,420	1,360	1,080

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2004, BY WATER YEAR (WY)

MEAN	2,001	2,158	2,053	1,967	2,021	2,505	4,783	3,973	2,915	2,149	1,701	1,772
MAX	4,574	4,412	3,008	2,533	2,548	3,701	9,292	8,850	4,832	4,196	2,598	2,456
(WY)	(2003)	(1989)	(1989)	(1993)	(1997)	(2000)	(2002)	(1996)	(1993)	(1999)	(1996)	(1994)
MIN	1,081	1,382	1,376	1,489	1,442	1,855	1,356	1,344	1,062	1,100	1,184	1,223
(WY)	(1990)	(1990)	(2001)	(1995)	(1995)	(2001)	(1990)	(1998)	(1988)	(1988)	(1998)	(1989)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1988 - 2004	
ANNUAL TOTAL	849,905		939,270			
ANNUAL MEAN	2,329		2,566		2,534	
HIGHEST ANNUAL MEAN					3,781	1996
LOWEST ANNUAL MEAN					1,864	1990
HIGHEST DAILY MEAN	11,100	May 14	13,500	Apr 22	22,800	Apr 19, 2002
LOWEST DAILY MEAN	884	Sep 12	1,080	Sep 14	846	Aug 3, 1988
ANNUAL SEVEN-DAY MINIMUM	1,030	Aug 31	1,200	Sep 24	932	Oct 1, 1989
MAXIMUM PEAK FLOW			14,100	Apr 21	23,000	Apr 19, 2002
MAXIMUM PEAK STAGE			14.20	Apr 21	17.72	Apr 19, 2002
INSTANTANEOUS LOW FLOW			414	Nov 13	414	Nov 13, 2003
10 PERCENT EXCEEDS	4,230		5,410		4,240	
50 PERCENT EXCEEDS	1,760		1,830		2,030	
90 PERCENT EXCEEDS	1,190		1,280		1,310	

04066003 MENOMINEE RIVER BELOW PEMENE CREEK NEAR PEMBINE, WI

LOCATION.--Lat 45°34'46", long 87°47'13", in NE $\frac{1}{4}$, sec.29, T. 37 N., R.28 W., Michigan Meridian, Menominee County, MI, Hydrologic Unit 04030108, on left bank 40 ft downstream from County Trunk Z bridge, 0.9 mi downstream from Pemene Creek, 3.9 mi west of Nathan, MI, 10.6 mi southeast of Pembine, and at mile 64.3.

DRAINAGE AREA.--3,140 mi^2.

PERIOD OF RECORD.--October 1949 to current year. Published as "near Pembine" (04066000) prior to August 1982. Monthly discharges for some periods published in WSP 1307.

GAGE.--Water-stage recorder. Elevation of gage is 740 ft above NGVD of 1929, from topographic map. October 1949 to Oct. 27, 1972, water-stage recorder at site 1.0 mi upstream at elevation 745, from river-profile map, and Oct. 28, 1972, to August 1982, water-stage recorder at site 1.5 mi upstream at elevation 770, from river-profile map.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow regulated by powerplants and by Michigamme Reservoir, capacity, 119,950 acre-ft, and Peavy Pond, capacity, 33,860 acre-ft, on the Michigamme River, and by many smaller reservoirs above station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,530	1,570	1,820	e1,600	e1,700	e1,900	5,980	5,330	7,650	2,010	1,560	1,460
2	1,430	1,520	1,800	e1,900	e1,700	e2,000	6,280	5,130	9,320	2,030	1,730	1,510
3	1,410	1,540	1,750	e1,700	e1,700	e2,200	6,960	5,010	8,980	2,010	2,020	1,570
4	1,610	1,700	2,700	e1,500	e1,700	e2,300	6,890	4,720	7,630	2,140	1,730	1,490
5	1,310	1,880	2,160	e1,700	e1,700	e2,600	6,630	4,890	6,830	2,490	1,530	1,480
6	1,440	2,070	e1,900	e1,500	e1,700	e2,600	6,380	4,400	5,690	2,540	1,570	1,510
7	1,360	2,090	e1,600	e1,400	e1,700	e2,500	6,490	4,380	4,980	2,940	1,540	1,520
8	1,370	1,780	e1,500	e1,600	e1,700	e2,400	6,720	3,710	4,520	3,100	1,510	1,730
9	1,370	1,630	e1,700	e1,700	e1,700	e2,600	7,810	3,280	4,560	2,790	1,510	1,280
10	1,240	1,630	e1,600	e1,700	e1,700	e2,700	8,150	3,230	4,520	2,730	1,700	1,360
11	1,310	1,650	e1,600	e1,600	e1,600	e2,700	7,770	3,260	4,310	2,420	1,520	1,350
12	1,500	1,660	e1,500	e1,900	e1,600	e2,600	7,410	3,210	3,610	2,420	1,460	1,360
13	1,410	1,830	e1,600	e2,000	e1,700	e2,400	6,710	3,260	3,540	2,190	1,540	1,310
14	1,470	1,690	e1,600	e1,900	e1,700	e2,400	6,140	3,430	4,200	2,400	1,560	1,200
15	1,610	1,700	e1,600	e2,000	e1,700	e2,300	5,420	4,260	4,430	2,160	1,600	1,220
16	1,340	1,810	e1,600	e2,000	e1,700	2,370	5,600	4,600	3,890	2,190	1,550	1,740
17	1,470	1,790	e1,700	e2,000	e1,700	2,290	6,550	4,580	4,160	1,960	1,630	1,750
18	1,350	1,870	e1,600	e2,000	e1,700	2,280	6,700	4,170	3,680	2,040	1,630	1,720
19	1,370	2,260	e1,600	e1,900	e1,700	2,270	7,680	3,980	2,870	2,060	1,680	1,600
20	1,440	2,800	e1,500	e2,000	e1,800	2,150	11,000	3,810	2,790	1,960	1,640	1,450
21	1,480	2,700	e1,500	e1,900	e1,700	2,170	13,500	3,910	2,610	2,040	1,490	1,590
22	1,340	2,630	e1,700	e1,800	e1,800	2,140	14,200	3,530	2,320	2,150	1,440	1,600
23	1,350	2,730	e1,500	e1,800	e1,900	2,170	12,800	3,760	2,340	1,760	1,400	1,310
24	1,340	2,810	e1,600	e1,800	e1,800	2,110	11,000	6,470	2,230	1,710	1,560	1,420
25	1,410	2,740	e1,400	e1,800	e1,800	2,110	9,480	7,730	2,350	1,690	1,470	1,260
26	1,410	2,110	e1,500	e1,800	e1,800	2,350	9,210	7,530	2,160	1,570	1,540	1,280
27	1,350	2,060	e1,500	e1,800	e1,800	2,760	7,780	6,600	2,090	1,510	1,610	1,420
28	1,460	2,170	e1,700	e1,800	e1,700	3,090	7,680	5,540	2,090	1,540	1,860	1,230
29	1,370	2,050	e1,600	e1,700	e1,800	4,640	6,750	5,250	2,070	1,590	1,680	1,170
30	1,450	1,970	e1,900	e1,700	---	5,420	5,770	4,970	2,110	1,550	1,660	1,210
31	1,450	---	e1,700	e1,800	---	5,530	---	5,190	---	1,640	1,520	---
TOTAL	43,750	60,440	52,030	55,300	50,000	82,050	237,440	143,120	124,530	65,330	49,440	43,100
MEAN	1,411	2,015	1,678	1,784	1,724	2,647	7,915	4,617	4,151	2,107	1,595	1,437
MAX	1,610	2,810	2,700	2,000	1,900	5,530	14,200	7,730	9,320	3,100	2,020	1,750
MIN	1,240	1,520	1,400	1,400	1,600	1,900	5,420	3,210	2,070	1,510	1,400	1,170

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2004, BY WATER YEAR (WY)

MEAN	2,452	2,563	2,261	2,105	2,097	2,629	5,642	4,785	3,366	2,506	2,066	2,250
MAX	5,660	5,766	3,939	3,035	3,810	7,461	10,000	12,100	6,118	6,523	3,505	5,335
(WY)	(1986)	(1986)	(1986)	(1986)	(1984)	(1973)	(1967)	(1960)	(1953)	(1953)	(1952)	(1968)
MIN	1,028	1,043	1,167	1,080	1,201	1,461	1,432	1,341	1,152	1,201	1,003	1,009
(WY)	(1977)	(1977)	(1977)	(1977)	(1964)	(1964)	(1990)	(1987)	(1988)	(1988)	(1977)	(1976)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1950 - 2004	
ANNUAL TOTAL	933,970		1,006,530			
ANNUAL MEAN	2,559		2,750		2,893	
HIGHEST ANNUAL MEAN					4,318	1960
LOWEST ANNUAL MEAN					1,778	1977
HIGHEST DAILY MEAN	11,900	May 14	14,200	Apr 22	26,700	May 8, 1960
LOWEST DAILY MEAN	1,040	Sep 4	1,170	Sep 29	840	Aug 14, 1977
ANNUAL SEVEN-DAY MINIMUM	1,170	Sep 7	1,280	Sep 24	914	Aug 8, 1977
MAXIMUM PEAK FLOW			14,500	Apr 22	(a)26,900	May 8, 1960
MAXIMUM PEAK STAGE			13.53	Apr 22	(b)18.94	Dec 17, 1985
10 PERCENT EXCEEDS	4,630		5,830		4,920	
50 PERCENT EXCEEDS	1,900		1,800		2,300	
90 PERCENT EXCEEDS	1,310		1,430		1,430	

(a) Gage height, 13.90 ft, site and datum then in use
(b) Ice affected
(e) Estimated due to ice effect or missing record

04066030 MENOMINEE RIVER AT WHITE RAPIDS DAM NEAR BANAT, MI

LOCATION.--Lat 45°28'55", long 87°48'08", in SE ¼ SE ¼, sec.30, T. 36 N., R.28 W., Michigan Meridian, Menominee County, Hydrologic Unit 04030108, on left bank at powerplant at White Rapids Dam, 5.7 mi southwest of Banat, MI.

DRAINAGE AREA.--3,190 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 680.00 ft above NGVD of 1929 (levels by Wisconsin Electric Power Company).

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft, on the Michigamme River, and by many smaller reservoirs above station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,700	1,730	2,030	1,770	e2,000	e2,000	6,010	5,450	7,630	2,190	1,630	1,600
2	1,600	1,650	1,580	2,230	e2,000	e2,000	6,590	5,220	9,200	2,070	1,790	1,460
3	1,410	1,510	1,250	2,010	e1,900	e2,200	7,310	5,130	9,060	2,110	2,030	1,640
4	1,490	2,020	1,420	1,650	e1,800	2,620	7,020	5,040	7,690	2,310	1,780	1,510
5	1,550	1,940	1,770	2,100	e1,900	2,730	6,910	4,740	6,780	2,660	1,650	1,500
6	1,470	1,980	2,040	1,780	e2,000	2,730	6,440	4,710	5,940	2,610	1,840	1,530
7	1,590	2,250	1,620	e1,500	e2,000	2,730	6,860	4,310	4,930	2,910	1,570	1,690
8	1,580	1,970	1,640	e1,500	e2,000	2,670	6,700	3,970	4,890	3,390	1,270	1,650
9	1,490	1,640	1,890	e1,800	e1,900	2,630	8,110	3,370	4,470	2,900	1,460	1,390
10	1,400	1,590	2,050	e1,800	e1,900	2,560	8,280	3,490	4,930	2,640	1,750	1,390
11	1,320	1,710	1,680	e1,600	e1,900	2,710	7,730	3,240	4,240	2,820	1,620	1,370
12	1,820	1,710	1,190	1,870	e1,900	2,760	7,660	3,300	3,880	2,220	1,620	1,390
13	1,560	1,760	1,290	2,180	e1,900	2,410	6,870	3,400	3,440	2,520	1,460	1,470
14	1,440	1,910	1,500	2,130	e1,800	2,330	6,440	3,440	4,320	2,320	1,660	1,220
15	1,670	1,900	1,680	1,990	e1,800	2,640	5,660	4,340	4,960	2,480	1,630	1,140
16	1,500	1,870	1,650	2,020	e1,800	2,350	5,810	4,630	3,820	2,070	1,600	1,640
17	1,520	1,890	2,080	2,150	e2,100	2,340	6,620	4,650	4,510	2,310	1,440	1,770
18	1,550	1,920	1,670	2,320	e2,000	2,480	6,810	4,390	4,350	2,120	1,900	1,510
19	1,520	2,420	1,870	2,220	e2,000	2,400	7,750	3,990	2,780	2,170	1,520	1,710
20	1,410	2,760	1,580	e2,100	e2,000	2,260	10,500	3,880	3,090	2,240	1,630	1,560
21	1,410	2,760	1,600	e1,800	e2,000	2,150	12,800	3,800	2,480	1,770	1,620	1,500
22	1,540	2,770	1,780	e1,900	e2,000	2,240	13,800	3,930	2,820	2,440	1,430	1,520
23	1,270	2,960	1,770	e1,700	e1,900	2,260	12,500	3,670	2,410	1,780	1,400	1,310
24	1,450	2,780	1,650	e2,000	e1,900	2,240	10,900	6,530	2,290	1,800	1,610	1,240
25	1,390	2,880	1,650	e2,000	e2,200	2,190	9,470	7,840	2,440	1,680	1,530	1,260
26	1,390	2,240	1,440	e1,900	e2,000	2,570	9,080	7,720	2,350	1,690	1,490	1,240
27	1,420	2,290	1,480	e2,000	e1,900	2,790	7,900	6,760	2,190	1,630	1,800	1,380
28	1,440	2,130	1,940	e2,000	e2,000	3,280	7,570	5,630	2,350	1,490	1,860	1,280
29	1,710	2,100	2,160	e1,900	e2,000	4,820	6,760	5,450	1,970	1,750	1,800	1,240
30	1,460	2,100	2,020	e1,800	---	5,770	5,880	4,980	2,130	1,680	1,500	1,170
31	1,480	---	2,400	e1,900	---	5,900	---	5,260	---	1,610	1,660	---
TOTAL	46,550	63,140	53,370	59,620	56,500	85,760	238,740	146,260	128,340	68,380	50,550	43,280
MEAN	1,502	2,105	1,722	1,923	1,948	2,766	7,958	4,718	4,278	2,206	1,631	1,443
MAX	1,820	2,960	2,400	2,320	2,200	5,900	13,800	7,840	9,200	3,390	2,030	1,770
MIN	1,270	1,510	1,190	1,500	1,800	2,000	5,660	3,240	1,970	1,490	1,270	1,140

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2004, BY WATER YEAR (WY)

MEAN	2,081	1,974	1,845	1,914	2,153	2,865	5,880	4,512	3,208	2,472	1,957	1,716
MAX	4,909	2,882	2,619	2,068	2,345	4,118	9,373	6,120	4,278	4,584	2,674	2,237
(WY)	(2003)	(2003)	(2002)	(2002)	(1999)	(2000)	(2002)	(2002)	(2004)	(1999)	(2002)	(2000)
MIN	1,417	1,659	1,493	1,774	1,948	2,065	3,147	2,156	2,087	1,395	1,436	1,410
(WY)	(2001)	(1999)	(2001)	(1999)	(2004)	(2001)	(2000)	(2000)	(2000)	(2003)	(2001)	(2001)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1999 - 2004	
ANNUAL TOTAL	941,764		1,040,490			
ANNUAL MEAN	2,580		2,843		2,714	
HIGHEST ANNUAL MEAN					3,244	2002
LOWEST ANNUAL MEAN					2,253	2001
HIGHEST DAILY MEAN	11,500	May 14	13,800	Apr 22	20,800	Apr 19, 2002
LOWEST DAILY MEAN	954	Sep 6	1,140	Sep 15	954	Sep 6, 2003
ANNUAL SEVEN-DAY MINIMUM	1,150	Sep 5	1,260	Sep 24	1,110	Sep 2, 2001
MAXIMUM PEAK FLOW			14,400	Apr 22	22,200	Apr 18, 2002
MAXIMUM PEAK STAGE			12.68	Apr 22	14.98	Apr 18, 2002
10 PERCENT EXCEEDS	4,610		5,960		4,670	
50 PERCENT EXCEEDS	1,940		2,000		2,090	
90 PERCENT EXCEEDS	1,330		1,460		1,390	

(e) Estimated due to ice effect or missing record

04066500 PIKE RIVER AT AMBERG, MI

LOCATION.--Lat 45°30'00", long 88°00'00", in SE ¼ SE ¼ , sec.16, T. 35 N., R.20 E., Marinette County, WI, Hydrologic Unit 04030108, on right bank 35 ft upstream from bridge on County Trunk Highway V, 0.4 mi southwest of Amberg.

DRAINAGE AREA.--255 mi^2.

PERIOD OF RECORD.--February 1914 to September 1970, June 2000 to current year.

REVISED RECORDS.--WSP 699: 1927. WSP 1207: Drainage area. WSP 1337: 1914(M), 1916-19(M), 1921-24(M), 1926(M), 1928(M), 1929, 1930(M), 1931, 1932-33(M), 1935, 1936-37(M), 1938, 1939-36(M).

GAGE.--Water-stage recorder. Elevation of gage is 855 ft above NGVD of 1929, from topographic map. Oct. 7, 1946 to Sept. 30, 1970, water-stage recorder at site 0.5 mi downstream at elevation 865 ft above mean NGVD of 1929 (from survey level line along railroad). See WSP 1727 for history of changes prior to Oct. 7, 1946.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	202	146	e140	e160	e110	e150	788	347	669	175	140	138
2	187	141	e180	e180	e110	e150	828	323	812	166	157	134
3	170	139	e240	e170	e110	e150	788	300	701	159	220	130
4	164	158	e200	e140	e110	e150	747	283	523	242	212	124
5	158	194	e170	e130	e110	e160	669	267	409	311	172	120
6	151	209	e150	e120	e110	e170	643	256	345	290	145	122
7	146	189	e140	e120	e110	e170	714	247	306	318	133	122
8	144	162	e140	e120	e110	e170	815	246	275	301	128	121
9	142	e170	e140	e120	e110	e170	864	249	277	257	129	118
10	137	e170	e140	e120	e110	e180	820	276	306	225	135	114
11	143	163	e130	e120	e110	e180	686	291	286	202	131	112
12	153	158	e120	e120	e110	e170	564	276	267	190	130	111
13	158	163	e140	e120	e110	e170	474	274	280	185	126	110
14	150	158	e160	e120	e110	e180	435	301	349	192	121	108
15	146	152	e160	e120	e110	e180	429	327	356	179	121	140
16	143	158	e150	e120	e110	e180	444	310	319	170	115	158
17	139	167	e150	e120	e120	e180	484	282	439	178	115	152
18	142	180	e140	e110	e130	e180	520	257	428	169	119	140
19	139	205	e140	e110	e130	e180	559	235	358	161	123	130
20	137	203	e140	e110	e130	e190	558	226	304	178	120	122
21	137	188	e140	e110	e140	e190	557	230	264	183	113	117
22	133	175	e140	e110	e140	e190	586	233	243	181	110	114
23	131	e170	e140	e110	e140	e190	542	349	227	163	108	111
24	131	e170	e140	e110	e140	e200	470	718	219	147	108	109
25	129	e160	e150	e110	e150	e200	440	956	212	139	148	109
26	128	e170	e150	e110	e150	e220	441	880	202	134	176	107
27	126	e160	e160	e110	e150	e250	411	634	191	130	193	107
28	131	e160	e170	e100	e150	296	379	492	183	126	204	110
29	146	e150	e190	e100	e150	503	357	397	179	123	173	107
30	155	e150	e190	e100	---	661	346	339	180	123	155	106
31	150	---	e170	e110	---	714	---	434	---	135	146	---
TOTAL	4,548	5,038	4,810	3,730	3,580	7,024	17,358	11,235	10,109	5,832	4,426	3,623
MEAN	147	168	155	120	123	227	579	362	337	188	143	121
MAX	202	209	240	180	150	714	864	956	812	318	220	158
MIN	126	139	120	100	110	150	346	226	179	123	108	106
CFSM	0.58	0.66	0.61	0.47	0.48	0.89	2.27	1.42	1.32	0.74	0.56	0.47
IN.	0.66	0.73	0.70	0.54	0.52	1.02	2.53	1.64	1.47	0.85	0.65	0.53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2004, BY WATER YEAR (WY)

MEAN	179	205	158	132	123	212	464	340	269	180	155	170
MAX	454	422	296	215	194	503	1,016	820	699	525	365	452
(WY)	(1942)	(1920)	(1929)	(1939)	(1942)	(1921)	(1922)	(1960)	(1916)	(1914)	(1914)	(1941)
MIN	83.2	119	93.5	82.7	78.1	98.8	188	181	111	90.2	80.3	89.1
(WY)	(1949)	(1954)	(1918)	(1964)	(1948)	(1964)	(1931)	(1925)	(1948)	(1948)	(1934)	(1948)

04066500 PIKE RIVER AT AMBERG, MI—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1914 - 2004	
ANNUAL TOTAL	70,300		81,313			
ANNUAL MEAN	193		222		215	
HIGHEST ANNUAL MEAN					344	1916
LOWEST ANNUAL MEAN					133	1931
HIGHEST DAILY MEAN	875	Apr 18	956	May 25	2,620	Apr 11, 1922
LOWEST DAILY MEAN	(a)76	Jan 26	(a)100	Jan 28	26	Dec 27, 1925
ANNUAL SEVEN-DAY MINIMUM	(a)78	Jan 21	(a)106	Jan 24	(a)53	Mar 5, 1928
MAXIMUM PEAK FLOW			1,020	May 25	(b)2,800	Apr 10, 1922
MAXIMUM PEAK STAGE			6.01	May 25	(c)(d)7.80	Apr 10, 1922
INSTANTANEOUS LOW FLOW			(a)		26	Dec 27, 1925
ANNUAL RUNOFF (CFSM)	0.755		0.871		0.843	
ANNUAL RUNOFF (INCHES)	10.26		11.86		11.45	
10 PERCENT EXCEEDS	362		439		396	
50 PERCENT EXCEEDS	146		160		160	
90 PERCENT EXCEEDS	88		110		100	

(a) Ice affected
(b) From rating curve extended above 1,100 ft^3/s
(c) Site and datum then in use
(d) From graph based on gage readings
(e) Estimated due to ice effect or missing record

04066500 PIKE RIVER AT AMBERG, WI—Continued
(NATIONAL WATER-QUALITY ASSESSMENT STATION)

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--November 2002 to current year.

REMARKS.--Chemical analysis of some constituents done by the National Water-Quality Laboratory, and Wisconsin District Mercury Lab.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)
OCT													
01...	0940	199	70	743	11.1	93	8.2	218	6.5	26.1	12.7	1.12	2.26
NOV													
06...	1000	211	70	745	12.7	95	7.6	213	2.5	24.4	11.5	1.30	2.48
10...	1115	175	70	742	13.6	96	7.8	234	.0	29.3	13.7	1.27	2.58
DEC													
02...	0900	180	70	756	13.9	95	7.3	248	-.2	28.3	13.5	1.15	2.25
JAN													
06...	0945	120	70	740	11.7	82	7.9	248	-.3	33.0	14.7	1.34	3.70
FEB													
05...	0900	110	70	744	12.2	85	7.3	256	-.2	31.6	14.4	1.37	2.57
MAR													
04...	0940	150	70	742	16.6	116	7.7	224	-.3	25.9	12.2	1.36	2.42
30...	1100	651	40	742	13.7	98	7.2	115	.6	12.2	5.64	1.60	1.95
APR													
14...	1100	434	40	741	12.0	94	7.2	143	4.0	16.4	7.63	1.09	1.87
21...	1045	550	40	725	11.3	95	6.9	137	6.0	16.8	7.47	.90	1.99
MAY													
03...	0930	300	70	744	11.6	95	7.6	178	6.0	21.9	9.44	.92	2.18
24...	1100	718	40	736	10.5	95	7.1	131	9.2	15.1	6.06	.74	1.52
JUN													
03...	1020	715	40	748	--	--	7.2	113	12.5	15.6	6.24	.54	1.76
JUL													
13...	0830	181	70	735	8.7	95	7.6	228	18.0	27.7	12.1	.97	2.25
AUG													
12...	0930	131	70	739	10.7	105	8.2	254	13.3	30.2	14.7	1.08	2.27
SEP													
08...	0900	122	70	747	9.7	95	7.8	259	13.5	30.4	14.7	1.31	2.36
16...	1100	159	70	738	9.3	97	7.9	240	15.9	31.2	13.6	1.54	2.31

04066500 PIKE RIVER AT AMBERG, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Iron, water, fltrd, ug/L (01046)	Mercury water fltrd, ng/L (50287)	Mercury suspnd sedimnt total, ng/L (62976)	Methylmercury water fltrd, ng/L (50285)	Methylmercury suspnd sedimnt total, ng/L (62977)
OCT													
01...	105	3.14	8.3	.34	<.04	E.03	<.02	<.04	153	1.49	.295	.12	--
NOV													
06...	103	4.12	8.7	.24	<.04	.12	<.18	<.04	110	1.03	.357	.07	--
10...	119	3.63	9.8	.92	<.04	.12	<.02	<.04	99	1.01	.400	.07	--
DEC													
02...	117	3.53	9.6	.24	<.04	.14	<.02	<.04	171	.84	.247	.05	--
JAN													
06...	129	3.91	10.4	.21	<.04	.17	<.02	E.02	129	.52	--	<.04	<.010
FEB													
05...	129	3.46	9.3	E.09	<.04	.17	<.02	<.04	66	.32	--	E.06	.016
MAR													
04...	110	3.77	8.7	.17	E.02	.24	<.02	<.04	81	.87	1.11	--	.045
30...	45	2.79	6.0	.50	E.03	.29	<.02	<.04	184	1.40	5.88	--	.167
APR													
14...	64	2.31	6.1	.40	<.04	.09	<.02	<.04	158	--	--	--	--
21...	61	2.27	6.4	.49	<.04	.08	<.02	<.04	176	--	--	--	--
MAY													
03...	83	2.75	7.0	.36	<.04	E.05	<.02	<.04	171	2.44	--	--	--
24...	56	1.46	4.0	.58	E.02	.08	E.01	<.04	215	4.70	--	--	--
JUN													
03...	55	1.97	4.3	.54	<.04	<.06	<.02	<.04	201	--	--	--	--
JUL													
13...	113	2.92	7.1	.30	<.04	.06	<.02	<.04	196	--	--	--	--
AUG													
12...	125	3.22	8.2	.20	<.04	E.06	<.02	<.04	116	--	--	--	--
SEP													
08...	127	2.87	6.9	.19	<.04	E.04	<.02	<.04	140	--	--	--	--
16...	121	2.67	7.0	.19	<.04	<.06	<.02	<.04	111	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Suspended sediment concentration mg/L (80154)
OCT	
01...	19
NOV	
06...	23
10...	27
DEC	
02...	25
JAN	
06...	26
FEB	
05...	25
MAR	
04...	26
30...	39
APR	
14...	16
21...	23
MAY	
03...	24
24...	43
JUN	
03...	23
JUL	
13...	29
AUG	
12...	27
SEP	
08...	25
16...	25

04066800 MENOMINEE RIVER AT KOSS, MI

LOCATION.--Lat 45°23'14", long 87°42'07", in NE $^1/_4$, sec.36, T. 35 N., R.28 W., Michigan Meridian, Menominee County, MI, Hydrologic Unit 04030108, on left upstream bank 30 ft from river and 18 ft west of County Trunk JJ (Koss) bridge, 0.3 mi southeast of Koss and 3.4 mi upstream of Grand Rapids Dam.

DRAINAGE AREA.--3,700 mi^2.

PERIOD OF RECORD.--July 1907 to March 1909 monthly discharge only (published as "at Koss"), July 1913 to September 1981 (published as 04067000 Menominee River below Koss, MI), June 1998 to current year. Records prior to October 1913 published in WSP 244, 264, and 384.

REVISED RECORDS.--WDR WI-80-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 665 ft above NGVD of 1929, from topographic map. June 1913 to September 1981, headwater and tailwater gages and generation data entered hourly in daily log sheet by Wisconsin Public Service Corp. employees at powerplant 4 mi downstream. Records of daily discharge furnished by Wisconsin Public Service Corp. Prior to June 1913, chain gage on railroad bridge at Koss.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow regulated by powerplants and by Michigamme Reservoir, capacity, 119,950 acre-ft, and Peavy Pond, capacity, 33,860 acre-ft, on the Michigamme River, and by many smaller reservoirs above station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,710	1,850	2,270	e2,300	e2,200	e2,200	8,370	6,690	7,690	2,530	1,920	1,730
2	1,690	2,010	e2,200	e2,300	e2,300	e2,200	8,710	6,360	10,100	2,450	1,940	1,570
3	1,660	1,790	e1,700	e2,400	e2,300	e2,400	9,230	5,980	11,100	2,450	1,900	1,590
4	1,500	2,000	e1,500	e2,100	e2,000	e2,500	9,690	5,850	10,700	2,620	1,990	1,640
5	1,670	2,330	e1,900	e2,000	e2,000	e2,700	9,310	5,590	8,930	3,070	1,840	1,550
6	1,620	2,250	e2,200	e1,900	e2,100	e2,800	8,820	5,560	7,790	3,390	1,800	1,600
7	1,720	2,540	e2,100	e1,900	e2,100	e2,800	8,720	4,890	6,250	3,350	2,100	1,620
8	1,810	2,470	e1,800	e1,800	e2,200	e2,900	9,120	4,940	5,930	3,730	1,650	1,660
9	1,880	1,950	e2,000	e1,900	e2,200	e2,800	9,620	4,120	5,330	3,890	1,520	1,600
10	1,820	1,740	e2,100	e2,200	e2,200	e2,800	10,500	4,150	5,320	3,150	1,860	1,460
11	1,630	1,750	e1,700	e2,000	e2,200	e2,700	10,400	3,890	5,150	3,160	1,920	1,490
12	1,470	1,820	e1,500	e1,900	e2,200	e3,000	9,730	4,040	5,050	2,860	1,850	1,430
13	1,940	1,800	e1,400	e2,100	e2,100	e2,700	9,250	3,970	3,970	2,760	1,800	1,460
14	1,560	1,940	e1,500	e2,300	e2,100	e2,500	8,060	4,060	4,580	2,860	1,580	1,590
15	1,740	2,040	e1,800	e2,200	e2,000	e2,500	7,380	4,630	5,670	2,770	1,950	1,550
16	1,880	1,990	e1,900	e2,100	e2,000	e2,800	6,840	5,470	5,160	2,590	1,820	1,530
17	1,500	2,010	e1,900	e2,100	e2,000	e2,500	7,430	5,380	5,030	2,510	1,690	1,880
18	1,820	2,040	e2,300	e2,200	e2,200	e2,400	8,270	5,330	5,500	2,570	1,860	1,880
19	1,790	2,160	e1,800	e2,200	e2,100	e2,700	8,560	4,670	4,150	2,280	1,950	1,730
20	1,750	2,830	e1,700	e2,100	e2,200	e2,600	10,000	4,570	3,890	2,630	1,800	1,740
21	1,620	2,980	e1,600	e2,000	e2,200	e2,500	12,700	4,430	3,230	2,200	1,860	1,620
22	1,890	2,840	e1,600	e2,000	e2,200	e2,400	15,000	4,300	3,350	2,430	1,900	1,640
23	1,830	3,070	e1,800	e2,000	e2,200	e2,500	15,700	4,350	2,950	2,420	1,780	1,580
24	1,790	3,170	e1,700	e2,000	e2,100	e2,500	14,600	6,260	2,780	2,200	1,790	1,430
25	1,760	3,040	e1,700	e2,000	e2,000	e2,400	12,700	8,900	2,830	2,020	1,970	1,480
26	1,730	3,000	e1,600	e2,100	e2,200	e2,500	11,300	10,000	2,830	2,070	1,620	1,450
27	1,750	2,380	e1,600	e2,100	e2,100	e3,100	10,400	9,410	2,650	2,010	1,750	1,470
28	1,820	2,420	e1,800	e2,100	e2,100	e4,500	9,020	7,910	2,580	1,930	2,070	1,480
29	1,870	2,350	e2,200	e2,100	e2,200	e7,500	8,920	6,710	2,450	1,860	2,120	1,450
30	1,800	2,340	e2,400	e2,100	---	12,200	7,660	6,330	2,500	2,070	1,730	1,370
31	1,690	---	e2,600	e2,100	---	12,200	---	6,110	---	1,870	1,740	---
TOTAL	53,710	68,900	57,870	64,600	62,000	106,800	296,010	174,850	155,440	80,700	57,070	47,270
MEAN	1,733	2,297	1,867	2,084	2,138	3,445	9,867	5,640	5,181	2,603	1,841	1,576
MAX	1,940	3,170	2,600	2,400	2,300	12,200	15,700	10,000	11,100	3,890	2,120	1,880
MIN	1,470	1,740	1,400	1,800	2,000	2,200	6,840	3,890	2,450	1,860	1,520	1,370

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2004, BY WATER YEAR (WY)

MEAN	2,556	2,795	2,193	1,986	1,895	2,734	6,682	5,711	3,880	2,741	2,149	2,394
MAX	6,178	5,597	3,588	3,174	3,176	7,973	13,650	13,180	10,780	6,159	3,800	5,538
(WY)	(1929)	(1917)	(1919)	(1969)	(1969)	(1973)	(1916)	(1960)	(1916)	(1953)	(1972)	(1928)
MIN	1,131	1,170	1,166	989	864	1,199	2,479	2,220	1,708	1,111	731	1,013
(WY)	(1977)	(1977)	(1931)	(1926)	(1926)	(1934)	(1964)	(1977)	(1977)	(1934)	(1934)	(1933)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1913 - 2004	
ANNUAL TOTAL	1,062,540		1,225,220			
ANNUAL MEAN	2,911		3,348		3,148	
HIGHEST ANNUAL MEAN					5,262	1916
LOWEST ANNUAL MEAN					1,642	1931
HIGHEST DAILY MEAN	12,900	Apr 23	15,700	Apr 23	33,000	May 10, 1960
LOWEST DAILY MEAN	1,070	Sep 6	1,370	Sep 30	162	Sep 15, 1931
ANNUAL SEVEN-DAY MINIMUM	1,290	Sep 1	1,450	Sep 24	402	Sep 9, 1931
MAXIMUM PEAK FLOW			16,000	Apr 23		
MAXIMUM PEAK STAGE			15.26	Apr 23		
10 PERCENT EXCEEDS	5,670		7,830		5,940	
50 PERCENT EXCEEDS	2,000		2,200		2,330	
90 PERCENT EXCEEDS	1,500		1,620		1,400	

(e) Estimated due to ice effect or missing record

04067500 MENOMINEE RIVER NEAR MC ALLISTER, WI

LOCATION.--Lat 45°19'33", long 87°39'48", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.17, T.33 N., R.23 E., Marinette County, Hydrologic Unit 04030108, on right bank 85 ft downstream from bridge on County Highway JJ, 2.9 mi downstream from Grand Rapids Dam, 2.6 mi east of McAllister, 1.9 mi downstream from Little Cedar River, and at mile 22.6.

DRAINAGE AREA.--3,930 mi^2.

PERIOD OF RECORD.--March 1945 to September 1961; October 1961 to September 1979, miscellaneous measurements and peaks only; October 1979 to September 1986; October 1986 to March 1987, crest-stage partial-record station; April 1988 to September 1990; April 1993 to September 1995; October 1997 to current year.

REVISED RECORDS.--WDR WI-80-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 622.20 ft above NGVD of 1929 (Michigan Department of Transportation reference mark). Prior to May 15, 1945, nonrecording gage 1,400 ft downstream at same datum; May 16, 1945 to September 1961, water-stage recorder 1,000 ft downstream at same datum; October 1961 to September 1979, crest- stage gage 1,100 ft downstream at same datum; October 1979 to September 1986, water-stage recorder at same site and datum; October 1986 to March 1987, crest-stage gage at same site and datum. April 1988 to September 1990, and April 1993 to September 1995, water-stage recorder at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, and Peavy Pond, capacity, 33,860 acre-ft on the Michigamme River, and by many smaller reservoirs above station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,000	1,650	e2,300	e2,300	e2,200	e2,300	9,510	6,930	8,030	2,540	1,910	1,890
2	1,930	1,950	e2,000	e2,400	e2,300	e2,300	9,620	6,640	10,300	2,510	2,070	1,780
3	1,810	1,720	e1,600	e2,500	e2,300	e2,400	10,100	6,220	11,300	2,460	2,300	1,710
4	1,630	1,860	1,490	e2,100	e2,100	e2,600	10,500	6,130	10,900	2,770	2,370	1,800
5	1,820	2,400	1,860	e2,000	e2,100	e2,800	10,000	5,930	9,140	3,300	2,160	1,650
6	1,700	2,270	2,260	e2,000	e2,200	e2,800	9,490	5,820	7,980	3,740	2,010	1,690
7	1,710	2,310	2,170	e1,900	e2,200	e2,800	9,380	5,200	6,590	3,670	2,100	1,710
8	1,740	2,510	1,880	e1,800	e2,200	e3,000	9,710	5,190	6,080	4,040	1,760	1,860
9	1,700	2,040	2,000	e1,900	e2,300	e2,900	10,200	4,500	5,570	4,160	1,620	1,770
10	1,610	1,820	2,160	e2,200	e2,200	e2,900	11,100	4,400	5,360	3,370	1,790	1,580
11	1,590	1,860	1,700	e2,100	e2,200	e2,800	11,000	4,200	5,330	3,320	1,960	1,570
12	1,560	1,970	e1,500	e1,900	e2,100	e3,100	10,100	4,380	5,170	3,080	1,880	1,570
13	2,000	1,950	e1,500	e2,100	e2,100	e2,900	9,450	4,240	4,240	2,940	1,840	1,560
14	1,660	2,010	1,550	e2,300	e2,100	e2,700	8,320	4,330	4,620	3,180	1,640	1,600
15	1,690	2,130	1,810	e2,200	e2,100	e2,700	7,630	4,740	5,690	2,980	1,930	1,450
16	1,830	2,080	1,970	e2,200	e2,000	e2,900	7,150	5,630	5,450	e2,900	1,830	1,480
17	1,700	2,100	1,990	e2,200	e2,000	e2,700	7,620	5,540	5,140	e2,700	1,770	2,040
18	1,670	2,170	2,380	e2,300	e2,300	e2,600	8,450	5,490	5,570	e2,800	1,780	2,110
19	1,660	2,300	1,920	e2,300	e2,200	e2,900	8,740	4,830	4,580	e2,500	2,020	1,790
20	1,700	2,850	e1,800	e2,300	e2,200	e2,800	9,840	4,710	4,080	2,740	1,800	1,940
21	1,540	3,100	e1,700	e2,100	e2,200	e2,700	12,300	4,580	3,590	2,400	1,790	1,760
22	1,760	e2,800	e1,800	e2,200	e2,200	e2,600	14,600	4,510	3,620	2,480	1,770	1,750
23	1,720	e3,100	e1,900	e2,100	e2,200	e2,600	15,500	4,700	3,290	2,560	1,560	1,710
24	1,620	e3,200	e1,900	e2,000	e2,100	e2,600	14,400	6,560	3,080	2,180	1,540	1,480
25	1,680	e3,100	e1,900	e2,100	e2,100	e2,700	12,600	9,310	3,060	1,990	1,890	1,480
26	1,580	e3,100	e1,800	e2,100	e2,400	e3,000	11,200	10,300	3,060	2,050	1,710	1,460
27	1,600	e2,500	e1,700	e2,100	e2,200	e3,700	10,400	9,830	2,800	2,100	1,780	1,490
28	1,620	e2,400	e2,000	e2,100	e2,200	e4,800	9,110	8,440	2,670	1,930	2,100	1,580
29	1,680	e2,300	e2,300	e2,100	e2,300	7,390	8,960	7,170	2,600	1,810	2,220	1,510
30	1,870	e2,400	e2,500	e2,100	---	10,900	7,820	6,770	2,580	2,140	1,920	1,440
31	1,640	---	e2,600	e2,000	---	12,500	---	6,520	---	1,920	1,920	---
TOTAL	53,020	69,950	59,940	66,000	63,300	110,390	304,800	183,740	161,470	85,260	58,740	50,210
MEAN	1,710	2,332	1,934	2,129	2,183	3,561	10,160	5,927	5,382	2,750	1,895	1,674
MAX	2,000	3,200	2,600	2,500	2,400	12,500	15,500	10,300	11,300	4,160	2,370	2,110
MIN	1,540	1,650	1,490	1,800	2,000	2,300	7,150	4,200	2,580	1,810	1,540	1,440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2004, BY WATER YEAR (WY)

MEAN	2,887	3,115	2,536	2,357	2,390	3,111	6,691	5,325	3,932	3,098	2,340	2,565
MAX	6,755	7,332	4,561	3,777	4,710	5,687	12,800	15,930	6,958	7,127	4,056	5,952
(WY)	(1986)	(1986)	(1986)	(1983)	(1984)	(1983)	(1951)	(1960)	(1993)	(1951)	(1952)	(1959)
MIN	1,195	1,753	1,532	1,621	1,245	1,897	1,869	1,636	1,296	1,374	1,312	1,390
(WY)	(1949)	(1990)	(1990)	(1949)	(1948)	(1956)	(1990)	(1998)	(1988)	(1988)	(1998)	(1989)

04067500 MENOMINEE RIVER NEAR MC ALLISTER, WI—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1945 - 2004	
ANNUAL TOTAL	1,096,560		1,266,820			
ANNUAL MEAN	3,004		3,461		3,372	
HIGHEST ANNUAL MEAN					5,496	1960
LOWEST ANNUAL MEAN					2,118	1948
HIGHEST DAILY MEAN	12,900	Apr 23	15,500	Apr 23	31,800	May 9, 1960
LOWEST DAILY MEAN	1,040	Sep 7	1,440	Sep 30	810	Oct 26, 1948
ANNUAL SEVEN-DAY MINIMUM	1,260	Sep 6	1,490	Sep 24	952	Oct 24, 1948
MAXIMUM PEAK FLOW			15,800	Apr 23	32,500	May 9, 1960
MAXIMUM PEAK STAGE			15.95	Apr 23	(a)20.00	May 9, 1960
INSTANTANEOUS LOW FLOW					(b)538	Oct 6, 1946
10 PERCENT EXCEEDS	5,880		8,120		5,960	
50 PERCENT EXCEEDS	2,100		2,210		2,560	
90 PERCENT EXCEEDS	1,520		1,660		1,640	

(a) From graph based on gage readings
(b) Observed
(e) Estimated due to ice effect or missing record

04067958 PESHTIGO RIVER NEAR WABENO, WI

LOCATION.--Lat 45°23'16", long 88°18'18", in NW $^1/_4$ NW $^1/_4$ sec.31, T.34 N., R.18 E., Marinette County, Hydrologic Unit 04030105, on left upstream bank 50 ft from river's edge and 12 ft north of County Trunk C, 12.2 mi west of Athelstane and 17.7 mi east of Wabeno.

DRAINAGE AREA.--447 mi^2.

PERIOD OF RECORD.--June 1998 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 980 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302	269	e260	e280	e170	e260	1,190	659	925	305	239	216
2	283	266	e250	e270	e180	e270	1,370	617	990	290	256	214
3	274	262	e240	e260	e180	e270	1,440	573	975	280	283	211
4	267	281	e240	e240	e180	e270	1,390	531	889	303	268	207
5	258	311	e240	e220	e180	e270	1,220	485	769	333	250	202
6	253	328	e240	e210	e180	e290	1,120	455	676	346	233	201
7	248	318	e240	e210	e180	e310	1,140	432	603	383	219	213
8	241	301	e240	e220	e190	e310	1,220	430	563	411	214	217
9	240	321	e230	e230	e190	e300	1,300	429	542	422	218	214
10	230	299	e230	e240	e180	e300	1,310	454	569	390	223	204
11	224	287	e230	e240	e180	e300	1,250	464	575	352	227	197
12	235	284	e220	e230	e180	e280	1,120	456	553	330	231	194
13	246	277	e230	e220	e170	e280	984	475	548	316	227	190
14	254	e280	e240	e210	e160	e300	881	513	659	328	228	188
15	254	e280	e240	e210	e150	e300	809	621	718	304	219	214
16	241	e280	e240	e210	e160	e300	780	665	709	291	211	257
17	233	289	e230	e200	e170	e300	815	626	741	282	208	268
18	230	312	e220	e190	e170	e300	888	560	704	271	215	258
19	230	370	e220	e180	e180	e300	993	494	621	266	232	240
20	229	449	e220	e180	e190	e300	1,080	453	546	303	225	223
21	235	453	e230	e170	e200	e300	1,120	439	486	302	217	212
22	226	415	e230	e170	e210	e300	1,130	436	444	284	207	202
23	225	e390	e220	e170	e230	e330	1,060	548	410	265	201	196
24	224	e350	e220	e170	e240	e310	967	1,020	390	252	199	191
25	225	e300	e220	e170	e250	e320	894	1,130	381	240	212	188
26	226	e340	e230	e170	e250	e320	830	1,130	390	232	213	184
27	224	e340	e240	e170	e250	e350	775	1,020	356	224	259	188
28	235	e330	e280	e160	e250	e460	717	889	339	219	255	189
29	253	e290	e320	e160	e250	e700	676	761	326	215	241	185
30	263	e260	e320	e160	---	e980	670	677	316	214	233	182
31	273	---	e300	e160	---	1,070	---	735	---	222	222	---
TOTAL	7,581	9,532	7,510	6,280	5,650	11,250	31,139	19,177	17,713	9,175	7,085	6,245
MEAN	245	318	242	203	195	363	1,038	619	590	296	229	208
MAX	302	453	320	280	250	1,070	1,440	1,130	990	422	283	268
MIN	224	260	220	160	150	260	670	429	316	214	199	182
CFSM	0.55	0.71	0.54	0.45	0.44	0.81	2.32	1.38	1.32	0.66	0.51	0.47
IN.	0.63	0.79	0.62	0.52	0.47	0.94	2.59	1.60	1.47	0.76	0.59	0.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2004, BY WATER YEAR (WY)

MEAN	289	288	235	181	189	332	823	594	441	316	234	249
MAX	624	367	356	203	209	542	1,201	978	694	481	308	422
(WY)	(2003)	(2003)	(2002)	(2004)	(1999)	(2000)	(2002)	(2002)	(2002)	(1999)	(2002)	(2000)
MIN	210	221	184	154	172	211	400	288	267	183	176	160
(WY)	(2001)	(2000)	(2001)	(1999)	(2002)	(2002)	(2000)	(2000)	(1998)	(1998)	(1998)	(1998)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1998 - 2004	
ANNUAL TOTAL	129,111		138,337			
ANNUAL MEAN	354		378		354	
HIGHEST ANNUAL MEAN					441	2002
LOWEST ANNUAL MEAN					299	1999
HIGHEST DAILY MEAN	1,560	Apr 21	1,440	Apr 3	2,340	Apr 17, 18, 2002
LOWEST DAILY MEAN	(a)130	Jan 21-28	(a)150	Feb 15	(a)130	(b)Jan 5, 1999
ANNUAL SEVEN-DAY MINIMUM	(a)130	Jan 21	(a)164	Jan 25	(a)130	Jan 21, 2003
MAXIMUM PEAK FLOW			1,490	Apr 2	2,370	Apr 17, 2002
MAXIMUM PEAK STAGE			6.17	Apr 2	7.17	Apr 17, 2002
INSTANTANEOUS LOW FLOW			(a)		(c)124	Dec 9, 1998
ANNUAL RUNOFF (CFSM)	0.791		0.846		0.792	
ANNUAL RUNOFF (INCHES)	10.74		11.51		10.76	
10 PERCENT EXCEEDS	688		789		670	
50 PERCENT EXCEEDS	250		266		250	
90 PERCENT EXCEEDS	170		189		170	

(a) Ice affected
(b) Also occurred Jan. 21-28, 2003
(c) Result of freezeup
(e) Estimated due to ice effect or missing record

04069416 PESHTIGO RIVER AT PORTERFIELD, WI

LOCATION.--Lat 45°08'36", long 87°48'02", in SE $^1/_4$ NE $^1/_4$ sec.19, T.31 N., R.22 E., Marinette County, Hydrologic Unit 04030105, on right bank 15 ft upstream from County Trunk E bridge, 0.8 mi south of Porterfield.

DRAINAGE AREA.--1,020 mi^2.

PERIOD OF RECORD.--June 1998 to current year. Prior to October 2000, published as "near Porterfield".

GAGE.--Water-stage recorder. Elevation of gage is 625 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Diurnal fluctuation caused by powerplant upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	663	566	e600	e670	e300	e560	4,490	1,540	2,680	969	506	473
2	569	576	e430	e580	e340	e600	4,210	1,410	2,910	896	485	468
3	603	527	e400	e590	e380	e620	4,080	1,380	2,740	773	517	429
4	561	660	e410	e560	e400	e640	3,800	1,140	2,600	756	555	383
5	522	838	e480	e500	e430	e680	3,420	1,060	2,010	1,070	516	451
6	406	836	e510	e360	e450	e720	3,340	1,180	1,700	1,190	506	468
7	388	757	e500	e400	e450	e760	3,220	947	1,450	1,300	433	410
8	388	641	e580	e440	e500	e760	3,110	926	1,240	1,300	401	437
9	376	552	e550	e390	e500	e760	3,160	1,170	1,120	1,230	415	435
10	357	476	e500	e400	e500	e740	2,950	1,320	1,220	1,110	436	426
11	431	514	e450	e420	e500	e680	2,920	1,310	1,040	1,010	504	417
12	417	593	e440	e380	e500	e730	2,780	1,160	1,210	975	477	432
13	411	612	e460	e460	e490	e740	2,370	1,140	1,290	860	460	441
14	407	584	e390	e480	e460	e700	2,120	1,300	1,620	698	458	457
15	460	549	e380	e420	e440	e700	2,070	1,570	1,750	723	454	529
16	493	632	e430	e430	e460	e720	2,140	1,570	1,960	745	449	515
17	509	643	e490	e440	e530	e880	1,770	1,450	2,020	797	454	510
18	504	666	e550	e450	e520	e900	1,760	1,430	2,470	760	473	484
19	455	745	e530	e420	e500	e790	2,070	1,310	2,780	706	441	481
20	484	806	e400	e420	e560	e650	2,340	1,000	2,310	711	451	579
21	483	768	e410	e440	e600	e750	2,350	926	1,830	654	478	507
22	486	761	e460	e450	e630	e880	2,470	935	1,520	744	465	438
23	496	1,010	e460	e400	e620	e850	2,640	1,010	1,220	763	442	413
24	527	1,230	e460	e400	e600	e900	2,290	2,100	1,100	695	436	419
25	506	1,120	e450	e390	e630	e1,100	2,130	2,900	1,140	611	449	416
26	519	1,040	e420	e360	e600	e1,600	2,210	3,070	710	494	470	411
27	547	793	e430	e330	e540	2,470	2,100	2,830	803	494	616	366
28	527	824	e480	e350	e510	3,610	1,960	2,510	878	508	736	379
29	516	848	e830	e360	e530	5,880	1,570	2,010	829	519	719	361
30	525	786	e830	e370	---	6,280	1,680	1,660	925	516	573	338
31	532	---	e840	e320	---	5,230	---	1,670	---	509	472	---
TOTAL	15,068	21,953	15,550	13,380	14,470	43,880	79,520	46,934	49,075	25,086	15,247	13,273
MEAN	486	732	502	432	499	1,415	2,651	1,514	1,636	809	492	442
MAX	663	1,230	840	670	630	6,280	4,490	3,070	2,910	1,300	736	579
MIN	357	476	380	320	300	560	1,570	926	710	494	401	338
CFSM	0.48	0.72	0.49	0.42	0.49	1.39	2.60	1.48	1.60	0.79	0.48	0.43
IN.	0.55	0.80	0.57	0.49	0.53	1.60	2.90	1.71	1.79	0.91	0.56	0.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2004, BY WATER YEAR (WY)

MEAN	630	620	477	382	435	903	1,766	1,201	999	597	482	501
MAX	1,379	837	675	434	526	1,415	2,651	1,754	1,791	844	660	762
(WY)	(2003)	(2003)	(2002)	(1999)	(1999)	(2004)	(2004)	(2002)	(2002)	(1999)	(2002)	(2000)
MIN	432	429	347	334	368	589	774	587	518	330	353	316
(WY)	(2000)	(2000)	(2000)	(2003)	(2001)	(2002)	(2000)	(2000)	(2000)	(2001)	(1998)	(1999)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1998 - 2004	
ANNUAL TOTAL	289,995		353,436			
ANNUAL MEAN	795		966		762	
HIGHEST ANNUAL MEAN					966	2004
LOWEST ANNUAL MEAN					568	2000
HIGHEST DAILY MEAN	3,800	Apr 22	6,280	Mar 30	6,280	Mar 30, 2004
LOWEST DAILY MEAN	(a)190	Jan 19	(a)300	Feb 1	164	Sep 25, 1998
ANNUAL SEVEN-DAY MINIMUM	(a)223	Jan 17	(a)339	Jan 27	218	Jul 28, 1998
MAXIMUM PEAK FLOW			6,630	Mar 30	6,630	Mar 30, 2004
MAXIMUM PEAK STAGE			13.87	Mar 30	13.87	Mar 30, 2004
ANNUAL RUNOFF (CFSM)	0.779		0.947		0.747	
ANNUAL RUNOFF (INCHES)	10.58		12.89		10.15	
10 PERCENT EXCEEDS	1,790		2,130		1,400	
50 PERCENT EXCEEDS	513		596		522	
90 PERCENT EXCEEDS	330		410		343	

(a) Ice affected
(e) Estimated due to ice effect or missing record

04069500 PESHTIGO RIVER AT PESHTIGO, WI

LOCATION.--Lat 45°02'51", long 87°44'40", in NE $^1/_4$ NE $^1/_4$ sec.30, T.30 N., R.23 E., Marinette County, Hydrologic Unit 04030105, on left bank 75 ft downstream from Chicago and Northwestern Railway bridge, 0.5 mi downstream from Wisconsin Public Service Corp. Powerplant at Peshtigo, and 11.5 mi upstream from mouth.

DRAINAGE AREA.--1,080 mi^2.

PERIOD OF RECORD.--June 1953 to current year.

REVISED RECORDS.--WDR WI-80-1: Drainage area. WDR WI-84-1: 1983 average discharge.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 584.64 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Diurnal fluctuation caused by two powerplants upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	757	614	761	726	e300	e520	5,220	1,570	2,760	934	418	477
2	671	639	495	669	e360	e600	4,740	1,430	3,080	833	364	464
3	687	612	419	705	e370	e660	4,510	1,390	2,790	739	438	460
4	655	735	462	673	e390	e710	4,190	1,240	2,650	785	530	372
5	608	923	537	e600	e400	e720	3,680	1,080	2,120	1,020	507	447
6	477	902	587	e390	e400	e700	3,540	1,240	1,750	1,140	488	444
7	450	877	559	e350	e370	e720	3,370	1,050	1,490	1,250	390	395
8	454	762	642	e500	e450	e720	3,250	1,010	1,340	1,240	358	372
9	441	660	624	e450	e470	e720	3,260	1,240	1,160	1,150	368	384
10	425	584	556	e470	e420	e700	3,030	1,370	1,220	1,060	382	369
11	483	588	e450	e500	e430	e680	2,930	1,380	1,090	929	450	419
12	468	657	e430	e420	e420	e680	2,820	1,270	1,180	908	444	413
13	446	688	516	e470	e420	e680	2,390	1,220	1,320	831	402	422
14	438	659	432	e480	e380	e680	2,120	1,330	1,650	724	391	471
15	490	630	412	e450	e370	e680	2,010	1,620	1,700	682	391	663
16	530	672	483	e470	e440	770	2,120	1,610	1,830	687	398	548
17	569	707	543	e520	e470	991	1,850	1,500	1,950	723	400	545
18	550	760	617	e500	e420	1,020	1,760	1,420	2,270	704	433	465
19	508	816	596	e500	e380	873	2,030	1,400	2,510	655	430	483
20	527	870	462	e500	e460	708	2,270	1,120	2,220	653	421	554
21	531	859	441	e500	e460	851	2,370	983	1,750	624	444	530
22	495	849	512	e500	e480	983	2,350	1,020	1,450	653	444	425
23	481	1,110	522	e500	e480	895	2,610	1,160	1,160	702	388	371
24	530	1,400	535	e500	e410	966	2,310	2,150	1,020	644	387	401
25	522	1,280	500	e500	e430	1,160	2,130	2,880	1,100	550	413	405
26	505	1,190	484	e440	e490	1,710	2,210	3,130	724	442	437	402
27	533	943	444	e410	e420	2,850	2,120	2,890	716	428	617	361
28	546	942	685	e430	e410	4,160	1,980	2,590	751	415	759	350
29	542	951	932	e440	e450	7,040	1,640	2,080	808	437	764	355
30	552	905	882	e480	---	7,660	1,640	1,770	907	445	644	313
31	591	---	921	e380	---	6,190	---	1,790	---	419	482	---
TOTAL	16,462	24,784	17,441	15,423	12,150	48,997	82,450	48,933	48,466	23,406	14,182	13,080
MEAN	531	826	563	498	419	1,581	2,748	1,578	1,616	755	457	436
MAX	757	1,400	932	726	490	7,660	5,220	3,130	3,080	1,250	764	663
MIN	425	584	412	350	300	520	1,640	983	716	415	358	313
CFSM	0.49	0.76	0.52	0.46	0.39	1.46	2.54	1.46	1.50	0.70	0.42	0.40
IN.	0.57	0.85	0.60	0.53	0.42	1.69	2.84	1.69	1.67	0.81	0.49	0.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2004, BY WATER YEAR (WY)

MEAN	789	879	624	531	540	1,065	2,054	1,453	1,069	652	584	723
MAX	1,728	2,197	1,128	1,219	1,449	3,272	3,813	4,639	2,768	1,362	1,242	1,706
(WY)	(1986)	(1986)	(1966)	(1960)	(1984)	(1973)	(1979)	(1960)	(1993)	(1993)	(1974)	(1959)
MIN	310	328	250	268	282	424	485	538	228	300	285	264
(WY)	(1990)	(1977)	(1990)	(1990)	(1990)	(1964)	(1990)	(1977)	(1988)	(1989)	(1957)	(1989)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1953 - 2004	
ANNUAL TOTAL	308,383		365,774			
ANNUAL MEAN	845		999		914	
HIGHEST ANNUAL MEAN					1,559	1973
LOWEST ANNUAL MEAN					580	2000
HIGHEST DAILY MEAN	3,800	Apr 21	7,660	Mar 30	9,600	May 9, 1960
LOWEST DAILY MEAN	(a)170	Jan 19	(a)300	Feb 1	84	Aug 5, 1957
ANNUAL SEVEN-DAY MINIMUM	(a)226	Jan 17	370	Sep 24	172	Aug 4, 1957
MAXIMUM PEAK FLOW			8,110	Mar 30	(b)9,790	May 9, 1960
MAXIMUM PEAK STAGE			11.04	Mar 30	11.59	May 9, 1960
ANNUAL RUNOFF (CFSM)	0.782		0.925		0.846	
ANNUAL RUNOFF (INCHES)	10.62		12.60		11.49	
10 PERCENT EXCEEDS	1,830		2,140		1,790	
50 PERCENT EXCEEDS	563		644		664	
90 PERCENT EXCEEDS	342		402		352	

(a) Ice affected
(b) From rating curve extended above 5,000 ft^3/s on basis of computation of peak flow through dam gates
(e) Estimated due to ice effect or missing record

04071000 OCONTO RIVER NEAR GILLETT, WI

LOCATION.--Lat 44°51'55", long 88°18'00", in NE ¼ NW ¼ sec.34, T.28 N., R.18 E., Oconto County, Hydrologic Unit 04030104, on left bank 300 ft upstream from County Trunk Highway BB bridge, 2.0 mi upstream from Christy Brook, 2.0 mi south of Gillett, and at mile 29.

DRAINAGE AREA.--705 mi^2.

PERIOD OF RECORD.--June 1906 to April 1909, October 1913 to current year. Monthly discharge for some periods published in WSP 1307.

REVISED RECORDS.--WSP 1207: 1922. WSP 1307: 1907-8(M), 1914-16(M), 1918-21(M), 1923-33(M), 1937-38(M), 1943(M). WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 732.87 ft above NGVD of 1929 (levels by Wisconsin Department of Transportation). See WSP 1727 for history of changes prior to Aug. 25, 1938.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	391	368	465	e370	e280	e410	2,290	975	1,170	576	332	330
2	374	361	e450	e340	e280	e430	2,120	932	1,340	541	330	325
3	364	361	e430	e420	e290	e460	1,950	893	1,530	503	330	319
4	366	452	e420	e390	e290	e480	1,830	849	1,510	555	341	310
5	364	528	e420	e310	e290	e500	1,750	792	1,360	646	368	302
6	354	564	e420	e310	e290	e500	1,690	744	1,200	751	373	297
7	349	e540	e420	e310	e290	e500	1,640	703	1,060	787	351	299
8	339	e470	e420	e310	e290	e500	1,630	754	911	799	331	297
9	315	e400	e420	e310	e290	e500	1,650	843	836	784	329	297
10	310	e430	e410	e310	e290	e500	1,670	958	840	713	331	293
11	308	470	e400	e320	e290	e500	1,650	993	871	648	339	289
12	313	454	e390	e320	e290	e490	1,570	985	916	618	333	285
13	333	432	e380	e310	e290	e490	1,470	995	966	575	322	291
14	353	423	e390	e300	e280	e470	1,360	988	1,050	527	311	299
15	347	422	e400	e300	e270	e460	1,260	975	1,110	533	291	325
16	337	407	e400	e290	e270	e460	1,170	968	1,190	507	293	313
17	331	391	e390	e300	e270	e460	1,110	954	1,580	486	295	330
18	327	409	e370	e300	e280	e460	1,080	912	1,680	476	297	336
19	325	430	e350	e290	e290	e460	1,090	835	1,780	457	302	352
20	333	441	e350	e280	e320	e480	1,130	755	1,650	446	325	337
21	336	438	e350	e280	e330	e500	1,220	713	1,460	452	320	316
22	329	432	e350	e280	e330	e500	1,270	692	1,270	445	298	287
23	316	558	e340	e280	e350	e500	1,290	751	1,070	419	294	284
24	317	647	e340	e280	e370	e700	1,280	985	919	386	291	278
25	321	640	e340	e280	e380	e1,100	1,250	1,090	862	376	302	276
26	321	597	e340	e280	e380	e1,700	1,200	1,230	844	367	316	276
27	319	556	e340	e280	e380	e2,000	1,150	1,350	775	362	346	275
28	323	536	e400	e280	e390	e2,400	1,140	1,320	701	353	362	272
29	333	509	e470	e280	e400	2,600	1,090	1,190	656	344	351	273
30	346	487	e460	e280	---	2,940	1,030	1,080	617	339	339	279
31	374	---	e400	e280	---	2,610	---	1,090	---	335	335	---
TOTAL	10,468	14,153	12,225	9,470	9,040	27,060	43,030	29,294	33,724	16,106	10,078	9,042
MEAN	338	472	394	305	312	873	1,434	945	1,124	520	325	301
MAX	391	647	470	420	400	2,940	2,290	1,350	1,780	799	373	352
MIN	308	361	340	280	270	410	1,030	692	617	335	291	272
CFSM	0.48	0.67	0.56	0.43	0.44	1.24	2.03	1.34	1.59	0.74	0.46	0.43
IN.	0.55	0.75	0.65	0.50	0.48	1.43	2.27	1.55	1.78	0.85	0.53	0.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2004, BY WATER YEAR (WY)

MEAN	482	558	445	355	347	646	1,219	868	677	461	382	446
MAX	1,216	1,377	900	700	643	1,867	3,435	2,185	1,744	1,022	742	1,347
(WY)	(1942)	(1986)	(1907)	(1907)	(1984)	(1973)	(1922)	(1960)	(1916)	(1922)	(1960)	(1928)
MIN	199	259	216	206	204	240	379	357	197	226	158	190
(WY)	(1949)	(1934)	(1990)	(1957)	(1948)	(1934)	(1931)	(1931)	(1988)	(1988)	(1934)	(1933)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1906 - 2004	
ANNUAL TOTAL	190,898		223,690			
ANNUAL MEAN	523		611		574	
HIGHEST ANNUAL MEAN					930	1973
LOWEST ANNUAL MEAN					315	1931
HIGHEST DAILY MEAN	2,320	Apr 19	2,940	Mar 30	6,790	Apr 10, 1922
LOWEST DAILY MEAN	(a)210	Jan 24-30	(a)270	Feb 15-17	95	Jun 3, 1907
ANNUAL SEVEN-DAY MINIMUM	(a)210	Jan 24	276	Sep 24	137	Aug 9, 1908
MAXIMUM PEAK FLOW			(b)3,030	Mar 30	8,400	Apr 10, 1922
MAXIMUM PEAK STAGE			(a)5.95	Mar 28	(c)11.20	Apr 10 ,1922
INSTANTANEOUS LOW FLOW			(d)270	Sep 28-29	(f)93	Nov 26, 1941
ANNUAL RUNOFF (CFSM)	0.742		0.867		0.815	
ANNUAL RUNOFF (INCHES)	10.07		11.80		11.07	
10 PERCENT EXCEEDS	999		1,250		1,060	
50 PERCENT EXCEEDS	384		404		436	
90 PERCENT EXCEEDS	260		290		258	

(a) Ice affected
(b) Gage height, 5.33 ft
(c) From floodmarks, caused by failure of a dam at Pulcifer 4 mi above station
(d) May also have occurred additional days
(e) Estimated due to ice effect or missing record

04071765 OCONTO RIVER NEAR OCONTO, WI

LOCATION.--Lat 44°51'38", long 87°59'02", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.32, T.28 N., R.21 E., Oconto County, Hydrologic Unit 04030104, on left bank 30 ft upstream from County Highway J bridge, 0.7 mi downstream from mouth of Little River, and 4.6 mi west of Oconto.

DRAINAGE AREA.--966 mi^2.

PERIOD OF RECORD.--October 1988 to September 1990, October 1997 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 583.14 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Flow regulated by Machickanee Flowage (capacity, 556 acre-ft) 3.9 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	508	458	691	e540	e330	e650	4,180	1,230	2,850	654	375	396
2	498	433	546	e470	e330	e750	3,410	1,170	2,470	626	343	356
3	466	448	529	e540	e330	e900	2,980	1,070	2,290	574	318	352
4	473	801	487	e630	e320	e930	2,610	1,020	2,280	663	394	366
5	461	906	439	e450	e310	e1,100	2,390	988	1,810	787	360	325
6	461	878	e490	e400	e350	e1,000	2,320	855	1,640	932	384	337
7	450	823	e470	e380	e330	e960	2,230	837	1,400	1,150	420	330
8	423	676	e480	e380	e350	e910	2,130	1,110	1,190	1,030	370	312
9	414	504	e470	e380	e350	e870	2,140	1,380	992	942	344	326
10	374	546	e490	e390	e370	e800	2,190	1,640	1,070	939	346	325
11	393	640	e440	e390	e410	e780	2,110	1,560	1,170	777	358	315
12	409	608	e460	e390	e400	e750	2,010	1,390	1,270	703	375	306
13	396	570	e490	e380	e390	e710	1,890	1,470	1,390	697	351	309
14	436	552	e460	e420	e380	e680	1,770	1,580	1,610	644	323	318
15	428	538	e440	e410	e380	e660	1,430	1,670	1,540	616	327	598
16	408	535	e430	e430	e380	e630	1,440	1,520	1,550	605	306	501
17	411	505	e440	e440	e380	e610	1,480	1,410	2,900	565	306	368
18	389	573	e450	e400	e380	e600	1,380	1,370	3,040	552	307	420
19	390	660	e430	e390	e400	e580	1,480	1,210	2,590	524	334	400
20	409	657	e420	e370	e500	e610	1,430	982	2,510	505	329	398
21	409	620	e400	e360	e490	e650	1,520	960	1,940	521	330	345
22	390	578	e400	e350	e490	e690	1,720	895	1,660	509	338	329
23	394	1,200	e390	e360	e500	774	1,630	1,300	1,400	464	326	296
24	383	1,670	e410	e350	e550	968	1,600	2,290	1,140	432	312	272
25	385	1,250	e410	e340	e540	1,520	1,680	2,020	1,080	418	353	294
26	403	1,040	e410	e340	e550	4,320	1,680	1,880	944	400	411	302
27	377	875	e410	e340	e550	5,530	1,600	1,890	953	397	405	299
28	406	815	e570	e330	e600	5,660	1,440	1,790	773	394	397	294
29	406	756	e750	e330	e600	8,100	1,500	1,660	797	382	424	277
30	423	696	e660	e360	---	7,030	1,340	1,380	689	342	378	289
31	445	---	e580	e320	---	5,420	---	1,970	---	377	359	---
TOTAL	13,018	21,811	14,942	12,360	12,240	56,142	58,710	43,497	48,938	19,121	11,003	10,355
MEAN	420	727	482	399	422	1,811	1,957	1,403	1,631	617	355	345
MAX	508	1,670	750	630	600	8,100	4,180	2,290	3,040	1,150	424	598
MIN	374	433	390	320	310	580	1,340	837	689	342	306	272
CFSM	0.43	0.75	0.50	0.41	0.44	1.87	2.03	1.45	1.69	0.64	0.37	0.36
IN.	0.50	0.84	0.58	0.48	0.47	2.16	2.26	1.68	1.88	0.74	0.42	0.40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2004, BY WATER YEAR (WY)

MEAN	407	472	361	308	360	917	1,247	897	933	460	393	463
MAX	909	727	557	399	565	1,811	1,957	1,403	1,631	751	635	1,044
(WY)	(2003)	(2004)	(2002)	(2004)	(1998)	(2004)	(2004)	(2004)	(2004)	(2000)	(2002)	(1990)
MIN	240	280	251	240	263	459	423	448	370	260	261	196
(WY)	(2000)	(2000)	(1990)	(2000)	(1990)	(2001)	(1990)	(1998)	(1999)	(1989)	(1989)	(1999)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1989 - 2004	
ANNUAL TOTAL	257,376		322,137			
ANNUAL MEAN	705		880		601	
HIGHEST ANNUAL MEAN					880	2004
LOWEST ANNUAL MEAN					433	2000
HIGHEST DAILY MEAN	4,390	Apr 17	8,100	Mar 29	8,100	Mar 29, 2004
LOWEST DAILY MEAN	(a)230	(b)Jan 24-28	272	Sep 24	153	Sep 4, 1999
ANNUAL SEVEN-DAY MINIMUM	(a)231	Jan 24	290	Sep 24	181	(c)Jul 30, 1998
MAXIMUM PEAK FLOW			8,320	Mar 29	8,320	Mar 29, 2004
MAXIMUM PEAK STAGE			13.24	Mar 29	13.24	Mar 29, 2004
ANNUAL RUNOFF (CFSM)	0.730		0.911		0.623	
ANNUAL RUNOFF (INCHES)	9.91		12.41		8.46	
10 PERCENT EXCEEDS	1,560		1,740		1,210	
50 PERCENT EXCEEDS	464		522		399	
90 PERCENT EXCEEDS	270		330		240	

(a) Ice affected
(b) Also occurred Jan. 30 and 31
(c) Also occurred Sept. 3, 1999
(e) Estimated due to ice effect or missing record

LOCATION.--Lat 44°32'09", long 88°07'47", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.19, T.24 N., R.20 E., Brown County, Hydrologic Unit 04030103, on left bank upstream from County Trunk Highway FF bridge 2.2 mi southwest of Howard, and about 9 mi upstream from mouth.

DRAINAGE AREA.--108 mi^2.

PERIOD OF RECORD.--May 1988 to current year.

GAGE.--Continuous water-stage recorder since April 1988. Elevation of gage is 605 ft above NGVD of 1929, from topographic map.

REMARKS.-Records good except those for estimated daily discharges and discharges less than 0.5 ft^3/s, which are poor (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	e4.4	59	e70	e2.3	e240	246	24	645	12	1.2	0.89
2	3.0	4.3	e39	e60	e2.3	e800	171	22	e350	12	1.1	0.93
3	4.4	5.1	e46	e100	e2.2	e900	131	19	e220	9.5	1.3	0.65
4	4.3	41	e41	e90	e2.1	e590	108	17	e140	21	1.1	0.40
5	3.7	108	e27	e66	e2.0	e550	88	15	105	14	1.2	0.28
6	4.5	117	e23	e53	e2.0	e900	76	14	80	17	0.83	0.63
7	5.0	77	e22	e44	e2.0	e700	71	14	61	25	0.67	0.77
8	5.5	51	e21	e38	e2.0	e560	65	36	52	29	0.71	0.36
9	4.6	e28	e21	e34	e2.0	e430	57	200	687	23	0.87	0.18
10	3.9	e26	e30	e31	e2.0	e320	51	220	1,180	19	0.65	0.12
11	3.2	25	e42	e29	e2.0	e220	46	153	822	15	0.47	0.10
12	2.7	24	e57	e27	e2.0	e160	41	116	888	12	0.60	0.09
13	3.4	24	e70	e24	e2.0	e140	35	194	646	11	0.43	0.08
14	4.4	23	e37	e21	e2.0	e120	31	373	591	9.5	0.33	0.27
15	4.1	21	e26	e18	e2.0	e110	e30	337	676	9.3	0.29	1.2
16	4.9	19	e19	e15	e2.1	e100	e31	236	404	8.1	0.22	0.92
17	5.7	17	e17	e13	e2.3	e93	32	144	673	7.7	0.13	0.92
18	5.1	23	e16	e12	e2.5	e85	31	102	727	7.8	0.17	0.29
19	4.9	45	e14	e10	e2.7	e90	32	74	394	5.6	0.32	0.14
20	4.4	85	e13	e9.0	e3.0	216	30	120	210	4.6	0.50	0.11
21	4.8	71	e14	e7.6	e3.5	e280	39	227	121	4.0	0.38	0.10
22	4.6	51	e15	e6.6	e4.3	e190	50	287	80	3.4	0.16	0.09
23	4.8	175	e13	e5.8	e5.6	e120	53	585	61	2.2	0.11	0.07
24	4.3	567	e12	e5.0	e7.2	112	39	1,220	47	1.6	0.10	0.06
25	4.1	e410	e11	e4.4	e9.3	153	41	878	38	1.6	0.69	0.05
26	3.9	e210	e11	e3.8	e12	377	53	479	30	1.6	0.89	0.03
27	4.1	131	e12	e3.4	e17	539	61	290	23	1.3	1.4	0.01
28	4.6	100	e46	e3.1	e32	426	49	186	21	1.4	0.90	0.00
29	4.1	85	e130	e2.8	e67	805	37	136	19	1.3	0.59	0.00
30	4.1	71	e120	e2.6	---	727	29	122	16	1.3	0.66	0.00
31	e4.1	---	e80	e2.4	---	386	---	345	---	1.1	1.1	---
TOTAL	132.3	2,638.8	1,104	811.5	201.4	11,439	1,854	7,185	10,007	292.9	20.07	9.74
MEAN	4.27	88.0	35.6	26.2	6.94	369	61.8	232	334	9.45	0.65	0.32
MAX	5.7	567	130	100	67	900	246	1,220	1,180	29	1.4	1.2
MIN	2.7	4.3	11	2.4	2.0	85	29	14	16	1.1	0.10	0.00
CFSM	0.04	0.81	0.33	0.24	0.06	3.42	0.57	2.15	3.09	0.09	0.01	0.00
IN.	0.05	0.91	0.38	0.28	0.07	3.94	0.64	2.47	3.45	0.10	0.01	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2004, BY WATER YEAR (WY)

MEAN	8.89	31.5	17.0	7.61	25.3	156	153	64.0	117	28.4	12.1	7.81
MAX	52.7	207	93.5	36.8	102	369	318	232	370	295	106	36.8
(WY)	(1996)	(1993)	(1993)	(1996)	(1998)	(2004)	(1994)	(2004)	(1990)	(1993)	(2003)	(1990)
MIN	0.14	1.02	0.59	0.11	0.51	16.4	9.40	2.79	0.00	0.00	0.00	0.00
(WY)	(2000)	(2000)	(1990)	(1990)	(1989)	(2000)	(1990)	(1988)	(1988)	(1988)	(1988)	(1989)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1988 - 2004	
ANNUAL TOTAL	16,829.41		35,695.71			
ANNUAL MEAN	46.1		97.5		53.5	
HIGHEST ANNUAL MEAN					123	1993
LOWEST ANNUAL MEAN					14.5	2000
HIGHEST DAILY MEAN	567	Nov 24	1,220	May 24	3,690	Jun 23, 1990
LOWEST DAILY MEAN	0.10	Jan 22	0.00	Sep 28-30	0.00 (a)	Jun 1, 1988
ANNUAL SEVEN-DAY MINIMUM	0.38	Jul 23	0.02	Sep 24	0.00 (a)	Jun 1, 1988
MAXIMUM PEAK FLOW			(b)1,400	May 24	(c)4,520	Jun 23, 1990
MAXIMUM PEAK STAGE			(d)17.67	Mar 3	(f)21.00	Jun 23, 1990
INSTANTANEOUS LOW FLOW			0.00	Sep 27-30	0.00 (a)	Jun 1, 1988
ANNUAL RUNOFF (CFSM)	0.427		0.903		0.495	
ANNUAL RUNOFF (INCHES)	5.80		12.30		6.73	
10 PERCENT EXCEEDS	135		325		125	
50 PERCENT EXCEEDS	9.4		19		6.9	
90 PERCENT EXCEEDS	2.3		0.60		0.51	

(a) Also occurred additional days
(b) Gage height, 16.16 ft
(c) Based on rating curve extended above 1,500 ft^3/s on basis of contracted-opening measurement of peak flow
(d) Ice affected
(e) Estimated due to ice effect or missing record
(f) Estimated from floodmarks

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

PRECIPITATION QUANTITY

PERIOD OF RECORD.--November 2003 to September 2004 (non-frozen precipitation).

GAGE.--Tipping bucket rain gage with electronic datalogger.

REMARKS.--Rainfall estimated to be 0.00 for Dec. 10-12, 15-16, Jan. 1, 5, 12, 17-19, 21, 24, 27 and Feb. 2-3, 6-7, 12, 19-21, 23 because recorded precipitation interpreted as collector snowmelt. Rainfall data missing for the periods Oct. 31-Nov. 1, Feb. 8-10, Mar. 2-Apr. 13, 15-16.

EXTREMES FOR CURRENT YEAR.-- Maximum daily rainfall, 1.59 in., Nov. 23.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	0.00	0.00	0.00	0.62	---	0.00	0.11	0.00	0.11	0.00
2	---	0.00	0.00	0.56	0.00	0.00	---	0.00	0.00	0.00	0.07	0.00
3	---	0.81	0.00	0.00	0.00	---	---	0.00	0.00	0.07	0.01	0.00
4	---	0.76	0.00	0.00	0.00	---	---	0.00	0.00	1.09	0.00	0.00
5	---	0.00	0.00	0.00	0.00	---	---	0.00	0.00	0.00	0.00	0.00
6	---	0.00	0.00	0.00	0.00	---	---	0.11	0.08	0.01	0.00	0.38
7	---	0.00	0.00	0.00	0.00	---	---	0.01	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	---	---	---	1.32	0.00	0.00	0.20	0.00
9	0.00	0.00	0.22	0.00	---	---	---	0.09	0.59	0.00	0.02	0.00
10	0.00	0.12	0.00	0.00	---	---	---	0.02	0.07	0.00	0.00	0.00
11	0.23	0.01	0.00	0.00	0.00	---	---	0.00	0.51	0.00	0.00	0.00
12	0.00	0.04	0.00	0.00	0.00	---	---	0.66	0.05	0.00	0.00	0.00
13	0.03	0.00	0.00	0.00	0.00	---	0.00	0.78	0.46	0.00	0.01	0.00
14	0.16	0.00	0.00	0.00	0.00	---	0.00	0.40	0.11	0.00	0.00	0.00
15	0.00	0.01	0.00	0.00	0.00	---	---	0.00	0.00	0.00	0.00	0.13
16	0.00	0.00	0.00	0.00	0.00	---	---	0.00	1.17	0.01	0.00	0.00
17	0.00	0.05	0.00	0.00	0.00	---	0.13	0.05	0.13	0.01	0.00	0.00
18	0.00	0.48	0.00	0.00	0.00	---	0.02	0.00	0.00	0.00	0.28	0.00
19	0.00	0.00	0.00	0.00	0.00	---	0.13	0.09	0.00	0.00	0.00	0.00
20	0.00	0.01	0.00	0.00	0.00	---	0.36	0.62	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	---	0.15	0.39	0.00	0.01	0.00	0.00
22	0.12	0.05	0.00	0.00	0.00	---	0.00	0.20	0.00	0.00	0.00	0.00
23	0.00	1.59	0.00	0.00	0.00	---	0.00	1.14	0.30	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	---	0.09	0.32	0.01	0.00	0.44	0.00
25	0.01	0.00	0.00	0.00	0.00	---	0.40	0.00	0.00	0.00	0.17	0.00
26	0.00	0.00	0.00	0.00	0.00	---	0.01	0.00	0.00	0.00	0.04	0.00
27	0.00	0.00	0.58	0.00	0.00	---	0.00	0.20	0.20	0.00	0.36	0.05
28	0.08	0.03	0.16	0.00	0.00	---	0.05	0.06	0.00	0.00	0.09	0.00
29	0.01	0.00	0.00	0.00	0.00	---	0.00	0.01	0.00	0.08	0.00	0.00
30	0.01	0.00	0.00	0.00	---	---	0.07	0.82	0.00	0.00	0.01	0.00
31	---	---	0.00	0.00	---	---	---	1.04	---	0.00	0.00	---
TOTAL	---	---	0.96	0.56	---	---	---	8.33	3.79	1.28	1.81	0.56

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

WATER-QUALITY RECORD

PERIOD OF RECORD.--October 1988 to December 1992. April 1995 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: May 2002 to September 2004 (discontinued).
SPECIFIC CONDUCTANCE: May 2002 to September 2004 (discontinued).
SUSPENDED-SOLIDS DISCHARGE: October 2003 to September 2004.
TOTAL-PHOPHORUS DISCHARGE: October 2003 to September 2004.

INSTRUMENTATION.--Continuous water temperature recorder and specific conductance recorder from May 2002 to September 2004. Sensor located near midstream. Water-quality sampler October 2003 to September 2004.

REMARKS.--Records represent water temperature at sensor within 0.5°C. Records for water temperature were faulty Oct. 31, Feb. 8-10, Mar. 1-Apr. 9, 13, 14, and Sept. 26, 27, 30. Records for specific conductance were faulty Oct. 31, Feb. 8-10, Mar. 1-Apr. 9, 13, 14, and Sept. 26, 27, 30. Chemical analyses by Green Bay Metropolitan Sewerage District Laboratory. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 30.5°C, July 2, 21 and 2, 2002; minimum, 0.0° many days during 2003 water year.
SPECIFIC CONDUCTANCE: Maximum, 1,930 µS/cm, Jan. 15, 2003 (partial day); minimum, 340 µS/cm, June 4, 2002.
SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 1,730 tons, June 10, 2004; minimum daily, 0.00 tons, Sept. 27-30, 2004 (result of zero flow).
TOTAL-PHOPHORUS DISCHARGE: Maximum daily, 6,050 lbs, June 10, 2004; minimum daily, 0.00 lbs, Sept. 27-30, 2004 (result of zero flow).

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 27.5°C, July 20 and 22; minimum, 0.0°C, many days.
SPECIFIC CONDUCTANCE: Maximum, 1,380 µS/cm, Feb. 23; minimum, 310 µS/cm, Dec. 29.
SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 1,730 tons, June 10; minimum daily, 0.00 tons, Sept. 28-30 (result of zero flow).
TOTAL-PHOPHORUS DISCHARGE: Maximum daily, 6,050 lbs, June 10; minimum daily, 0.00 lbs, Sept. 27-30 (result of zero flow).

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.0	7.0	8.0	8.0	6.5	7.5	1.0	0.0	0.0	0.0	0.0	0.0
2	8.5	5.5	7.0	7.5	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
3	8.5	7.0	8.0	7.0	4.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0
4	9.0	6.5	7.5	6.0	5.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
5	8.5	5.5	7.0	6.0	5.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
6	9.0	5.0	7.0	5.0	3.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
7	10.5	7.0	8.5	3.0	1.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
8	13.5	9.5	11.0	1.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0
9	14.0	11.0	12.5	0.5	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
10	15.0	11.5	13.0	1.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0
11	15.0	12.0	13.5	3.5	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
12	14.5	12.0	13.0	3.5	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
13	13.5	11.0	12.0	3.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
14	12.5	10.5	12.0	2.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
15	11.0	9.0	10.0	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
16	10.0	7.5	8.5	4.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
17	9.5	7.0	8.5	5.5	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
18	11.5	8.0	9.5	6.5	5.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0
19	11.0	8.0	9.5	6.0	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0
20	13.0	8.5	10.5	6.0	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
21	12.0	10.5	11.5	5.0	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
22	10.5	8.5	9.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
23	9.5	8.5	9.0	4.5	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
24	9.0	7.0	8.0	4.0	1.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
25	10.0	7.5	9.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	8.5	7.0	7.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	7.5	6.0	7.0	2.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
28	7.5	6.5	7.0	2.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
29	7.5	6.0	7.0	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
30	9.0	6.5	8.0	1.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
31	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	15.0	5.0	9.3	8.0	0.0	3.1	1.0	0.0	0.0	0.0	0.0	0.0

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	---	---	---	---	---	---	13.0	9.5	11.0
2	0.0	0.0	0.0	---	---	---	---	---	---	11.5	8.5	10.0
3	0.0	0.0	0.0	---	---	---	---	---	---	13.5	7.5	10.5
4	0.0	0.0	0.0	---	---	---	---	---	---	15.5	10.0	12.5
5	0.0	0.0	0.0	---	---	---	---	---	---	14.0	11.0	12.5
6	0.0	0.0	0.0	---	---	---	---	---	---	15.5	11.5	13.0
7	0.0	0.0	0.0	---	---	---	---	---	---	16.0	11.5	13.5
8	---	---	---	---	---	---	---	---	---	13.0	11.0	11.5
9	---	---	---	---	---	---	---	---	---	12.0	10.5	11.0
10	---	---	---	---	---	---	10.0	7.5	8.5	13.5	11.0	12.5
11	0.0	0.0	0.0	---	---	---	8.0	5.5	7.0	16.0	12.5	14.0
12	0.0	0.0	0.0	---	---	---	6.5	4.5	5.5	20.0	14.0	17.0
13	0.0	0.0	0.0	---	---	---	---	---	---	19.0	16.5	18.0
14	0.0	0.0	0.0	---	---	---	---	---	---	17.5	14.0	16.0
15	0.0	0.0	0.0	---	---	---	12.0	6.5	9.5	14.5	12.0	13.0
16	0.0	0.0	0.0	---	---	---	15.5	10.0	13.0	15.5	12.0	13.5
17	0.0	0.0	0.0	---	---	---	15.5	12.5	14.0	17.5	13.5	15.5
18	0.0	0.0	0.0	---	---	---	16.0	12.0	14.0	18.0	14.5	16.0
19	0.0	0.0	0.0	---	---	---	16.5	14.5	15.5	19.0	13.5	16.5
20	0.0	0.0	0.0	---	---	---	14.5	11.0	12.0	20.0	15.5	17.5
21	0.0	0.0	0.0	---	---	---	11.5	9.5	10.5	17.5	15.0	16.0
22	0.0	0.0	0.0	---	---	---	13.5	8.5	10.5	15.0	13.0	14.0
23	0.0	0.0	0.0	---	---	---	12.5	8.0	10.5	13.0	11.5	12.5
24	0.0	0.0	0.0	---	---	---	12.0	8.0	10.0	11.5	11.0	11.0
25	0.0	0.0	0.0	---	---	---	10.5	8.5	9.0	12.0	11.0	11.5
26	0.0	0.0	0.0	---	---	---	11.0	7.5	9.0	14.5	12.0	13.0
27	0.0	0.0	0.0	---	---	---	12.0	6.5	9.0	16.0	13.5	14.0
28	0.0	0.0	0.0	---	---	---	16.0	8.5	12.0	16.5	13.0	14.5
29	0.0	0.0	0.0	---	---	---	15.5	13.0	14.5	14.0	12.5	13.0
30	---	---	---	---	---	---	13.5	10.0	11.0	13.5	12.5	13.0
31	---	---	---	---	---	---	---	---	---	13.5	13.0	13.0
MONTH	0.0	0.0	0.0	---	---	---	16.5	4.5	10.8	20.0	7.5	13.6
		JUNE			JULY			AUGUST			SEPTEMBER	
1	14.5	13.5	14.0	24.5	20.0	22.0	27.0	20.0	23.5	22.5	17.5	19.5
2	17.0	14.0	15.0	24.5	19.0	21.5	24.5	21.5	23.0	23.5	18.0	20.5
3	18.0	14.5	16.0	22.0	18.5	20.5	24.5	20.0	22.0	24.5	19.0	22.0
4	19.0	14.0	16.0	20.5	19.5	20.0	23.5	20.0	21.5	24.0	19.0	21.5
5	18.5	14.5	16.5	22.0	18.0	20.0	22.5	17.0	20.0	24.0	19.0	21.5
6	20.5	16.0	18.0	19.5	17.5	18.5	23.0	16.5	20.0	23.0	20.0	21.5
7	23.0	17.0	20.0	17.5	16.5	17.0	21.5	16.5	19.5	20.5	17.0	19.0
8	24.0	20.0	22.0	18.0	15.5	16.5	23.0	17.5	20.0	20.0	16.0	18.0
9	23.0	18.5	19.5	18.0	16.5	17.0	24.0	19.5	21.5	21.0	15.0	18.0
10	18.5	16.0	17.5	21.0	16.0	18.5	21.0	17.5	19.5	21.0	14.5	18.0
11	16.0	14.0	15.0	21.0	19.5	20.0	18.0	15.5	16.5	22.5	17.5	20.0
12	15.5	14.0	14.5	23.5	20.0	21.5	19.0	14.5	17.0	24.5	17.5	20.5
13	18.0	15.0	16.5	24.5	21.0	22.5	19.0	15.0	17.0	25.0	17.5	21.0
14	18.5	17.0	17.5	24.5	20.0	22.0	20.5	14.0	17.0	24.5	19.0	21.5
15	20.0	17.5	18.5	25.0	20.0	22.0	21.5	14.0	18.0	22.5	20.5	21.0
16	20.5	18.0	19.5	24.0	20.5	22.0	21.0	15.0	18.0	20.5	16.5	18.5
17	19.5	18.5	19.0	25.0	20.0	22.0	22.5	17.0	19.5	19.0	14.5	16.5
18	20.0	18.5	19.5	24.0	19.5	21.5	23.0	16.5	19.5	20.5	15.0	18.0
19	19.5	17.0	18.5	25.5	20.0	22.5	20.0	14.5	17.5	20.5	15.0	18.0
20	19.5	16.5	17.5	27.5	21.5	24.5	20.5	15.5	17.5	21.0	16.0	18.5
21	18.5	17.0	17.5	25.0	22.5	24.0	19.5	12.5	16.5	21.0	14.5	18.0
22	19.5	16.5	18.0	27.5	22.5	24.5	22.5	14.0	18.0	22.5	15.0	18.5
23	20.5	16.0	18.0	25.0	19.5	22.0	21.0	17.0	18.5	22.0	14.5	18.5
24	19.0	15.5	17.0	23.5	18.5	20.5	21.0	17.5	19.0	21.0	16.5	18.5
25	18.0	14.5	16.5	24.0	16.5	20.0	22.0	19.0	20.5	22.0	15.0	17.5
26	18.0	14.5	16.5	24.5	17.0	20.5	24.0	19.5	21.5	---	---	---
27	18.0	15.5	17.0	25.5	18.5	22.0	25.0	20.5	23.0	---	---	---
28	19.5	15.5	18.0	25.5	19.5	22.5	22.0	17.0	19.5	19.0	12.5	15.0
29	22.5	18.0	20.0	23.0	20.5	22.0	19.5	15.0	17.0	18.5	9.0	13.0
30	23.5	19.0	21.0	24.5	19.5	22.0	20.0	14.5	17.0	---	---	---
31	---	---	---	24.5	20.0	22.5	20.0	15.0	17.5	---	---	---
MONTH	24.0	13.5	17.7	27.5	15.5	21.1	27.0	12.5	19.2	25.0	9.0	19.0
YEAR	27.5	0.0	10.4									

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	894	821	872	1,040	1,030	1,040	858	696	835	660	562	616
2	903	885	893	1,050	1,040	1,050	890	697	796	713	584	673
3	913	843	872	1,060	937	1,030	928	802	907	584	458	536
4	882	856	864	982	713	834	954	804	940	552	425	458
5	917	881	906	981	789	897	971	947	961	574	538	555
6	919	913	917	789	696	711	986	956	970	647	573	611
7	938	893	925	773	725	754	1,000	976	989	741	647	695
8	952	929	944	825	773	796	992	970	983	845	741	788
9	963	879	953	870	746	854	994	975	989	905	845	873
10	982	960	970	906	868	895	975	899	929	932	905	919
11	994	919	971	922	906	914	956	777	921	945	931	935
12	963	932	946	929	922	926	965	686	913	952	945	948
13	943	899	936	939	922	931	1,010	963	993	955	944	952
14	974	913	926	949	938	944	1,050	993	1,030	971	946	963
15	939	905	919	968	949	961	1,080	1,050	1,070	966	930	957
16	978	931	949	982	966	978	1,080	1,070	1,080	969	952	959
17	993	954	971	980	972	978	1,110	925	1,100	969	964	967
18	1,010	992	999	972	933	948	1,120	1,100	1,110	975	965	971
19	1,020	952	1,010	948	931	938	1,120	1,050	1,110	984	973	976
20	1,050	1,020	1,020	947	887	915	1,150	1,030	1,120	989	978	984
21	1,090	1,030	1,050	900	885	893	1,140	1,040	1,130	981	951	977
22	1,050	1,020	1,030	901	891	895	1,150	1,130	1,140	988	971	983
23	1,080	1,020	1,040	900	608	705	1,150	1,070	1,140	1,000	988	995
24	1,080	1,000	1,020	643	451	475	1,180	1,030	1,160	1,010	1,000	1,000
25	1,080	995	1,010	561	467	504	1,210	1,100	1,180	1,010	1,000	1,010
26	1,020	992	1,000	661	561	612	1,230	1,200	1,220	1,060	1,010	1,030
27	1,040	976	1,010	729	661	696	1,220	1,110	1,200	1,060	1,020	1,050
28	1,050	966	1,010	779	729	754	1,110	670	769	1,060	1,050	1,060
29	1,030	1,010	1,020	811	779	794	806	310	491	1,070	1,060	1,060
30	1,120	1,020	1,050	835	811	824	440	320	371	1,090	1,020	1,070
31	---	---	---	---	---	---	562	391	491	1,110	1,010	1,100
MONTH	1,120	821	967	1,060	451	848	1,230	310	969	1,110	425	893
		FEBRUARY			MARCH			APRIL			MAY	
1	1,260	1,080	1,150	---	---	---	---	---	---	853	828	842
2	1,220	1,130	1,170	---	---	---	---	---	---	861	830	846
3	1,190	1,170	1,180	---	---	---	---	---	---	859	833	849
4	1,220	884	1,210	---	---	---	---	---	---	863	839	854
5	1,230	1,220	1,220	---	---	---	---	---	---	855	837	848
6	1,220	1,210	1,220	---	---	---	---	---	---	858	839	850
7	1,210	1,200	1,200	---	---	---	---	---	---	864	844	853
8	---	---	---	---	---	---	---	---	---	863	802	830
9	---	---	---	---	---	---	---	---	---	872	739	800
10	---	---	---	---	---	---	808	797	803	778	739	760
11	1,230	1,210	1,220	---	---	---	811	800	806	823	778	796
12	1,210	1,200	1,210	---	---	---	814	797	807	839	823	833
13	1,210	1,200	1,200	---	---	---	---	---	---	861	734	825
14	1,210	1,200	1,210	---	---	---	---	---	---	746	706	726
15	1,210	1,170	1,210	---	---	---	836	727	796	797	746	768
16	1,230	1,090	1,210	---	---	---	833	767	804	823	797	809
17	1,250	1,170	1,230	---	---	---	833	795	816	848	823	833
18	1,250	1,240	1,250	---	---	---	848	806	830	858	829	847
19	1,250	1,240	1,240	---	---	---	831	803	819	867	749	824
20	1,240	1,180	1,230	---	---	---	834	795	817	839	791	813
21	1,250	1,220	1,230	---	---	---	829	799	817	825	721	744
22	1,300	1,250	1,280	---	---	---	832	796	817	748	728	737
23	1,380	1,300	1,350	---	---	---	827	798	815	747	606	697
24	1,360	1,240	1,310	---	---	---	837	803	821	606	525	552
25	1,320	1,280	1,300	---	---	---	828	809	822	601	533	567
26	1,300	1,270	1,280	---	---	---	831	809	822	642	601	622
27	1,300	1,260	1,280	---	---	---	835	791	816	702	637	669
28	1,270	1,250	1,260	---	---	---	830	798	817	739	702	719
29	1,250	988	1,170	---	---	---	841	814	830	770	738	753
30	---	---	---	---	---	---	851	833	847	780	748	769
31	---	---	---	---	---	---	---	---	---	748	585	667
MONTH	1,380	884	1,230	---	---	---	851	727	817	872	525	771

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	665	562	610	838	772	804	883	837	859	824	778	797
2	733	665	705	845	764	806	860	825	846	817	725	800
3	773	733	754	848	771	812	852	813	834	837	743	817
4	801	773	787	830	704	748	845	814	830	826	796	815
5	828	792	804	831	770	811	851	826	837	834	791	816
6	830	799	818	831	784	805	865	838	848	838	770	798
7	843	797	824	827	803	822	861	838	849	842	722	800
8	852	797	828	838	811	828	854	822	840	869	842	859
9	835	315	470	831	793	812	838	808	821	908	839	862
10	413	331	374	817	797	809	837	819	828	870	782	845
11	520	413	475	828	802	815	843	813	828	850	816	834
12	556	520	544	836	819	825	850	811	831	835	818	826
13	613	556	588	856	822	835	845	774	827	838	817	826
14	634	544	603	863	837	850	856	817	834	836	640	786
15	572	528	541	876	844	858	855	817	834	824	693	754
16	645	572	615	883	847	866	849	823	835	829	740	804
17	617	430	512	889	840	872	850	801	829	837	695	770
18	500	442	458	913	771	844	856	685	815	857	837	850
19	598	500	555	784	734	761	821	789	804	871	823	861
20	663	598	634	834	765	791	812	778	793	869	855	862
21	708	663	686	867	833	848	823	713	810	864	847	854
22	737	708	725	880	851	868	848	737	822	860	842	849
23	751	737	746	889	865	877	842	802	821	858	840	845
24	768	747	760	896	848	873	826	753	810	851	831	842
25	785	768	780	882	734	861	798	751	772	861	831	846
26	809	782	800	877	845	861	801	763	779	---	---	---
27	821	793	810	871	841	858	802	767	784	---	---	---
28	825	792	814	875	843	861	825	799	813	855	818	848
29	835	794	821	877	844	861	832	792	810	864	657	846
30	832	780	810	869	837	855	806	777	794	---	---	---
31	---	---	---	868	839	856	812	781	795	---	---	---
MONTH	852	315	675	913	704	834	883	685	820	908	640	826
YEAR	1,380	310	875									

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

SUSPENDED SOLIDS, DRIED AT 105 DEGREES CELSIUS, WATER, UNFILTERED, TONS PER DAY
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.030	0.060	0.71	e3.15	0.030	38.5	13.4	0.50	412	0.32	0.030	0.010
2	0.030	0.060	0.45	0.42	0.030	270	7.51	0.46	67.4	0.31	0.020	0.010
3	0.050	0.070	0.52	e5.34	0.030	121	4.64	0.42	34.6	0.23	0.030	0.008
4	0.050	0.77	0.44	e4.57	0.020	77.0	3.22	0.39	21.9	e0.74	0.020	0.005
5	0.050	2.52	0.28	0.48	0.020	117	2.26	0.36	16.4	e0.36	0.030	0.003
6	0.060	3.85	0.22	0.39	0.020	306	1.68	0.36	12.3	e0.51	0.020	0.007
7	0.060	2.42	0.20	0.33	0.020	235	1.38	0.37	9.49	e1.00	0.010	0.009
8	0.070	1.29	0.18	0.29	0.030	194	1.31	1.77	7.90	e1.29	0.010	0.004
9	0.060	0.57	0.17	0.27	0.030	108	1.21	22.9	1,060	0.51	0.020	0.002
10	0.050	0.50	0.24	0.25	0.030	58.5	1.16	14.0	1,730	0.42	0.010	0.001
11	0.040	0.48	e1.48	0.23	0.030	29.2	1.10	4.48	286	0.33	0.008	0.001
12	0.040	0.47	e2.32	0.22	0.030	15.4	1.04	3.51	216	0.27	0.010	0.001
13	0.050	0.47	e3.15	0.20	0.030	9.80	0.94	31.1	122	0.25	0.007	0.001
14	0.060	0.46	0.24	0.18	0.030	6.10	0.83	82.1	179	0.22	0.005	0.004
15	0.060	0.43	0.16	0.16	0.030	4.06	0.77	33.8	420	0.21	0.005	0.020
16	0.070	0.39	0.11	0.13	0.040	2.91	0.78	15.7	210	0.19	0.003	0.010
17	0.080	0.35	0.090	0.12	0.050	2.50	0.79	4.99	436	0.18	0.002	0.010
18	0.070	0.49	0.090	0.11	0.050	2.12	0.76	2.60	343	0.18	0.002	0.004
19	0.070	0.82	0.080	0.090	0.060	2.09	0.75	1.56	92.7	0.13	0.004	0.002
20	0.060	1.00	0.070	0.080	0.070	e11.3	0.70	7.29	18.8	0.11	0.007	0.002
21	0.060	0.84	0.080	0.070	0.090	e22.1	0.87	72.4	4.62	0.10	0.005	0.002
22	0.060	0.71	0.090	0.060	0.12	e8.25	1.09	65.9	2.70	0.080	0.002	0.002
23	0.060	19.1	0.080	0.060	0.17	2.08	1.13	165	2.00	0.050	0.001	0.001
24	0.060	158	0.070	0.050	0.24	2.08	0.82	473	1.49	0.040	0.001	0.001
25	0.060	50.9	0.070	0.040	0.33	5.60	0.85	174	1.19	0.040	0.009	0.001
26	0.050	11.3	0.070	0.040	0.44	76.9	1.06	42.3	0.90	0.040	0.010	0.001
27	0.060	3.48	0.080	0.040	0.51	149	1.19	18.0	0.69	0.030	0.020	0.000
28	0.060	1.42	e1.69	0.030	0.79	55.4	0.95	8.89	0.61	0.030	0.010	0.000
29	0.060	1.10	e7.89	0.030	1.42	485	0.71	5.03	0.52	0.030	0.007	0.000
30	0.060	0.89	e7.00	0.030	---	222	0.58	4.30	0.43	0.030	0.008	0.000
31	0.060	---	e3.84	0.030	---	34.8	---	152	---	0.020	0.010	---
TOTAL	1.760	265.210	32.160	17.490	4.790	2,673.69	55.48	1,409.48	5,710.64	8.250	0.336	0.122

WTR YR 2004 TOTAL 10,179.408

e Estimated

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.71	3.79	50.5	e115	1.31	453	140	10.3	1,060	14.5	1.08	0.64
2	1.69	3.60	30.6	23.6	1.32	2,920	92.9	9.15	426	13.4	0.96	0.67
3	2.52	4.34	35.4	e181	1.28	2,570	67.7	7.90	236	9.82	1.11	0.46
4	2.54	66.9	30.9	e159	1.24	1,460	53.6	7.00	135	e33.7	0.88	0.28
5	2.22	208	19.2	27.0	1.19	1,430	41.8	6.23	92.0	e21.3	0.94	0.19
6	2.75	267	15.3	21.9	1.21	1,820	34.5	5.89	62.7	e26.5	0.63	0.42
7	3.13	144	13.7	18.4	1.22	3,770	30.9	5.68	46.3	e41.1	0.51	0.52
8	3.48	69.1	12.3	16.1	1.24	4,750	27.7	19.2	176	e48.7	0.55	0.24
9	2.97	26.9	11.5	14.6	1.25	2,740	23.3	253	3,350	20.1	0.69	0.11
10	2.63	19.8	15.4	13.4	1.27	1,530	20.6	268	6,050	16.9	0.51	0.08
11	2.26	18.8	e60.2	12.7	1.28	790	18.0	155	1,370	13.9	0.37	0.07
12	1.96	18.0	e88.7	12.0	1.30	431	15.7	64.6	1,140	11.7	0.49	0.06
13	2.59	18.0	e115	10.8	1.33	284	13.3	101	938	11.1	0.35	0.06
14	3.50	17.4	14.8	9.57	1.36	192	12.0	262	1,130	9.92	0.27	0.18
15	3.41	15.9	9.71	8.30	1.40	141	11.5	137	1,470	10.1	0.24	0.84
16	4.22	14.3	6.65	7.01	1.50	102	12.0	88.8	823	9.05	0.19	0.65
17	5.09	12.7	5.60	6.14	1.68	75.6	12.5	95.5	1,430	9.03	0.11	0.65
18	4.70	17.4	5.24	5.74	1.87	55.3	12.4	84.9	1,520	9.46	0.15	0.21
19	4.71	34.1	4.64	4.84	2.07	e131	12.6	68.5	703	7.05	0.28	0.10
20	4.45	64.0	4.36	4.41	2.35	e402	12.1	126	408	6.00	0.43	0.08
21	4.98	49.9	4.75	3.77	3.17	e566	15.6	262	250	5.46	0.32	0.07
22	4.98	34.1	5.15	3.32	4.97	e343	20.2	322	157	4.73	0.14	0.07
23	5.35	236	4.53	2.95	8.27	71.7	21.6	749	113	2.93	0.09	0.06
24	4.71	1,380	4.23	2.57	13.6	66.2	16.1	1,550	81.7	2.07	0.08	0.05
25	4.35	832	3.92	2.29	22.4	86.0	17.1	536	63.2	1.99	0.55	0.04
26	4.03	325	3.97	2.00	31.8	264	22.2	241	46.8	1.85	0.70	0.02
27	4.09	181	4.38	1.82	24.2	527	25.7	142	34.4	1.50	1.05	0.00
28	4.43	122	e67.6	1.68	24.4	287	21.1	92.2	29.7	1.54	0.69	0.00
29	3.90	92.0	e253	1.53	55.6	1,110	16.0	68.3	24.8	1.29	0.44	0.00
30	3.77	68.2	e229	1.44	---	816	12.6	74.1	19.9	1.28	0.49	0.00
31	3.64	---	e136	1.35	---	238	---	557	---	1.01	0.78	---
TOTAL	110.76	4,364.23	1,266.23	696.23	217.08	30,421.8	853.3	6,369.25	23,386.5	368.98	16.07	6.82

WTR YR 2004 TOTAL 68,077.25

e Estimated

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Dis-charge, cfs (00060)	Instan-taneous dis-charge, cfs (00061)	Sam-pling method, code (82398)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Sus-pended sedi-ment concen-tration mg/L (80154)
OCT								
09...	1220	--	4.7	10	<5	.050	.120	--
23...	1152	--	4.9	10	<5	.220	.210	--
NOV								
04...	2215	--	73	50	8	.290	.410	--
05...	0945	--	102	50	8	--	.310	--
05...	2145	--	130	50	12	.280	.430	--
06...	0725	--	127	50	9	.280	.380	--
06...	0726	--	127	10	13	.280	.430	--
06...	0945	--	123	50	16	.270	.500	--
20...	1048	--	89	10	4	--	.140	--
24...	0930	--	605	50	136	--	.530	--
24...	2130	--	595	50	108	.230	.440	--
25...	0715	410	--	50	56	--	.500	--
25...	1215	410	--	50	44	--	.330	--
DEC								
04...	1245	41	--	10	4	--	.140	--
17...	1604	17	--	10	2	.050	.060	--
FEB								
12...	0914	2.0	--	10	5	.120	.120	--
26...	1030	12	--	10	14	.440	.560	--
28...	1145	32	--	50	10	--	.130	--
29...	2000	67	--	50	8	--	.170	--
MAR								
01...	0130	240	--	50	11	.130	.170	--
01...	1845	240	--	50	127	--	.520	--
02...	0530	800	--	50	139	--	.770	--
02...	0745	800	--	50	198	--	.870	562
02...	1145	800	--	50	166	--	.720	--
02...	1615	800	--	50	137	.250	.670	--
02...	1616	800	--	10	125	.250	.650	--
02...	2345	800	--	50	72	--	.580	--
03...	1030	900	--	50	85	.260	.600	514
03...	1031	900	--	10	51	.250	.440	--
03...	2200	900	--	50	63	--	.450	255
05...	1830	550	--	50	108	--	.520	--
06...	0415	900	--	50	118	--	.490	209
06...	1130	900	--	50	235	.300	.530	--
06...	1131	900	--	10	143	.260	.560	--
06...	2330	900	--	50	103	--	.490	--
07...	2200	700	--	50	169	--	1.85	--
24...	0815	--	109	10	6	--	.110	--
26...	1300	--	380	50	68	--	.100	--
27...	0100	--	567	50	170	--	.220	72
28...	1330	--	380	50	36	--	.110	--
29...	0415	--	595	50	116	.070	.150	--
29...	2215	--	983	50	432	--	.390	--
30...	1015	--	757	10	62	.090	.180	--
30...	2215	--	519	50	79	--	.130	--
31...	1150	--	383	50	27	.080	.110	--
APR								
07...	1135	--	73	70	7	.050	.080	--
13...	1000	--	36	10	10	.040	.070	--
29...	1040	--	37	10	7	--	.080	--
MAY								
09...	1015	--	207	10	54	--	.270	--
09...	1730	--	255	10	46	.110	.240	--
11...	0757	--	159	10	10	.180	.210	--
13...	1430	--	193	50	26	--	.050	--
13...	1930	--	292	50	124	--	.140	115
14...	0230	--	369	50	156	.050	.190	--
14...	1929	--	357	50	47	--	.090	--
14...	1930	--	357	50	52	--	.090	--
16...	0730	--	265	50	30	--	.060	--
17...	1530	--	135	70	12	--	.140	--
21...	1530	--	236	50	153	--	.220	--
23...	0330	--	389	50	66	--	.200	--
23...	1930	--	772	50	153	.110	.260	65
24...	1159	--	1,320	10	126	--	.280	--
24...	1200	--	1,320	50	232	.110	.300	213
25...	0001	--	1,210	50	128	--	.130	--
25...	1045	--	895	50	72	--	.110	--
26...	1300	--	469	10	29	--	.090	--
31...	1315	--	392	50	178	--	.280	--
31...	1600	--	557	50	238	--	.340	--

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Time	Dis-charge, cfs (00060)	Instan-taneous dis-charge, cfs (00061)	Sam-pling method, code (82398)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Sus-pended sedi-ment concen-tration mg/L (80154)
JUN								
01...	0400	--	687	50	192	.110	.340	--
02...	1050	350	--	50	64	--	.220	--
09...	0430	--	210	50	516	--	2.09	--
09...	0515	--	398	50	760	--	1.84	--
09...	0600	--	557	50	830	--	1.25	--
09...	0645	--	637	50	956	.130	1.13	--
09...	1229	--	610	10	468	.130	.670	--
09...	1500	--	859	50	484	.120	.650	1,080
10...	0415	--	1,250	50	944	--	1.40	--
11...	1415	--	779	50	100	--	.230	--
12...	0215	--	844	50	106	.140	.280	--
12...	1415	--	946	50	99	--	.210	85
14...	0215	--	512	50	64	.130	.320	--
17...	0115	--	475	50	242	--	.360	--
18...	0245	--	779	50	236	.120	.430	--
19...	0245	--	497	50	128	--	.320	--
21...	0900	--	118	10	13	--	.390	--
JUL								
07...	1620	--	27	10	8	.110	.150	--
22...	1330	--	3.2	10	9	--	.260	--
AUG								
05...	1245	--	1.3	10	8	.120	.140	--
19...	0933	--	.33	10	5	--	.160	--
SEP								
09...	1600	--	.15	10	4	.110	.120	--
29...	1630	--	.00	10	9	.110	.150	--