



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

## FOX-WOLF RIVER BASIN

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04073365 FOX RIVER AT PRINCETON, WI

LOCATION.--Lat 43°51'04", long 89°08'00", in SE ¼ NW ¼ SE ¼ sec.24, T.16 N., R.11 E., Green Lake County, Hydrologic Unit 04030201, on right bank at upstream side of bridge on State Highway 23 at Princeton, and at mile 105.

DRAINAGE AREA.--962 mi<sup>2</sup>.

PERIOD OF RECORD.--July 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 754.57 ft above NGVD of 1929.

REMARKS.--Records good except those for May 24-27 and May 30 to June 19 which are fair and estimated daily discharges, which are poor (see page 11). Occasional regulation by dams 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	365	615	928	e720	e460	1,050	1,500	868	2,860	2,600	1,080	696
2	380	599	867	e710	e470	982	1,490	827	2,930	2,470	1,040	701
3	397	567	919	e700	e480	1,000	1,450	813	2,940	2,370	996	694
4	376	628	917	e680	e480	1,090	1,430	808	2,920	2,320	958	689
5	383	688	896	e650	e490	1,290	1,420	764	2,880	2,240	918	691
6	387	703	877	e650	e510	1,410	1,390	753	2,820	2,180	899	694
7	387	713	869	e620	e520	1,480	1,350	680	2,720	2,130	872	653
8	392	678	843	e600	e530	1,550	1,300	777	2,640	2,080	856	629
9	389	693	799	e580	e540	1,630	1,250	900	2,570	2,030	839	626
10	389	707	778	e580	e540	1,680	1,210	980	2,560	1,990	809	635
11	404	695	768	e580	e540	1,710	1,170	1,030	3,010	1,950	771	626
12	416	704	764	e570	e540	1,690	1,130	1,020	3,230	1,900	743	609
13	403	689	e1,000	e560	e540	1,730	1,090	950	3,490	1,860	728	603
14	384	743	e980	e560	e540	1,760	1,050	1,070	3,700	1,800	717	591
15	406	773	e950	e560	e550	1,740	1,010	1,160	3,890	1,760	705	607
16	406	762	e870	e550	e560	1,720	981	1,220	e4,060	1,730	695	582
17	416	762	e820	e540	e570	1,700	934	1,270	e4,140	1,690	706	566
18	416	784	e800	e470	e580	1,680	972	1,280	e4,210	1,650	713	561
19	406	790	e770	e470	e600	1,660	995	1,290	e4,230	1,610	723	562
20	411	807	e780	e460	e620	1,630	933	1,390	4,190	1,580	714	556
21	380	767	e820	e450	e640	1,580	969	1,470	4,080	1,550	705	534
22	381	711	e820	e450	e680	1,570	971	1,640	3,930	1,510	714	520
23	374	874	e700	e460	e740	1,550	969	1,810	3,790	1,460	677	524
24	381	992	e670	e470	e780	1,520	949	1,970	3,670	1,430	647	530
25	380	880	e710	e470	e860	1,510	951	e2,100	3,490	1,390	541	505
26	377	921	e760	e470	e910	1,510	960	e2,180	3,310	1,340	566	495
27	371	960	e720	e460	e1,000	1,490	942	e2,310	3,140	1,290	653	489
28	396	938	e680	e460	1,120	1,500	982	2,360	3,000	1,250	630	449
29	601	932	e670	e450	1,140	1,520	986	2,430	2,850	1,210	648	476
30	694	950	e680	e450	---	1,510	880	2,540	2,730	1,160	674	483
31	652	---	e690	e460	---	1,500	---	2,760	---	1,100	681	---
TOTAL	12,900	23,025	25,115	16,860	18,530	46,942	33,614	43,420	99,980	54,630	23,618	17,576
MEAN	416	768	810	544	639	1,514	1,120	1,401	3,333	1,762	762	586
MAX	694	992	1,000	720	1,140	1,760	1,500	2,760	4,230	2,600	1,080	701
MIN	365	567	670	450	460	982	880	680	2,560	1,100	541	449
CFSM	0.43	0.80	0.84	0.57	0.66	1.57	1.16	1.46	3.46	1.83	0.79	0.61
IN.	0.50	0.89	0.97	0.65	0.72	1.82	1.30	1.68	3.87	2.11	0.91	0.68

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2004, BY WATER YEAR (WY)

	2001	2002	2003	2004
MEAN	627	684	734	534
MAX	791	768	870	662
(WY)	(2002)	(2004)	(2002)	(2002)
MIN	416	599	523	395
(WY)	(2004)	(2003)	(2003)	(2003)

## SUMMARY STATISTICS

ANNUAL TOTAL	211,509
ANNUAL MEAN	579
HIGHEST ANNUAL MEAN	
LOWEST ANNUAL MEAN	
HIGHEST DAILY MEAN	1,220
LOWEST DAILY MEAN	284
ANNUAL SEVEN-DAY MINIMUM	293
INSTANTANEOUS LOW FLOW	
ANNUAL RUNOFF (CFSM)	0.602
ANNUAL RUNOFF (INCHES)	8.18
10 PERCENT EXCEEDS	877
50 PERCENT EXCEEDS	536
90 PERCENT EXCEEDS	340

## FOR 2003 CALENDAR YEAR

ANNUAL TOTAL	211,509
ANNUAL MEAN	579
HIGHEST ANNUAL MEAN	
LOWEST ANNUAL MEAN	
HIGHEST DAILY MEAN	1,220
LOWEST DAILY MEAN	284
ANNUAL SEVEN-DAY MINIMUM	293
INSTANTANEOUS LOW FLOW	
ANNUAL RUNOFF (CFSM)	0.602
ANNUAL RUNOFF (INCHES)	8.18
10 PERCENT EXCEEDS	877
50 PERCENT EXCEEDS	536
90 PERCENT EXCEEDS	340

## FOR 2004 WATER YEAR

ANNUAL TOTAL	416,210
ANNUAL MEAN	1,137
HIGHEST ANNUAL MEAN	
LOWEST ANNUAL MEAN	
HIGHEST DAILY MEAN	(e)4,230
LOWEST DAILY MEAN	365
ANNUAL SEVEN-DAY MINIMUM	378
INSTANTANEOUS LOW FLOW	331
ANNUAL RUNOFF (CFSM)	1.18
ANNUAL RUNOFF (INCHES)	16.09
10 PERCENT EXCEEDS	2,360
50 PERCENT EXCEEDS	820
90 PERCENT EXCEEDS	460

## WATER YEARS 2001 - 2004

ANNUAL TOTAL	
ANNUAL MEAN	838
HIGHEST ANNUAL MEAN	1,137
LOWEST ANNUAL MEAN	563
HIGHEST DAILY MEAN	(e)4,230
LOWEST DAILY MEAN	284
ANNUAL SEVEN-DAY MINIMUM	293
INSTANTANEOUS LOW FLOW	272
ANNUAL RUNOFF (CFSM)	0.871
ANNUAL RUNOFF (INCHES)	11.84
10 PERCENT EXCEEDS	1,390
50 PERCENT EXCEEDS	680
90 PERCENT EXCEEDS	406

(e) Estimated

STREAMS TRIBUTARY TO LAKE MICHIGAN

04073462 WHITE CREEK AT SPRING GROVE ROAD NEAR GREEN LAKE, WI

LOCATION.--Lat 43°48'58", long 88°55'42", in SE 1/4 SE 1/4 NW 1/4 sec.34, T.16 N., R.13 E., Green Lake County, Hydrologic Unit 04030201, at culvert on Spring Grove Road at Forest Glen Beach, 2.6 mi southeast of Green Lake.

DRAINAGE AREA.--3.05 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1981 to June 1988, October 1996 to current year. Prior to October 2000, published as "at Forest Glen Beach".

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 800 ft. from topographic map.

REMARKS.--Records fair 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	0.27	0.22	3.1	2.4	1.2	53	4.9	2.7	28	12	4.2	1.7
2	0.25	0.29	3.0	2.4	1.2	25	5.1	2.6	24	12	3.2	1.7
3	0.27	0.36	3.0	2.3	1.1	13	5.0	2.5	22	11	3.0	1.6
4	0.24	0.93	3.2	2.2	e1.2	e12	4.9	2.7	21	12	2.9	1.5
5	0.22	0.32	3.0	2.2	1.2	68	4.9	2.4	20	11	2.7	1.5
6	0.21	0.29	2.9	e2.1	e1.2	15	4.9	2.5	20	11	2.6	1.5
7	0.20	0.29	2.9	2.1	e1.2	14	4.6	2.4	18	10	2.5	1.4
8	0.19	0.27	2.9	2.0	e1.2	12	4.4	15	17	9.5	2.5	1.4
9	0.19	0.27	2.9	1.9	1.2	11	4.2	13	18	9.1	2.4	1.3
10	0.18	0.27	3.4	1.9	1.1	9.9	4.1	13	26	8.4	2.4	1.2
11	0.21	0.28	2.9	1.9	1.1	9.3	4.0	12	77	7.9	2.4	1.1
12	0.30	0.28	2.7	1.9	1.0	8.4	3.6	12	37	7.7	2.3	1.0
13	0.28	0.30	2.7	e1.8	e1.0	7.6	3.5	11	39	7.3	2.2	1.0
14	0.36	0.30	2.7	e1.8	1.0	7.5	3.4	11	33	6.7	2.1	0.97
15	0.32	0.29	2.7	e1.7	e1.0	6.4	3.4	11	27	6.3	2.1	1.0
16	0.33	0.30	2.8	1.7	e1.0	6.0	3.4	10	30	6.2	2.1	0.98
17	0.30	0.30	2.7	e1.7	0.99	5.6	3.1	9.7	30	6.0	2.1	0.88
18	0.28	0.63	2.6	e2.4	0.99	5.1	3.9	9.3	23	5.9	2.1	0.80
19	0.26	0.37	2.4	e3.5	0.99	5.6	3.5	8.8	21	5.6	2.1	0.75
20	0.25	0.37	2.4	e2.1	e1.0	7.1	3.3	31	20	5.2	2.0	0.71
21	0.24	0.36	2.4	1.7	0.99	5.9	3.5	19	20	5.5	1.9	0.68
22	0.24	0.37	2.4	e1.6	0.99	5.2	3.1	20	18	5.0	1.9	0.67
23	0.23	3.4	2.4	e1.5	1.0	4.8	2.9	75	21	4.4	1.8	0.63
24	0.23	2.9	2.3	e1.4	1.0	4.6	2.9	25	18	4.2	1.8	0.57
25	0.23	3.5	2.2	1.4	1.0	4.5	3.3	27	15	4.1	1.8	0.55
26	0.22	3.7	2.2	1.4	1.1	5.0	2.9	24	14	3.9	1.8	0.54
27	0.22	3.7	2.3	1.4	1.2	4.4	2.7	24	14	3.7	3.4	0.52
28	0.24	3.6	2.9	e1.4	1.6	5.0	2.8	20	14	3.6	2.0	0.52
29	0.24	3.5	2.7	e1.3	7.3	4.9	2.7	22	13	3.5	1.8	0.50
30	0.24	3.4	2.6	e1.2	---	4.9	2.7	56	13	3.5	1.8	0.48
31	0.22	---	2.5	e1.2	---	4.9	---	39	---	3.2	1.8	---
TOTAL	7.66	35.36	83.8	57.5	38.05	355.6	111.6	535.6	711	215.4	71.7	29.65
MEAN	0.25	1.18	2.70	1.85	1.31	11.5	3.72	17.3	23.7	6.95	2.31	0.99
MAX	0.36	3.7	3.4	3.5	7.3	68	5.1	75	77	12	4.2	1.7
MIN	0.18	0.22	2.2	1.2	0.99	4.4	2.7	2.4	13	3.2	1.8	0.48
CFSM	0.08	0.39	0.89	0.61	0.43	3.76	1.22	5.66	7.77	2.28	0.76	0.32
IN.	0.09	0.43	1.02	0.70	0.46	4.34	1.36	6.53	8.67	2.63	0.87	0.36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2004, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
MEAN	2.52	2.72	2.40	1.65	2.93	6.78	6.75	5.59	5.74	3.46	2.28	2.76												
MAX	12.9	12.7	7.47	5.28	9.29	16.1	15.7	17.3	23.7	6.95	4.39	18.5												
(WY)	(1987)	(1986)	(1986)	(1983)	(1984)	(1986)	(1998)	(2004)	(2004)	(2004)	(1986)	(1986)												
MIN	0.25	0.28	0.14	0.04	0.03	0.63	0.21	1.96	1.29	1.28	0.68	0.33												
(WY)	(2004)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2000)	(1988)	(2003)	(2003)	(2003)												

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1982 - 2004

ANNUAL TOTAL	371.28		2,252.92			
ANNUAL MEAN	1.02		6.16			3.96
HIGHEST ANNUAL MEAN						7.94
LOWEST ANNUAL MEAN						0.75
HIGHEST DAILY MEAN	7.9	Mar 15	77	Jun 11	89	Sep 22, 1986
LOWEST DAILY MEAN	(a)0.01	(b)Jan 13-21	0.18	Oct 10	(a)0.01	(b)Jan 13-31, 2003
ANNUAL SEVEN-DAY MINIMUM	(a)0.01	(c)Jan 13	0.20	Oct 5	(a)0.01	(c)Jan 13, 2003
MAXIMUM PEAK FLOW			540	May 23	781	Sep 10, 1986
MAXIMUM PEAK STAGE			8.53	May 23	10.14	Sep 10, 1986
ANNUAL RUNOFF (CFSM)	0.334		2.02			1.30
ANNUAL RUNOFF (INCHES)	4.53		27.48			17.66
10 PERCENT EXCEEDS	2.9		18			9.3
50 PERCENT EXCEEDS	0.32		2.7			2.5
90 PERCENT EXCEEDS	0.01		0.30			0.37

- (a) Ice affected
- (b) Also occurred Feb. 5-16 and Feb. 27 to Mar. 10
- (c) Also occurred Jan. 20, Feb. 5, 27
- (e) Estimated

## 04073462 WHITE CREEK AT FOREST GLEN BEACH NEAR GREEN LAKE, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1981 to June 1988, October 1996 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1981 to June 1988, October 1996 to current year.

TOTAL AMMONIA-NITROGEN DISCHARGE: October 1981 to June 1988.

TOTAL-PHOSPHORUS DISCHARGE: October 1981 to June 1988, October 1996 to current year.

INSTRUMENTATION.--Automatic pumping sampler since December 1981.

REMARKS.--Records are fair, except those corresponding to estimated daily discharges which are fair to poor (see page 11).

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 51,300 mg/L, Apr. 3, 1982; minimum observed, 1 mg/L, Sept. 26, 1981, Nov. 28, 1984, Sept. 5, 1985, Jan. 14, 1987, Aug. 12, 1998, Sept. 2, 1998, and May 10, 2003.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 2,420 tons, Apr. 3, 1982; minimum daily, 0.00 ton, on many days during 1982, 1987, 1988, 1997, 1998, 1999, 2000, and 2003 water years.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 7.6 mg/L, May 31, 1987; minimum observed, <0.01 mg/L, many days.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,760 lb, May 23, 2004; minimum daily, 0.00 lb, on many days during 2003.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 38,000 mg/L, Mar. 7; minimum observed, 6 mg/L, May 19.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 962 tons, May 23; minimum daily, 0.00 ton, on Oct. 10.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 8.77 mg/L, May 23; minimum observed, 0.028 mg/L, June 26.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,760 lb, May 23; minimum daily, 0.05 lb, Oct. 1, 8-10.

SUSPENDED SEDIMENT DISCHARGE, 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	0.01	0.01	0.98	0.26	0.12	38	0.26	0.13	2.7	0.64	0.20	0.08
2	0.01	0.02	0.92	0.25	0.12	6.4	0.27	0.12	1.9	0.62	0.15	0.08
3	0.01	0.02	0.89	0.24	0.11	2.0	0.27	0.12	1.7	0.59	0.14	0.08
4	0.01	0.05	0.90	0.22	e0.11	e1.3	0.26	0.12	1.7	0.62	0.13	0.07
5	0.01	0.02	0.83	0.21	0.11	20	0.26	0.11	1.7	0.58	0.12	0.07
6	0.01	0.02	0.78	e0.32	e0.11	2.5	0.26	0.11	1.6	0.57	0.12	0.07
7	0.01	0.02	0.75	0.38	e0.11	1.7	0.24	0.11	1.5	0.53	0.12	0.06
8	0.01	0.02	0.72	0.35	e0.10	1.2	0.23	123	1.5	0.49	0.11	0.06
9	0.01	0.02	0.69	0.33	0.10	0.80	0.22	14	1.5	0.46	0.11	0.06
10	0.00	0.02	0.79	0.32	0.09	0.54	0.21	5.2	12	0.42	0.11	0.06
11	0.01	0.02	0.64	0.31	0.09	0.51	0.21	2.9	224	0.40	0.11	0.05
12	0.02	0.02	0.58	0.30	0.08	0.50	0.19	1.6	3.0	0.39	0.10	0.05
13	0.02	0.02	0.55	e0.28	e0.08	0.48	0.18	0.90	13	0.36	0.10	0.04
14	0.02	0.02	0.55	e0.28	0.08	0.44	0.17	0.65	2.6	0.33	0.10	0.04
15	0.02	0.02	0.52	e0.25	e0.07	0.34	0.17	0.60	1.8	0.31	0.09	0.04
16	0.02	0.02	0.53	0.25	e0.07	0.36	0.17	0.54	31	0.31	0.09	0.04
17	0.02	0.02	0.48	e0.24	0.07	0.40	0.16	0.48	4.5	0.30	0.09	0.04
18	0.02	0.04	0.45	e0.33	0.07	0.43	0.20	0.34	1.5	0.29	0.09	0.03
19	0.01	0.02	0.41	e0.48	0.07	0.58	0.18	0.45	1.3	0.27	0.09	0.03
20	0.01	0.02	0.39	e0.28	e0.07	0.83	0.17	290	1.2	0.25	0.09	0.03
21	0.01	0.02	0.38	0.22	0.06	0.72	0.18	43	1.1	0.27	0.08	0.03
22	0.01	0.02	0.37	e0.20	0.06	0.57	0.15	28	0.95	0.24	0.08	0.03
23	0.01	1.2	0.35	e0.19	0.06	0.39	0.14	962	9.1	0.21	0.08	0.03
24	0.01	1.4	0.32	e0.17	0.06	0.28	0.14	22	1.6	0.20	0.08	0.02
25	0.01	1.6	0.31	0.17	0.06	0.19	0.16	15	0.82	0.20	0.08	0.02
26	0.01	1.5	0.29	0.16	0.06	0.15	0.14	9.3	0.76	0.19	0.08	0.02
27	0.01	1.4	0.29	0.16	0.07	0.17	0.13	14	0.77	0.18	0.27	0.02
28	0.01	1.3	0.36	e0.16	0.09	0.24	0.13	1.6	0.77	0.17	0.10	0.02
29	0.01	1.2	0.33	e0.14	3.8	0.25	0.13	1.5	0.70	0.17	0.09	0.02
30	0.01	1.1	0.30	e0.13	---	0.25	0.13	363	0.67	0.16	0.09	0.02
31	0.01	---	0.28	e0.12	---	0.26	---	44	---	0.15	0.09	---
TOTAL	0.37	11.18	16.93	7.70	6.15	82.78	5.71	1,944.88	328.94	10.87	3.38	1.31
WTR YR	2004	TOTAL 2,420.20										

e Estimated

04073462 WHITE CREEK AT FOREST GLEN BEACH NEAR GREEN LAKE, 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	0.05	0.06	0.85	0.54	0.44	571	0.90	0.40	43	2.6	2.4	0.73
2	0.07	0.08	0.82	0.54	0.44	69	0.86	0.40	16	2.5	1.1	0.70
3	0.08	0.10	0.82	0.53	0.41	18	0.78	0.38	12	2.5	1.0	0.68
4	0.07	0.26	0.86	0.50	e0.44	e13	0.74	0.40	12	2.6	0.99	0.65
5	0.06	0.09	0.81	0.49	0.44	806	0.74	0.36	11	2.5	0.92	0.65
6	0.06	0.08	0.78	e0.66	e0.45	9.0	0.73	0.37	11	2.5	0.90	0.65
7	0.06	0.08	0.78	0.76	e0.45	14	0.69	0.40	10	2.4	0.88	0.61
8	0.05	0.08	0.76	0.73	e0.45	11	0.67	269	9.9	2.2	0.87	0.58
9	0.05	0.08	0.75	0.69	0.45	6.7	0.64	38	11	2.1	0.85	0.57
10	0.05	0.08	0.89	0.69	0.41	4.2	0.62	21	66	2.0	0.84	0.45
11	0.06	0.08	0.75	0.69	0.41	4.0	0.60	12	918	1.9	0.85	0.34
12	0.09	0.08	0.69	0.69	0.37	4.0	0.54	6.5	65	1.9	0.83	0.32
13	0.08	0.09	0.68	e0.66	e0.37	4.0	0.53	3.7	116	1.8	0.81	0.30
14	0.10	0.08	0.69	e0.66	0.37	3.4	0.51	2.8	49	1.7	0.78	0.28
15	0.09	0.08	0.67	e0.62	e0.37	2.3	0.51	2.8	42	1.6	0.77	0.29
16	0.09	0.09	0.71	0.62	e0.37	2.0	0.51	2.7	219	1.6	0.79	0.28
17	0.08	0.09	0.67	e0.62	0.37	1.7	0.48	2.6	152	1.6	0.79	0.24
18	0.08	0.18	0.64	e0.88	0.37	1.4	0.59	2.4	13	1.6	0.79	0.22
19	0.07	0.10	0.60	e1.3	0.37	2.0	0.53	1.9	6.3	1.5	0.79	0.20
20	0.07	0.10	0.58	e0.77	e0.38	3.3	0.51	618	5.1	1.4	0.77	0.18
21	0.07	0.10	0.59	0.62	0.37	2.2	0.54	59	4.3	1.5	0.73	0.18
22	0.07	0.10	0.58	e0.59	0.37	1.6	0.47	55	3.3	1.4	0.72	0.17
23	0.06	3.6	0.57	e0.55	0.39	1.4	0.43	1,760	49	1.3	0.70	0.16
24	0.06	0.92	0.54	e0.51	0.38	1.2	0.44	23	28	1.2	0.71	0.14
25	0.06	1.1	0.53	0.51	0.39	1.1	0.50	15	6.5	1.2	0.72	0.13
26	0.06	1.1	0.52	0.51	0.40	1.1	0.44	14	3.1	1.2	0.72	0.13
27	0.06	1.1	0.53	0.52	0.45	1.0	0.41	31	2.9	1.1	3.3	0.12
28	0.07	1.0	0.68	e0.52	0.61	1.2	0.42	10	3.0	1.1	0.82	0.12
29	0.07	0.98	0.64	e0.48	11	1.2	0.40	10	2.7	1.1	0.77	0.11
30	0.07	0.93	0.59	e0.44	---	1.1	0.40	780	2.7	1.1	0.76	0.10
31	0.06	---	0.57	e0.44	---	0.97	---	72	---	1.0	0.75	---
TOTAL	2.12	12.89	21.14	19.33	22.49	1,564.07	17.13	3,815.11	1,892.8	53.7	29.42	10.28
MEAN	0.07	0.43	0.68	0.62	0.78	50	0.57	123	63	1.7	0.95	0.34
MAX	0.10	3.6	0.89	1.3	11	806	0.90	1,760	918	2.6	3.3	0.73
MIN	0.05	0.06	0.52	0.44	0.37	0.97	0.40	0.36	2.7	1.0	0.70	0.10
CAL YR	2003	TOTAL	263.77	MEAN	0.72	MAX	83	MIN	0.00			
WTR YR	2004	TOTAL	7,460.48	MEAN	20	MAX	1760	MIN	0.05			

e Estimated

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04073462 WHITE CREEK AT FOREST GLEN BEACH NEAR GREEN LAKE, 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)	Phos- phorus, water, unfltrd mg/L (00665)	Sus- pended sedi- ment concentration mg/L (80154)
NOV						
23...	1100	--	3.5	50	.553	200
27...	1815	--	3.7	50	.052	133
JAN						
06...	0340	2.1	--	50	.041	34
06...	0525	2.1	--	50	.042	31
06...	1010	2.1	--	50	.067	68
FEB						
04...	0555	1.2	--	50	.664	346
MAR						
01...	0240	--	12	50	.896	229
01...	1205	--	61	50	1.37	741
01...	1520	--	99	50	.997	271
02...	0210	--	46	50	.649	104
04...	0210	12	--	50	.195	43
05...	1205	--	63	50	.854	215
05...	1435	--	29	50	.277	83
07...	1440	--	13	50	.223	38,000
10...	1440	--	9.9	50	.073	19
13...	1440	--	7.6	50	.101	24
15...	1440	--	6.8	50	.065	19
19...	0240	--	4.9	50	.049	35
20...	0240	--	7.6	50	.096	43
22...	0240	--	5.4	50	.058	46
25...	1440	--	4.4	50	.045	16
26...	0240	--	5.7	50	.039	10
28...	2005	--	6.0	50	.046	19
APR						
03...	2005	--	4.9	50	.028	20
MAY						
08...	0340	--	4.3	50	.135	45
08...	1915	--	6.0	50	.249	98
08...	2035	--	38	50	.935	1,040
08...	2050	--	86	50	6.46	7,560
08...	2100	--	107	50	8.14	8,840
08...	2245	--	39	50	4.49	3,130
09...	1215	--	13	50	.509	255
14...	0015	--	11	50	.045	22
18...	0015	--	9.7	50	.051	18
19...	1645	--	8.8	50	.038	6
20...	0300	--	31	50	.554	572
20...	0340	--	149	50	9.74	13,200
20...	0355	--	207	50	8.32	9,880
20...	2055	--	14	50	.446	405
22...	0755	--	26	50	.642	349
23...	0535	--	48	50	.407	311
23...	0605	--	181	50	6.17	8,760
23...	0625	--	275	50	7.78	9,780
23...	0700	--	408	50	7.08	8,320
23...	0710	--	496	50	8.36	14,700
23...	0730	--	460	50	8.77	10,600
23...	0745	--	348	50	7.41	7,100
23...	0755	--	305	50	6.39	6,160
28...	0115	--	21	50	.097	30
30...	0115	--	20	50	.085	25
30...	1200	--	171	50	4.30	4,500
30...	1430	--	51	50	1.52	928
JUN						
02...	1635	--	23	50	.098	29
10...	1635	--	24	50	.113	33
11...	0015	--	142	50	1.89	1,830
11...	0105	--	281	50	--	2,160
16...	2215	--	54	50	.292	248
19...	0225	--	21	50	.058	23
23...	1430	--	16	50	.028	18
23...	2215	--	61	50	1.08	960
26...	1240	--	14	50	.037	20
SEP						
10...	0930	--	1.2	10	.080	--
10...	0931	--	1.2	50	.058	--

04073468 GREEN LAKE INLET AT COUNTY TRUNK HIGHWAY A NEAR GREEN LAKE, WI

LOCATION.--Lat 43°49'28", long 88°55'36", in NE 1/4 SE 1/4 SE 1/4 sec.27, T.16 N., R.13 E., Green Lake County, Hydrologic Unit 04030201, on left bank at downstream side of County Trunk Highway A, 2.3 mi southeast of Green Lake.

DRAINAGE AREA.--53.5 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Side-looking velocity meter system. Datum of gage is 790.00 ft above NGVD of 1929 (from Wisconsin Department of Natural Resources benchmark).

REMARKS.--Records fair, except those for estimated periods which are poor (see page 11). Flows fluctuate due to seiche from Green Lake. 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	6.7	9.2	33	19	4.8	143	86	43	e507	124	e41	22
2	4.5	12	26	21	6.6	279	79	34	e510	106	e36	25
3	16	30	27	27	7.3	228	69	29	e500	100	e35	19
4	9.8	54	26	20	7.5	215	62	34	e450	105	e35	17
5	6.2	42	24	9.5	5.8	435	53	24	e370	104	e32	19
6	6.5	23	24	6.5	6.5	397	57	34	e300	110	e32	14
7	8.5	37	20	8.8	4.7	325	49	e40	e220	109	e31	18
8	5.6	19	23	9.0	4.8	278	53	e63	e190	112	e31	21
9	9.2	16	28	8.6	2.5	221	48	e81	e190	106	e33	15
10	10	15	53	7.6	5.3	173	48	e80	192	102	e31	16
11	0.97	18	39	12	3.0	136	44	e75	613	96	e31	20
12	15	-1.1	24	13	3.6	105	41	e70	662	91	e30	14
13	8.5	15	27	16	6.7	87	39	e99	682	85	e29	19
14	11	19	22	15	9.1	93	40	e85	601	83	e28	17
15	8.1	18	20	15	5.3	84	36	e75	498	72	e28	9.8
16	5.6	15	16	14	5.0	76	41	e64	417	66	e31	21
17	6.4	9.5	18	12	3.8	72	39	e62	444	64	e37	15
18	11	30	17	7.5	1.8	67	35	e58	408	61	e34	12
19	5.5	31	18	11	5.3	66	80	e60	412	59	e33	15
20	6.8	25	15	12	9.6	77	61	e139	349	56	e30	13
21	7.6	31	10	9.9	13	74	72	e146	e306	61	e28	14
22	8.8	23	14	5.9	12	64	67	e214	256	60	e27	15
23	7.6	116	16	4.6	15	68	57	e276	208	52	e25	8.3
24	7.2	103	12	4.3	19	67	56	e301	231	53	21	13
25	4.3	106	15	6.1	18	72	51	e378	190	46	13	14
26	e5.4	85	15	5.9	18	104	48	e388	176	49	21	12
27	5.9	68	14	7.4	19	96	45	e390	160	44	45	15
28	4.5	49	41	8.0	25	92	27	e320	157	42	35	8.8
29	9.9	43	35	6.1	60	122	65	e300	147	e41	27	15
30	8.3	31	31	7.0	---	106	35	e310	134	e39	24	13
31	3.7	---	27	6.9	---	96	---	e466	---	e37	19	---
TOTAL	235.07	1,091.6	730	336.6	308.0	4,518	1,583	4,738	10,480	2,335	933	469.9
MEAN	7.58	36.4	23.5	10.9	10.6	146	52.8	153	349	75.3	30.1	15.7
MAX	16	116	53	27	60	435	86	466	682	124	45	25
MIN	0.97	-1.1	10	4.3	1.8	64	27	24	134	37	13	8.3
CFSM	0.14	0.68	0.44	0.20	0.20	2.72	0.99	2.86	6.53	1.41	0.56	0.29
IN.	0.16	0.76	0.51	0.23	0.21	3.14	1.10	3.29	7.29	1.62	0.65	0.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2004, BY WATER YEAR (WY)

MEAN	20.6	26.4	20.8	15.3	24.3	67.6	64.6	51.1	64.0	36.5	24.6	20.9
MAX	64.1	71.3	47.5	46.1	60.7	146	185	153	349	190	67.5	57.4
(WY)	(1996)	(1996)	(1993)	(1996)	(1996)	(2004)	(1993)	(2004)	(2004)	(1993)	(1990)	(2000)
MIN	7.00	12.2	5.73	3.13	4.28	19.1	23.2	16.1	4.57	3.78	5.03	9.01
(WY)	(1989)	(2000)	(1990)	(2003)	(2003)	(2003)	(2003)	(1988)	(1988)	(1988)	(1988)	(1988)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1987 - 2004

ANNUAL TOTAL	7,329.08	27,758.17	
ANNUAL MEAN	20.1	75.8	36.7
HIGHEST ANNUAL MEAN			79.9
LOWEST ANNUAL MEAN			17.9
HIGHEST DAILY MEAN	193	May 11	705
LOWEST DAILY MEAN	-7.1	Jan 10	-7.1
ANNUAL SEVEN-DAY MINIMUM	1.2	Jan 21	1.2
ANNUAL RUNOFF (CFSM)	0.375		0.686
ANNUAL RUNOFF (INCHES)	5.10		9.32
10 PERCENT EXCEEDS	43		78
50 PERCENT EXCEEDS	14		22
90 PERCENT EXCEEDS	3.1		7.5

(e) Estimated due to ice effect or missing record

04073468 GREEN LAKE INLET AT COUNTY TRUNK HIGHWAY A NEAR GREEN LAKE, WI—Continued

## WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: February 1987 to current year.

TOTAL-PHOSPHORUS DISCHARGE: February 1987 to current year.

INSTRUMENTATION.--Automatic pumping sampler from March 1997; manual samples February 1987 to February 1997.

REMARKS.--Records are fair, except those corresponding to estimated daily discharges which are fair to poor (see page 11). Phosphorus analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated.

COOPERATION.--Observer furnished by the Green Lake Sanitary District.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 1,030 mg/L, May 11, 2003; minimum observed, 0 mg/L, Mar. 25, 1988.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 456 tons, May 31, 1989; minimum daily, -3.1 ton, Apr. 5, 2000.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 1.45 mg/L, May 30, 1989; minimum observed, &lt;0.02 mg/L, Oct. 10, 1991.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 3,230 lb, May 31, 1989; minimum daily, -13 lb, Apr. 5, 2000.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 93 mg/L, Nov. 12; minimum observed, 5 mg/L, Mar. 24.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 58 tons, May 27; minimum daily, -0.54 tons, Jan. 10.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.389 mg/L, Mar. 5; minimum observed, 0.049 mg/L, Mar. 24.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 844 lb, June 13; minimum daily, -0.82 lb, Nov. 12.

SUSPENDED SEDIMENT DISCHARGE, 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	0.64	1.8	7.4	2.3	0.29	32	4.6	3.1	e33	16	e5.7	2.1
2	0.44	2.4	5.8	2.3	0.40	25	3.2	2.6	e32	15	e5.2	2.4
3	1.6	6.0	6.0	2.6	0.44	13	2.0	2.6	e32	14	e5.2	1.8
4	1.0	11	5.7	1.7	0.45	8.9	1.4	3.5	e30	16	e5.3	1.6
5	0.64	8.9	5.2	0.70	0.35	23	4.2	2.6	e25	16	e5.0	1.8
6	0.69	5.0	5.2	0.44	0.39	48	8.4	4.2	e21	18	e5.2	1.3
7	0.92	8.2	4.3	0.59	0.28	21	7.8	e5.7	e16	17	e5.1	1.7
8	0.62	4.3	4.9	0.60	0.28	11	8.6	e8.9	e14	16	e5.3	2.0
9	1.0	3.7	5.9	0.57	0.15	9.2	8.0	e11	e14	13	e5.8	1.4
10	1.1	3.6	11	0.50	0.31	9.6	8.2	e11	14	12	e5.5	1.5
11	0.12	4.4	8.0	0.79	0.18	4.4	7.7	e10	47	9.7	e5.2	1.9
12	1.8	-0.27	4.9	0.86	0.21	3.1	7.4	e9.7	52	8.3	e4.6	1.3
13	1.0	3.6	5.4	1.0	0.39	2.6	7.2	e14	55	7.0	e4.2	1.8
14	1.4	4.5	4.4	0.98	0.53	2.8	7.6	e12	50	6.9	e3.7	1.6
15	1.0	4.1	4.0	0.98	0.31	2.5	6.9	e10	42	6.2	e3.4	0.94
16	0.73	3.3	3.1	0.91	0.29	2.3	6.7	e8.7	36	5.8	e3.5	2.0
17	0.85	2.0	3.5	0.77	0.22	2.1	5.2	e8.3	39	5.8	e3.9	1.4
18	1.5	6.1	3.6	0.48	0.10	2.0	5.2	e7.7	37	5.7	e3.3	1.1
19	0.77	5.8	4.1	0.70	0.31	2.0	17	e7.9	38	5.7	e3.2	1.4
20	0.97	3.2	3.6	0.77	0.60	2.3	8.7	e17	33	5.5	e2.9	1.2
21	1.1	3.4	2.6	0.63	0.89	2.2	8.1	e17	e29	6.2	e2.7	1.3
22	1.3	2.3	3.9	0.37	0.90	1.9	4.9	e22	25	6.3	e2.6	1.4
23	1.2	10	4.8	0.29	1.2	2.0	5.7	e26	21	5.6	e2.4	0.79
24	1.1	14	3.8	0.27	1.6	1.4	7.0	e26	24	5.9	2.0	1.2
25	0.70	23	4.3	0.38	1.6	1.6	6.4	e30	20	5.3	1.3	1.3
26	e0.89	20	3.8	0.37	1.7	3.4	6.0	e43	19	5.8	2.0	1.1
27	1.0	16	3.2	0.46	2.0	4.8	5.7	e58	18	5.3	4.3	1.4
28	0.78	11	8.2	0.49	3.7	6.8	3.6	e40	18	5.2	3.4	0.83
29	1.8	9.9	6.2	0.38	12	9.3	7.5	e32	18	e5.3	2.6	1.4
30	1.5	7.0	4.8	0.43	---	7.6	2.4	e28	17	e5.1	2.3	1.2
31	0.69	---	3.7	0.42	---	6.4	---	e35	---	e5.0	1.8	---
TOTAL	30.85	208.23	155.3	25.03	32.07	274.2	193.3	517.5	869	280.6	118.6	44.16
WTR YR	2004	TOTAL	2,748.84									

e Estimated



04073468 GREEN LAKE INLET AT COUNTY TRUNK HIGHWAY A NEAR GREEN LAKE, 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	5.0	6.9	21	6.1	1.5	98	37	27	e372	67	e25	13
2	3.4	9.0	16	6.7	2.1	277	32	21	e379	56	e22	14
3	12	22	16	8.6	2.4	294	26	18	e381	52	e22	11
4	7.3	41	15	6.4	2.4	288	22	22	e351	54	e22	9.7
5	4.6	32	14	3.0	1.9	672	28	16	e296	58	e20	11
6	4.8	18	13	2.1	2.1	785	47	23	e246	66	e20	7.9
7	6.2	28	11	2.8	1.5	487	43	e26	e185	68	e19	10
8	4.1	14	12	2.9	1.6	362	45	e42	e163	69	e20	12
9	6.7	12	14	2.8	0.81	230	40	e55	e167	64	e21	8.2
10	7.3	12	27	2.4	1.7	122	38	e55	174	61	e20	8.8
11	0.71	14	19	3.8	0.97	118	34	e52	663	56	e20	11
12	11	-0.82	11	4.2	1.2	76	31	e50	840	52	e19	7.9
13	6.1	11	12	5.1	2.2	54	28	e71	841	48	e19	11
14	7.9	14	9.9	4.8	2.9	56	28	e62	716	47	e18	9.6
15	5.8	13	8.8	4.8	1.7	49	24	e55	573	41	e18	5.5
16	4.0	10	6.8	4.5	1.6	43	28	e48	464	38	e20	12
17	4.6	6.5	7.5	3.8	1.2	39	28	e47	477	37	e24	8.5
18	7.9	20	6.9	2.4	0.58	35	23	e44	423	35	e22	6.8
19	4.0	19	7.0	3.5	1.7	34	56	e46	413	34	e21	8.5
20	4.9	11	5.7	3.8	3.1	38	48	e108	338	33	e19	7.3
21	5.5	13	3.7	3.2	4.2	35	40	e115	e286	36	e18	7.9
22	6.4	11	5.0	1.9	3.9	30	49	e171	231	35	e17	8.5
23	5.5	59	5.5	1.5	4.8	31	43	e224	182	31	e16	4.7
24	5.3	59	4.0	1.4	6.2	23	42	e247	195	31	13	7.3
25	3.2	68	5.0	2.0	5.8	24	35	e314	155	27	8.1	7.9
26	e4.0	56	5.0	1.9	5.8	43	31	e325	138	29	13	6.8
27	4.3	45	4.6	2.4	6.2	48	27	e322	117	26	27	8.4
28	3.3	32	13	2.6	8.3	56	16	e258	104	25	21	5.0
29	7.3	28	11	2.0	28	71	46	e236	89	e25	16	8.4
30	6.2	20	9.9	2.2	---	56	22	e238	75	e24	14	4.8
31	2.8	---	8.6	2.2	---	45	---	e349	---	e22	11	---
TOTAL	172.11	703.58	328.9	107.8	108.36	4,619	1,037	3,687	10,034	1,347	585.1	263.4
WTR YR	2004	TOTAL	22,993.25									

e Estimated

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04073468 GREEN LAKE INLET AT COUNTY TRUNK HIGHWAY A NEAR GREEN LAKE, 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)	Phos- phorus, water, unfltrd mg/L (00665)	Sus- pended sedi- ment con- centration mg/L (80154)
OCT						
15...	1345	--	23	50	.132	47
NOV						
12...	1515	--	99	50	.143	93
19...	1215	--	84	50	.121	73
20...	1515	--	141	50	.075	44
23...	1915	--	173	50	.096	32
25...	1230	--	207	50	.122	88
30...	2345	--	123	50	.120	--
DEC						
17...	1200	--	26	50	.077	72
24...	1245	--	28	50	.062	--
31...	1200	--	55	50	.059	--
MAR						
01...	1130	--	105	50	.134	--
01...	2330	--	276	50	.132	44
02...	2330	--	262	50	.243	24
03...	2330	--	223	50	.234	18
04...	2330	--	229	50	.262	13
05...	1130	--	504	50	.247	12
05...	2330	--	508	50	.389	47
06...	2330	--	334	50	.346	43
07...	1130	--	319	50	.262	20
08...	1130	--	292	50	.241	15
09...	1130	--	220	50	.224	11
09...	2330	--	206	50	.113	28
11...	1130	--	111	50	.171	11
24...	0845	--	64	50	.081	11
24...	0846	--	63	10	.051	5
24...	0847	--	61	10	.049	5
28...	1600	--	220	50	.118	30
31...	2115	--	131	50	.084	24
APR						
05...	1115	--	47	30	.060	6
05...	1120	--	54	50	.128	48
06...	2300	--	94	50	.166	58
15...	1515	--	119	50	.125	72
17...	1645	--	78	50	.133	47
18...	1415	--	106	50	.121	46
19...	0215	--	293	50	.106	--
19...	1415	--	108	50	.141	63
20...	1500	--	103	50	.157	51
21...	0615	--	157	50	.089	49
22...	0915	--	141	50	.139	24
24...	0115	--	147	50	.142	46
28...	1645	--	48	50	.102	47
29...	0500	--	152	50	.157	71
29...	1730	--	136	50	.114	24
MAY						
03...	1205	--	7.6	30	.115	30
03...	1206	--	7.3	50	.151	36
06...	0800	--	128	50	.127	41
06...	2145	--	139	50	.122	53
26...	1446	388	--	30	.156	27
26...	1447	388	--	50	.217	64
JUN						
01...	1604	507	--	50	.135	23
26...	2000	--	179	50	.144	40
30...	0800	--	136	50	.103	47
JUL						
04...	1215	--	67	50	.094	55
07...	0015	--	175	50	.117	62
13...	1215	--	14	50	.105	30
AUG						
10...	1200	31	--	50	.201	67
18...	1200	34	--	50	.121	36
SEP						
10...	1000	--	41	10	.105	--
10...	1001	--	37	50	.101	--

04073473 PUCHYAN RIVER DOWNSTREAM NORTH LAWSON DRIVE NEAR GREEN LAKE, WI

LOCATION.--Lat 43°51'27", long 88°56'47", in NE ¼ SE ¼ sec.16, T.16 N., R.13 E., Green Lake County, Hydrologic Unit 04030201, on right bank 220 ft downstream from bridge on North Lawson Drive, 1.0 mi northeast of dam at outlet of Green Lake at Green Lake.

DRAINAGE AREA.--105 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1996 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 777.47 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow regulated by dams 1.1 mi and 180 ft 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	14	19	23	34	30	64	133	71	880	376	80	54
2	14	20	e23	35	32	74	128	68	882	356	79	54
3	15	20	24	36	e35	78	119	66	848	344	77	54
4	13	25	24	34	e36	93	109	65	814	277	77	53
5	13	19	23	e33	e36	145	110	58	767	185	74	52
6	13	17	24	e32	e39	170	109	59	719	263	74	51
7	14	16	23	e31	41	247	104	57	698	312	72	46
8	14	17	25	e30	43	366	101	84	673	297	72	45
9	16	16	23	e30	43	366	99	102	625	286	72	45
10	18	17	27	30	43	356	96	131	636	281	65	46
11	19	17	e28	30	41	340	93	221	976	273	61	45
12	17	18	e28	30	42	320	89	219	879	267	57	44
13	16	15	e29	30	42	301	87	227	897	226	54	44
14	17	17	29	30	e41	284	91	233	874	189	54	44
15	22	19	29	30	e41	263	91	231	842	184	52	46
16	22	20	30	30	e41	251	76	225	814	172	52	43
17	22	20	29	31	e42	241	69	222	840	151	53	42
18	18	28	29	e31	42	234	76	231	822	148	54	41
19	17	26	e29	e30	43	218	75	239	777	140	53	41
20	17	25	e29	e29	48	193	71	296	758	139	51	40
21	19	25	29	30	51	170	77	292	715	140	50	38
22	21	25	28	e29	51	184	75	427	661	137	50	37
23	20	34	28	30	53	169	75	616	631	131	48	37
24	19	21	e28	e29	52	159	72	571	623	126	48	36
25	20	21	e28	e29	54	131	77	677	600	121	47	33
26	17	21	28	e29	53	133	76	783	568	116	47	29
27	17	21	30	e29	52	137	74	769	534	99	57	29
28	17	23	35	e29	55	154	81	727	508	84	53	28
29	15	24	34	e29	61	153	81	718	448	81	55	27
30	15	24	34	e29	---	137	72	769	396	78	57	26
31	17	---	35	e30	---	136	---	893	---	74	54	---
TOTAL	528	630	865	948	1,283	6,267	2,686	10,347	21,705	6,053	1,849	1,250
MEAN	17.0	21.0	27.9	30.6	44.2	202	89.5	334	724	195	59.6	41.7
MAX	22	34	35	36	61	366	133	893	976	376	80	54
MIN	13	15	23	29	30	64	69	57	396	74	47	26
CFSM	0.16	0.20	0.27	0.29	0.42	1.93	0.85	3.18	6.89	1.86	0.57	0.40
IN.	0.19	0.22	0.31	0.34	0.45	2.22	0.95	3.67	7.69	2.14	0.66	0.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2004, BY WATER YEAR (WY)

	1997	1998	1999	2000	2001	2002	2003	2004
MEAN	22.4	16.7	20.3	23.9	37.6	86.8	131	150
MAX	44.2	30.5	51.0	36.6	56.0	202	256	334
(WY)	(2001)	(2001)	(2002)	(1997)	(1997)	(2004)	(2001)	(2004)
MIN	6.99	6.60	10.4	11.6	15.0	21.0	28.1	89.5
(WY)	(1999)	(1999)	(1999)	(2000)	(2000)	(2003)	(2003)	(2000)

SUMMARY STATISTICS

	FOR 2003 CALENDAR YEAR	FOR 2004 WATER YEAR	WATER YEARS 1997 - 2004
ANNUAL TOTAL	12,486.0	54,411	
ANNUAL MEAN	34.2	149	71.1
HIGHEST ANNUAL MEAN			149
LOWEST ANNUAL MEAN			32.5
HIGHEST DAILY MEAN	283	May 13	976
LOWEST DAILY MEAN	6.1	Aug 26	13
ANNUAL SEVEN-DAY MINIMUM	7.2	Aug 24	14
MAXIMUM PEAK FLOW			1,190
MAXIMUM PEAK STAGE			6.61
ANNUAL RUNOFF (CFSM)	0.326		1.42
ANNUAL RUNOFF (INCHES)	4.42		19.28
10 PERCENT EXCEEDS	58		516
50 PERCENT EXCEEDS	22		53
90 PERCENT EXCEEDS	14		19

(e) Estimated due to ice effect or missing record

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04073500 FOX RIVER AT BERLIN, WI

LOCATION.--Lat 43°57'14", long 88°57'09", in NW ¼ NE ¼ sec.16, T.17 N., R.13 E., Green Lake County, Hydrologic Unit 04030201, on left bank, 0.4 mi downstream from government dam, 1.0 mi south of Huron Street bridge in Berlin, 2.5 mi upstream from Barnes Creek, and at mile 89.0.

DRAINAGE AREA.--1,340 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1898 to current year.

REVISED RECORDS.--WSP 1337: 1910. WDR WI-80-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 744.52 ft above mean tide at New York City (by U.S. Army Corps of Engineers). Prior to Oct. 27, 1954, nonrecording gage at site 0.3 mi upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Usually less than about 10 ft<sup>3</sup>/s was diverted into the basin from the Wisconsin River at Portage Canal throughout the year. Data-collection platform and 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	484	806	1,250	e920	e590	e1,300	2,230	1,290	4,250	4,260	1,490	932
2	455	784	1,190	e900	e610	e1,500	2,200	1,240	4,360	4,070	1,470	938
3	486	787	1,140	e900	e610	e1,800	2,180	1,190	4,380	3,890	1,430	933
4	498	857	1,200	e880	e620	e2,100	2,120	1,150	4,360	3,780	1,380	914
5	482	924	1,200	e840	e640	2,630	2,060	1,110	4,310	3,640	1,310	894
6	491	950	1,160	e840	e650	2,970	2,010	1,080	4,270	3,560	1,250	898
7	496	960	1,130	e800	e670	2,950	1,950	1,040	4,200	3,450	1,200	885
8	496	927	1,120	e780	e680	2,880	1,890	1,100	4,120	3,320	1,150	840
9	504	897	1,100	e740	e700	2,820	1,830	1,290	4,040	3,210	1,120	812
10	505	899	1,120	e740	e700	2,770	1,770	1,420	4,040	3,120	1,080	808
11	510	901	1,100	e740	e700	2,790	1,710	1,510	4,750	3,030	1,040	809
12	536	910	e890	e730	e700	2,730	1,650	1,590	5,200	2,950	988	794
13	527	909	e840	e720	e700	2,680	1,600	1,750	5,440	2,860	951	775
14	530	883	e930	e720	e700	2,680	1,540	1,800	5,580	2,760	924	764
15	508	885	e950	e720	e710	2,630	1,480	1,860	5,630	2,660	909	763
16	527	898	e1,000	e710	e720	2,580	1,440	1,910	5,630	2,570	894	804
17	532	887	e1,000	e690	e740	2,530	1,390	1,950	5,650	2,480	903	767
18	543	947	e1,000	e600	e750	2,480	1,380	1,980	5,670	2,400	898	744
19	536	995	e1,000	e600	e770	2,430	1,400	1,980	5,620	2,310	908	726
20	527	1,000	e1,000	e590	e780	2,410	1,410	2,040	5,630	2,230	911	726
21	521	1,000	e1,000	e580	e790	2,360	1,430	2,150	5,590	2,150	895	708
22	492	967	e980	e580	e820	2,310	1,450	2,390	5,510	2,080	883	686
23	497	1,080	e960	e590	e830	2,260	1,460	2,680	5,410	2,020	888	672
24	495	1,250	e940	e610	e840	2,200	1,450	2,980	5,330	1,950	855	678
25	505	1,320	e910	e600	e870	2,170	1,430	3,200	5,200	1,890	792	674
26	501	1,320	e900	e600	e920	2,170	1,420	3,350	5,080	1,830	727	653
27	495	1,330	e950	e590	e1,000	2,160	1,390	3,430	4,950	1,770	874	640
28	507	1,330	e1,000	e590	e1,100	2,170	1,360	3,490	4,830	1,710	932	621
29	564	1,280	e1,100	e580	e1,200	2,220	1,360	3,550	4,660	1,650	914	597
30	787	1,260	e1,000	e580	---	2,230	1,340	3,680	4,460	1,590	911	622
31	835	---	e960	e590	---	2,240	---	3,990	---	1,530	916	---
TOTAL	16,372	30,143	32,020	21,650	22,110	74,150	49,330	65,170	148,150	82,720	31,793	23,077
MEAN	528	1,005	1,033	698	762	2,392	1,644	2,102	4,938	2,668	1,026	769
MAX	835	1,330	1,250	920	1,200	2,970	2,230	3,990	5,670	4,260	1,490	938
MIN	455	784	840	580	590	1,300	1,340	1,040	4,040	1,530	727	597
CFSM	0.39	0.75	0.77	0.52	0.57	1.79	1.23	1.57	3.69	1.99	0.77	0.57
IN.	0.45	0.84	0.89	0.60	0.61	2.06	1.37	1.81	4.11	2.30	0.88	0.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2004, BY WATER YEAR (WY)

MEAN	977	1,070	897	697	767	1,750	2,203	1,483	1,242	945	801	889
MAX	3,819	2,463	1,871	1,631	1,803	4,272	4,225	3,801	4,938	4,072	2,540	3,491
(WY)	(1987)	(1986)	(1986)	(1939)	(1966)	(1973)	(1979)	(1973)	(2004)	(1993)	(1993)	(1938)
MIN	347	380	369	311	318	495	667	600	367	384	346	364
(WY)	(1959)	(1977)	(1977)	(1959)	(1959)	(1964)	(1902)	(1934)	(1988)	(1988)	(1958)	(1958)

SUMMARY STATISTICS

	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1898 - 2004	
ANNUAL TOTAL	298,952		596,685			
ANNUAL MEAN	819		1,630		1,146	
HIGHEST ANNUAL MEAN					2,203	
LOWEST ANNUAL MEAN					559	
HIGHEST DAILY MEAN	2,050	May 17, 18	5,670	Jun 18	6,900	Mar 17, 1946
LOWEST DAILY MEAN	322	Sep 5	455	Oct 2	217	Jun 27, 1988
ANNUAL SEVEN-DAY MINIMUM	340	Sep 4	485	Oct 1	(a)266	Jan 30, 1900
MAXIMUM PEAK FLOW			5,680	Jun 18	(b)6,900	Mar 17, 1946
MAXIMUM PEAK STAGE			16.23	Jun 18	16.23	Jun 18, 2004
INSTANTANEOUS LOW FLOW			447	Oct 2	210	Jun 27, 1988
ANNUAL RUNOFF (CFSM)	0.611		1.22		0.855	
ANNUAL RUNOFF (INCHES)	8.30		16.56		11.62	
10 PERCENT EXCEEDS	1,300		3,650		2,170	
50 PERCENT EXCEEDS	759		1,080		880	
90 PERCENT EXCEEDS	420		590		504	

(a) Ice affected

(b) Gage height 15.50 ft

(c) Estimated due to ice effect or missing record

STREAMS TRIBUTARY TO LAKE MICHIGAN

04074538 SWAMP CREEK ABOVE RICE LAKE AT MOLE LAKE, WI

LOCATION.--Lat 45°29'18", long 88°57'49", in SW 1/4 NW 1/4 sec.26, T.35 N., R.12 E., Forest County, Hydrologic Unit 04030202, on right bank approximately 200 ft upstream from bridge on State Highway 55, on Mole Lake Indian Reservation.

DRAINAGE AREA.--46.3 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1977 to September 1983. October 1984 to December 1986. July 2001 to current year.

REVISED RECORDS.--WDR WI-82-1: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and prior to Nov. 18, 2003, a concrete control. Datum of gage is 1,532.28 ft above NGVD of 1929 (levels by Wisconsin Department of Transportation).

REMARKS.--Records good except those for periods of ice effect and missing record, 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	20	20	e17	e12	e9.4	e18	113	e42	66	29	27	20
2	19	20	e15	e12	e9.4	e18	108	e42	65	28	35	19
3	19	20	e14	e12	e10	e18	107	e41	50	27	49	18
4	20	23	e14	e11	e10	e18	97	e40	42	31	35	17
5	21	e23	e13	e11	e10	e19	86	43	38	31	27	16
6	19	e21	e13	e11	e10	e19	86	42	37	32	23	18
7	18	19	e13	e11	e10	e19	97	40	34	37	21	19
8	18	17	e13	e12	e10	e19	102	43	32	33	22	17
9	17	17	e13	e12	e10	e19	99	45	34	30	24	16
10	17	18	e13	e12	e9.6	e19	87	47	35	29	25	16
11	18	19	e13	e11	e10	e19	75	44	32	28	24	16
12	24	20	e12	e11	e10	e19	67	42	36	28	23	15
13	23	20	e13	e11	e9.2	e19	62	51	56	27	20	15
14	22	19	e13	e11	e9.2	e20	60	57	125	27	19	15
15	20	19	e13	e11	e9.2	e20	60	58	114	25	18	23
16	19	19	e13	e11	e10	e20	64	49	78	26	18	22
17	19	18	e12	e10	e11	e20	72	45	93	25	19	18
18	19	25	e12	e10	e10	e20	75	42	87	24	22	17
19	19	33	e13	e9.6	e11	e20	86	39	61	23	27	17
20	19	27	e13	e9.8	e11	e20	85	38	48	23	23	17
21	18	24	e13	e9.4	e13	e20	75	36	43	24	20	16
22	18	21	e13	e9.4	e14	e21	71	41	43	24	19	16
23	20	21	e12	e9.4	e16	e23	62	58	39	22	18	16
24	20	e21	e13	e9.4	e16	e20	58	97	37	21	18	17
25	19	e21	e14	e9.4	e16	e24	59	87	34	20	19	17
26	18	21	e14	e9.4	e17	54	60	60	32	20	18	17
27	18	19	e15	e9.4	e17	66	57	48	31	19	26	18
28	20	18	e15	e9.2	e17	81	55	43	30	19	25	18
29	24	17	e16	e9.4	e17	111	e44	39	29	18	22	17
30	22	17	e15	e9.4	---	119	e43	39	30	18	20	17
31	21	---	e13	e9.4	---	120	---	55	---	28	19	---
TOTAL	608	617	418	324.6	342.0	1,042	2,272	1,493	1,511	796	725	520
MEAN	19.6	20.6	13.5	10.5	11.8	33.6	75.7	48.2	50.4	25.7	23.4	17.3
MAX	24	33	17	12	17	120	113	97	125	37	49	23
MIN	17	17	12	9.2	9.2	18	43	36	29	18	18	15
CFSM	0.42	0.44	0.29	0.23	0.25	0.73	1.64	1.04	1.09	0.55	0.51	0.37
IN.	0.49	0.50	0.34	0.26	0.27	0.84	1.83	1.20	1.21	0.64	0.58	0.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2004, BY WATER YEAR (WY)

	32.2	28.3	23.9	20.6	19.8	30.8	61.7	46.7	41.2	30.8	23.4	26.7
MEAN												
MAX	52.9	52.9	39.2	31.3	28.1	48.4	79.8	64.0	57.8	48.6	40.1	40.3
(WY)	(1987)	(1986)	(1986)	(1986)	(1986)	(1983)	(1979)	(1983)	(1981)	(1978)	(1978)	(1977)
MIN	18.5	14.5	13.5	10.5	11.8	18.3	47.3	31.0	22.6	18.2	14.3	13.2
(WY)	(2002)	(1982)	(2004)	(2004)	(2004)	(1978)	(1980)	(1980)	(1982)	(2001)	(1981)	(1981)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1977 - 2004

ANNUAL TOTAL	9,090	10,668.6	
ANNUAL MEAN	24.9	29.1	32.1
HIGHEST ANNUAL MEAN			38.5
LOWEST ANNUAL MEAN			24.8
HIGHEST DAILY MEAN	141	Apr 17	212
LOWEST DAILY MEAN	(a)11	Jan 21-27	8.3
ANNUAL SEVEN-DAY MINIMUM	(a)11	Jan 21	9.2
MAXIMUM PEAK FLOW			228
MAXIMUM PEAK STAGE			(c)3.82
INSTANTANEOUS LOW FLOW			6.8
ANNUAL RUNOFF (CFSM)	0.538	0.630	0.694
ANNUAL RUNOFF (INCHES)	7.30	8.57	9.42
10 PERCENT EXCEEDS	45	60	56
50 PERCENT EXCEEDS	19	20	26
90 PERCENT EXCEEDS	13	11	16

(a) Ice affected

(b) Also occurred additional days

(c) Site and datum then in use

(e) Estimated due to ice effect or missing record

STREAMS TRIBUTARY TO LAKE MICHIGAN

04074548 SWAMP CREEK BELOW RICE LAKE AT MOLE LAKE, WI

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LOCATION.--Lat 45°28'46", long 88°59'52", in NE 1/4 NW 1/4 sec.33, T.35 N., R.12 E., Forest County, Hydrologic Unit 04030202, on left bank approximately 100 ft downstream from bridge on County Trunk Highway M, 0.9 mi west of Mole Lake.

DRAINAGE AREA.--56.8 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1977 to September 1979. April 1982 to June 1985. July 2001 to current year.

REVISED RECORDS.--WDR WI-83-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,529.66 ft above National Geodetic Vertical Datum of 1929 (levels by Wisconsin Department of Transportation). Prior to July 1985, water-stage recorder at same site and approximately 1.0 ft higher datum.

REMARKS.--Records fair except for periods of estimated record, 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	47	27	e25	e18	e17	e25	166	51	66	36	40	37
2	43	28	e26	e18	e17	e25	160	46	70	35	44	35
3	42	27	e20	e18	e16	e25	160	39	59	34	59	33
4	42	29	18	e17	e16	e26	154	37	47	38	62	31
5	41	30	17	e16	e16	e26	137	34	40	41	54	30
6	40	36	16	e16	e16	e26	127	34	38	42	47	29
7	41	30	17	e16	e16	e28	131	32	34	46	42	31
8	41	27	17	e16	e16	e28	145	33	34	45	41	32
9	40	24	18	e16	e16	e28	149	36	37	42	42	30
10	38	23	e20	e16	e16	e30	140	39	37	40	43	28
11	36	24	e25	e16	e16	e30	124	37	35	38	44	27
12	35	25	e18	e16	e16	e30	100	34	35	37	44	26
13	36	25	e17	e16	e16	e31	80	42	56	36	41	25
14	35	24	e17	e16	e16	e32	68	52	106	36	38	24
15	33	25	e16	e16	e16	e32	64	55	128	34	36	33
16	31	25	e16	e16	e16	e32	68	48	117	35	35	36
17	30	26	e16	e16	e17	e32	83	42	107	35	36	32
18	30	34	e16	e16	e17	e32	92	40	105	32	38	31
19	28	42	e16	e16	e17	e32	108	33	89	32	44	32
20	29	39	e16	e16	e17	e33	121	32	66	33	45	31
21	29	34	e16	e16	e18	e33	117	32	55	32	41	31
22	28	31	e16	e16	e19	e33	107	34	49	33	37	30
23	28	29	e17	e16	e19	e35	89	54	47	33	36	28
24	28	e28	e17	e16	e20	e37	73	86	43	31	34	26
25	28	e26	e17	e16	e21	e39	69	99	40	31	34	26
26	27	e24	e18	e16	e22	e45	61	81	39	32	34	25
27	26	24	e18	e16	e22	e56	51	60	37	31	37	25
28	27	23	e20	e16	e22	e76	48	49	36	30	41	24
29	28	21	e22	e17	e23	e100	49	41	36	30	40	23
30	28	e23	e22	e17	---	e130	52	40	34	31	37	23
31	27	---	e18	e17	---	e150	---	52	---	36	36	---
TOTAL	1,042	833	568	506	512	1,317	3,093	1,424	1,722	1,097	1,282	874
MEAN	33.6	27.8	18.3	16.3	17.7	42.5	103	45.9	57.4	35.4	41.4	29.1
MAX	47	42	26	18	23	150	166	99	128	46	62	37
MIN	26	21	16	16	16	25	48	32	34	30	34	23
CFSM	0.59	0.49	0.32	0.29	0.31	0.75	1.82	0.81	1.01	0.62	0.73	0.51
IN.	0.68	0.55	0.37	0.33	0.34	0.86	2.03	0.93	1.13	0.72	0.84	0.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2004, BY WATER YEAR (WY)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
MEAN	49.0	41.1	36.7	31.9	32.4	45.8	87.7	66.1	52.8	41.3	38.1	41.1																	
MAX	70.7	53.4	45.5	38.2	50.7	66.5	120	88.2	84.7	68.8	60.5	59.2																	
(WY)	(2003)	(1983)	(1985)	(1983)	(1984)	(1979)	(1979)	(1979)	(1979)	(1978)	(1978)	(1977)																	
MIN	27.1	27.8	18.3	16.3	17.7	29.5	59.8	45.9	32.1	26.5	21.1	29.1																	
(WY)	(2002)	(2004)	(2004)	(2004)	(2004)	(1978)	(1984)	(2004)	(1982)	(2001)	(1982)	(2004)																	

SUMMARY STATISTICS

	FOR 2003 CALENDAR YEAR	FOR 2004 WATER YEAR	WATER YEARS 1977 - 2004
ANNUAL TOTAL	16,241	14,270	
ANNUAL MEAN	44.5	39.0	48.0
HIGHEST ANNUAL MEAN			57.1
LOWEST ANNUAL MEAN			39.0
HIGHEST DAILY MEAN	202	166	209
LOWEST DAILY MEAN	16	16	15
ANNUAL SEVEN-DAY MINIMUM	(b)16	(a)Dec 15	15
MAXIMUM PEAK FLOW		172	210
MAXIMUM PEAK STAGE		3.74	(b)4.43
INSTANTANEOUS LOW FLOW		(b)	15
ANNUAL RUNOFF (CFSM)	0.783	0.686	0.844
ANNUAL RUNOFF (INCHES)	10.64	9.35	11.47
10 PERCENT EXCEEDS	67	68	79
50 PERCENT EXCEEDS	36	32	40
90 PERCENT EXCEEDS	23	16	26

(a) Also occurred additional days

(b) Ice affected

(c) Estimated due to ice effect or missing record

STREAMS TRIBUTARY TO LAKE MICHIGAN

04074950 WOLF RIVER AT LANGLADE, WI

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LOCATION.--Lat 45°11'24", long 88°44'00", in SE ¼ SW ¼ sec.3, T.31 N., R.14 E., Langlade County, Hydrologic Unit 04030202, on left bank, upstream of bridge on State Highway 64 at Langlade, 1.5 mi east of White Lake, 3.0 mi upstream from White Lake Creek, and at about mile 170 above mouth.

DRAINAGE AREA.--463 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1966 to September 1979, October 1980 to current year.

REVISED RECORDS.--WDR WI-81-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,240 ft above NGVD of 1929, from topographic map. Prior to Oct. 1, 1976, nonrecording gage 50 ft downstream at same elevation.

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	387	322	e370	e280	e220	e320	1,120	760	933	325	250	274
2	358	304	e310	e290	e230	e320	1,200	692	877	336	298	265
3	350	305	e310	e260	e230	e330	1,250	640	744	316	394	263
4	352	344	e300	e240	e230	e340	1,210	586	706	357	337	267
5	291	392	e290	e240	e230	e340	1,170	540	724	354	313	258
6	273	373	e280	e240	e230	e340	1,150	515	710	364	294	269
7	279	344	e280	e240	e230	e350	1,200	498	649	397	275	272
8	272	331	e280	e240	e230	e350	1,230	532	584	390	265	262
9	267	e330	e280	e240	e230	e350	1,210	530	514	369	270	252
10	256	e330	e270	e240	e230	e350	1,160	576	524	349	279	247
11	265	e320	e260	e240	e230	e340	1,100	563	585	334	284	240
12	300	e320	e250	e240	e220	e340	1,040	513	633	326	283	244
13	312	e320	e260	e240	e210	e330	986	524	671	317	279	259
14	286	e320	e260	e230	e210	e330	941	652	843	323	270	248
15	278	e320	e260	e230	e200	e330	902	678	845	312	260	283
16	273	e370	e250	e230	e200	e320	905	630	853	309	252	330
17	279	e370	e250	e230	e210	e320	928	619	965	313	249	336
18	269	e360	e250	e220	e220	e330	941	627	964	307	274	306
19	266	e350	e250	e220	e230	e340	977	620	880	296	253	282
20	262	e380	e250	e220	e250	e350	976	599	759	291	279	277
21	273	e370	e250	e220	e250	e360	994	563	657	296	264	257
22	269	e370	e250	e220	e260	e390	1,000	534	602	289	263	250
23	271	e380	e260	e220	e270	e450	960	587	550	273	258	273
24	265	e390	e260	e220	e270	e520	905	925	509	247	250	263
25	267	333	e260	e220	e280	e640	886	835	455	234	259	250
26	265	e360	e280	e220	e280	e790	875	760	423	234	254	240
27	262	e390	e300	e220	e280	e970	834	797	391	234	299	234
28	295	e360	e310	e220	e300	e1,100	795	848	373	237	306	230
29	332	e370	e300	e220	e300	e1,300	767	827	364	231	293	226
30	333	e370	e280	e220	---	e1,200	798	795	341	226	297	225
31	327	---	e280	e220	---	1,060	---	859	---	224	289	---
TOTAL	9,034	10,498	8,540	7,230	6,960	15,500	30,410	20,224	19,628	9,410	8,690	7,882
MEAN	291	350	275	233	240	500	1,014	652	654	304	280	263
MAX	387	392	370	290	300	1,300	1,250	925	965	397	394	336
MIN	256	304	250	220	200	320	767	498	341	224	249	225
CFSM	0.63	0.76	0.59	0.50	0.52	1.08	2.19	1.41	1.41	0.66	0.61	0.57
IN.	0.73	0.84	0.69	0.58	0.56	1.25	2.44	1.62	1.58	0.76	0.70	0.63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2004, BY WATER YEAR (WY)

MEAN	431	434	361	308	309	463	820	614	486	366	325	396
MAX	813	788	578	548	482	1,227	1,330	1,312	1,013	874	632	813
(WY)	(1986)	(1986)	(1986)	(1969)	(1984)	(1973)	(1976)	(1973)	(1991)	(1968)	(1972)	(1968)
MIN	196	204	226	191	213	278	263	289	173	183	188	171
(WY)	(1977)	(1977)	(1977)	(1999)	(1982)	(1982)	(1990)	(1998)	(1988)	(1989)	(1989)	(1989)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1966 - 2004

ANNUAL TOTAL	142,589	154,006	
ANNUAL MEAN	391	421	444
HIGHEST ANNUAL MEAN			666
LOWEST ANNUAL MEAN			326
HIGHEST DAILY MEAN	1,300	Apr 21	(a)1,300
LOWEST DAILY MEAN	(a)150	Jan 23-29	(a)200
ANNUAL SEVEN-DAY MINIMUM	(a)150	Jan 23	(a)210
MAXIMUM PEAK FLOW			(a)
MAXIMUM PEAK STAGE			(a)9.82
INSTANTANEOUS LOW FLOW			(a)
ANNUAL RUNOFF (CFSM)	0.844	0.909	(b)102
ANNUAL RUNOFF (INCHES)	11.46	12.37	13.03
10 PERCENT EXCEEDS	735	876	756
50 PERCENT EXCEEDS	296	310	365
90 PERCENT EXCEEDS	202	230	240

(a) Ice affected

(b) Result of freezeup

(c) Estimated due to ice effect or missing record

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04075365 EVERGREEN RIVER BELOW EVERGREEN FALLS NEAR LANGLADE, WI

LOCATION.--Lat 45°03'57", long 88°40'34", in NE ¼ SE ¼ sec.21, T.30 N., R.15 E., Menominee County, Hydrologic Unit 04030202, on right bank 200 ft upstream from bridge on Evergreen Falls road below Evergreen Falls.

DRAINAGE AREA.--64.5 mi<sup>2</sup>.

PERIOD OF RECORD.--December 2002 to current water year.

REVISED RECORDS.--WDR WI-95-1: 1993(M).

GAGE.--Water-stage recorder. Elevation of gage is 990 ft above NGVD of 1929, from topographic map.

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

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	e63	55	e49	e35	e46	e58	105	78	122	73	e52	53
2	e59	54	e30	e64	e47	e57	102	74	112	70	e60	50
3	e59	56	e26	e53	e47	e54	103	71	92	70	e74	52
4	e60	74	e37	e23	e45	e52	96	69	82	82	e68	53
5	e59	89	e53	e37	e48	e49	92	67	79	79	e62	54
6	e57	74	e51	e36	e49	e54	96	67	78	89	e56	56
7	e55	e63	e47	e39	e48	e54	108	66	75	97	e56	61
8	e53	e26	56	e42	e47	e53	109	94	73	85	e56	57
9	52	e49	53	e43	e49	e53	103	103	84	80	e63	64
10	54	e65	e49	e45	e48	e56	94	99	99	76	e60	58
11	55	63	e36	e49	e48	e57	86	91	92	73	e56	54
12	71	54	e28	e52	e49	e56	82	78	105	70	e56	54
13	69	50	e40	e49	e49	e53	79	82	119	71	e53	52
14	64	48	e54	e44	e48	e63	81	92	144	69	52	52
15	62	49	e55	e44	e46	e65	84	94	116	67	51	62
16	62	50	e54	e46	e45	e62	88	81	100	72	51	65
17	62	50	e53	e45	e46	e60	92	75	136	78	53	58
18	61	55	e47	e43	e48	e59	97	73	116	70	55	55
19	61	63	e43	e41	e51	57	104	70	93	67	59	54
20	61	55	e33	e40	e53	56	98	73	85	65	54	53
21	59	52	e41	e42	e53	e52	99	69	82	65	50	60
22	58	51	e54	e41	e52	e51	99	75	80	64	50	86
23	60	61	e52	e41	e56	e52	87	101	78	e63	49	59
24	60	e67	e47	e40	e55	e53	80	149	85	e59	51	52
25	59	e49	e43	e41	e55	57	83	120	80	e57	58	50
26	59	e59	e48	e42	e54	85	86	96	78	e55	57	47
27	58	56	e55	e43	e55	120	81	89	76	e54	58	47
28	63	52	e78	e42	e57	144	78	89	76	e54	54	47
29	68	51	e82	e42	e59	258	77	83	74	e53	50	47
30	64	50	e60	e42	---	210	79	87	73	e53	48	48
31	57	---	e44	e42	---	120	---	116	---	e53	51	---
TOTAL	1,864	1,690	1,498	1,328	1,453	2,330	2,748	2,671	2,784	2,136	1,723	1,660
MEAN	60.1	56.3	48.3	42.8	50.1	75.2	91.6	86.2	92.8	68.9	55.6	55.3
MAX	71	89	82	64	59	258	109	149	144	97	74	86
MIN	52	26	26	23	45	49	77	66	73	53	48	47

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2004, BY WATER YEAR (WY)

MEAN	60.1	56.3	52.5	48.0	48.4	70.5	88.2	87.5	84.7	66.1	58.5	58.9
MAX	60.1	56.3	56.6	53.1	50.1	75.2	91.6	88.8	92.8	68.9	61.4	62.4
(WY)	(2004)	(2004)	(2003)	(2003)	(2004)	(2004)	(2004)	(2003)	(2004)	(2004)	(2003)	(2003)
MIN	60.1	56.3	48.3	42.8	46.7	65.9	84.8	86.2	76.7	63.3	55.6	55.3
(WY)	(2004)	(2004)	(2004)	(2004)	(2003)	(2003)	(2003)	(2004)	(2003)	(2003)	(2004)	(2004)

## SUMMARY STATISTICS

## FOR 2003 CALENDAR YEAR

## FOR 2004 WATER YEAR

## WATER YEARS 2003 - 2004

ANNUAL TOTAL	23,381	23,885		
ANNUAL MEAN	64.1	65.3	65.3	
HIGHEST ANNUAL MEAN			65.3	2004
LOWEST ANNUAL MEAN			65.3	2004
HIGHEST DAILY MEAN	219	Apr 16	258	Mar 29
LOWEST DAILY MEAN	(a)26	(b)Nov 8	(a)23	Jan 4
ANNUAL SEVEN-DAY MINIMUM	(a)42	Dec 1	(a)38	Jan 4
MAXIMUM PEAK FLOW			274	Mar 29
MAXIMUM PEAK STAGE			4.87	Mar 29
10 PERCENT EXCEEDS	89	95	95	95
50 PERCENT EXCEEDS	59	58	58	58
90 PERCENT EXCEEDS	46	45	45	45

(a) Ice affected

(b) Also occurred Dec. 3

(c) Estimated due to ice effect or missing record



04075365 EVERGREEN RIVER BELOW EVERGREEN FALLS, 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)	Specific conductance, wat unfltrd 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													
08...	0830	53	70	742	12.7	108	7.7	334	7.2	39.8	19.7	1.53	2.36
NOV													
05...	0850	91	70	743	13.6	104	7.8	271	3.1	32.5	16.3	1.39	2.14
19...	1135	64	70	730	13.2	106	7.8	288	4.1	36.9	17.9	1.48	2.25
DEC													
02...	0825	17	70	754	16.1	111	7.9	307	-2	37.7	18.6	1.30	2.09
JAN													
08...	0830	41	70	748	13.2	92	7.2	317	-2	47.3	22.0	1.65	2.64
FEB													
05...	0900	48	70	754	15.0	103	7.4	312	-3	40.4	19.7	1.51	2.43
MAR													
03...	0855	56	70	748	17.6	122	7.8	304	-2	36.1	17.6	1.64	2.79
24...	1200	55	70	739	15.4	114	7.6	315	1.5	39.4	19.5	1.48	2.30
31...	1230	112	40	746	14.3	109	7.5	217	2.9	24.3	11.9	1.88	1.78
APR													
08...	1150	110	70	737	14.1	114	7.5	221	5.0	26.8	13.5	1.31	1.81
MAY													
04...	0800	69	70	736	12.1	104	7.6	299	7.1	38.5	18.2	1.40	2.39
24...	1245	152	40	741	11.9	106	7.5	200	9.0	25.6	12.4	1.11	1.89
JUN													
02...	0825	116	70	740	11.8	109	7.6	242	10.6	30.7	14.9	1.14	1.92
JUL													
14...	1240	70	70	741	10.6	113	8.0	321	17.0	37.4	18.4	1.35	2.39
AUG													
11...	1605	56	70	740	10.6	103	8.0	318	12.8	39.9	20.0	1.31	2.32
SEP													
20...	1135	53	70	751	12.0	115	8.0	334	12.8	40.5	18.8	1.61	2.38
27...	1105	47	70	746	11.9	112	8.0	341	11.6	39.9	19.0	1.54	2.35

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04075365 EVERGREEN RIVER BELOW EVERGREEN FALLS, 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)	Ortho-phosphate, 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)	Methyl-mercury water fltrd, ng/L (50285)	Methyl-mercury suspnd sedimnt total, ng/L (62977)
OCT 08...	167	3.74	8.9	.13	<.04	.78	<.02	<.04	14	.39	.561	.04	.045
NOV 05...	136	3.92	8.5	.38	.06	.75	<.02	<.04	38	1.11	--	--	.139
NOV 19...	149	3.67	8.8	.14	<.04	.82	<.02	<.04	24	.67	--	.06	.044
DEC 02...	162	3.60	9.5	.13	<.04	.88	<.02	<.04	21	.35	.781	<.04	--
JAN 08...	188	4.29	10.8	E.08	<.04	1.12	<.02	<.04	15	.36	.584	<.04	--
FEB 05...	167	3.96	9.4	.10	<.04	1.07	<.02	<.04	19	.34	1.66	<.04	--
MAR 03...	151	4.76	8.5	.23	E.04	.93	<.02	E.02	18	.40	--	<.04	.179
MAR 24...	163	3.62	9.2	E.07	<.04	.98	<.02	<.04	13	.64	1.29	--	.083
MAR 31...	98	3.18	7.4	.42	.04	.60	E.01	E.02	64	2.88	2.27	--	.155
APR 08...	111	2.96	6.3	.33	<.04	.61	<.02	<.04	56	2.56	1.60	--	.088
MAY 04...	154	3.72	8.4	.14	<.04	.72	<.02	<.04	19	--	--	--	--
MAY 24...	97	2.77	5.8	.51	<.04	.32	<.02	<.04	101	4.60	--	.12	--
JUN 02...	121	2.86	6.5	.37	<.04	.50	<.02	<.04	70	--	--	--	--
JUL 14...	161	3.77	8.4	.17	<.04	.66	<.02	<.04	21	--	--	.08	--
AUG 11...	165	3.42	8.4	.11	<.04	.75	<.02	<.04	20	--	--	--	--
SEP 20...	164	3.38	8.0	.13	<.04	.68	<.02	<.04	22	--	--	--	--
SEP 27...	167	3.36	8.1	.10	<.04	.73	<.02	<.04	20	--	--	--	--

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

Date	Suspended sediment concentration mg/L (80154)
OCT 08...	22
NOV 05...	23
NOV 19...	28
DEC 02...	28
JAN 08...	23
FEB 05...	38
MAR 03...	41
MAR 24...	40
MAR 31...	38
APR 08...	33
MAY 04...	28
MAY 24...	50
JUN 02...	33
JUL 14...	30
AUG 11...	28
SEP 20...	28
SEP 27...	28

STREAMS TRIBUTARY TO LAKE MICHIGAN

04077630 RED RIVER, AT MORGAN ROAD, NEAR MORGAN, WI

LOCATION.--Lat 44°53'53", long 88°50'39", in NW ¼ NE ¼ sec.19, T.28 N., R.14 E., Shawano County, Hydrologic Unit 04030202, on left bank 1.7 mi northwest of Morgan, 1.1 mi downstream of the confluence with the West Branch of the Red River, and 2.2 mi upstream of Smith Creek.

DRAINAGE AREA.--114 mi<sup>2</sup>.

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

REVISED RECORDS.--WDR WI-95-1: 1993(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 990 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	107	101	102	e100	e73	e110	486	152	270	118	100	94
2	100	99	124	e100	e75	e110	412	147	257	114	126	93
3	99	99	e130	e100	e76	e120	363	147	208	114	151	92
4	102	122	e110	e99	e76	e130	320	142	173	136	135	91
5	101	162	e100	e99	e76	e130	279	135	153	149	111	90
6	99	152	e100	e96	e76	e130	255	133	145	175	100	93
7	98	118	e100	e96	e76	e130	260	130	138	223	104	100
8	97	95	101	e95	e76	e120	268	153	132	216	102	98
9	95	e110	101	e95	e76	e120	254	182	147	174	121	94
10	93	e110	102	e93	e75	e130	231	196	181	148	119	96
11	92	e100	e100	e92	e74	e130	209	199	206	135	112	90
12	103	e100	e100	e91	e74	e130	190	179	239	168	114	89
13	107	e100	e100	e89	e74	e130	177	180	274	151	103	88
14	112	98	e100	e89	e73	e130	172	211	359	130	99	89
15	100	107	e100	e88	e72	e130	170	210	320	119	97	106
16	97	103	e110	e87	e72	e120	172	188	273	118	96	126
17	100	102	e110	e85	e73	e120	177	166	291	131	98	114
18	96	114	e100	e85	e75	e120	187	153	349	125	104	104
19	95	120	e100	e82	e76	e120	223	152	308	118	99	96
20	94	116	e99	e79	e80	e120	238	150	260	111	96	93
21	93	110	e99	e78	e82	e120	249	146	181	113	93	94
22	96	110	e99	e78	e83	e120	240	143	170	114	92	90
23	97	120	e97	e78	e84	e130	218	181	162	115	92	90
24	96	126	e95	e76	e90	e130	191	292	171	103	95	88
25	99	110	e95	e75	e93	e140	191	277	160	101	94	89
26	95	e130	e96	e75	e95	e270	200	237	145	101	96	90
27	94	125	e98	e76	e97	e480	190	194	137	100	100	89
28	99	114	e100	e77	e98	e600	225	183	134	98	104	90
29	108	109	e110	e75	e100	835	195	165	129	97	100	87
30	107	107	e110	e75	---	796	158	168	124	99	96	86
31	104	---	e100	e74	---	603	---	259	---	99	95	---
TOTAL	3,075	3,389	3,188	2,677	2,320	6,704	7,100	5,550	6,196	4,013	3,244	2,829
MEAN	99.2	113	103	86.4	80.0	216	237	179	207	129	105	94.3
MAX	112	162	130	100	100	835	486	292	359	223	151	126
MIN	92	95	95	74	72	110	158	130	124	97	92	86
CFSM	0.87	0.99	0.90	0.76	0.70	1.90	2.08	1.57	1.81	1.14	0.92	0.83
IN.	1.00	1.11	1.04	0.87	0.76	2.19	2.32	1.81	2.02	1.31	1.06	0.92

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

	124	127	106	92.0	95.4	134	211	165	168	126	121	113
MAX	175	221	164	126	124	216	331	254	313	217	209	160
(WY)	(1996)	(1993)	(1993)	(1993)	(1998)	(2004)	(1996)	(1993)	(1996)	(1996)	(1995)	(1993)
MIN	79.6	84.6	73.7	63.5	65.4	97.7	111	106	97.0	78.8	86.6	72.7
(WY)	(2000)	(2000)	(1999)	(1999)	(2003)	(2001)	(2000)	(2000)	(1999)	(1995)	(1999)	(1999)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1993 - 2004

ANNUAL TOTAL	44,472	50,285	
ANNUAL MEAN	122	137	132
HIGHEST ANNUAL MEAN			184
LOWEST ANNUAL MEAN			104
HIGHEST DAILY MEAN	(a)600	Apr 17	835
LOWEST DAILY MEAN	(b)56	Jan 26	(b)72
ANNUAL SEVEN-DAY MINIMUM	(b)57	Jan 21	(b)73
MAXIMUM PEAK FLOW			(d)920
MAXIMUM PEAK STAGE			(b)8.69
INSTANTANEOUS LOW FLOW			(f)31
ANNUAL RUNOFF (CFSM)	1.07	1.21	1.16
ANNUAL RUNOFF (INCHES)	14.51	16.41	15.72
10 PERCENT EXCEEDS	190	223	207
50 PERCENT EXCEEDS	103	107	110
90 PERCENT EXCEEDS	70	85	80

- (a) Estimated
- (b) Ice affected
- (c) Also occurred Jan. 26, 2003
- (d) Gage height, 8.61 ft
- (e) Estimated due to ice effect or missing record
- (f) Result of freezeup

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04077630 RED RIVER AT MORGAN ROAD NEAR MORGAN, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: March to September 2004.

INSTRUMENTATION.--Continuous water temperature recorder since March 2004. Sensor located 15 ft stream-ward from left edge of water.

REMARKS.--Records represent water temperature at sensor within 0.5°C.

EXTREMES FOR CURRENT PERIOD.--

WATER TEMPERATURE: Maximum, 23.5°C, June 8; minimum, 0.5°C, March 28 and 29.

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

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	4.8	1.0	3.0	12.3	8.1	10.0
2	---	---	---	---	---	---	6.0	1.7	4.0	10.7	8.0	9.0
3	---	---	---	---	---	---	4.5	3.0	3.5	11.6	5.4	8.5
4	---	---	---	---	---	---	5.5	1.8	3.5	14.5	8.4	11.5
5	---	---	---	---	---	---	6.2	2.2	4.5	12.5	9.2	11.0
6	---	---	---	---	---	---	9.1	4.3	6.5	13.8	9.1	11.5
7	---	---	---	---	---	---	8.5	5.2	7.0	13.7	10.0	12.0
8	---	---	---	---	---	---	7.7	5.7	6.5	11.9	9.2	10.0
9	---	---	---	---	---	---	7.8	4.2	6.0	10.9	8.8	9.5
10	---	---	---	---	---	---	6.5	4.9	5.5	14.0	10.5	12.0
11	---	---	---	---	---	---	5.0	3.5	4.5	15.2	11.3	13.5
12	---	---	---	---	---	---	4.4	2.2	3.5	19.0	13.6	16.0
13	---	---	---	---	---	---	7.6	2.0	4.5	17.2	15.4	16.5
14	---	---	---	---	---	---	9.0	5.1	7.0	15.4	10.8	13.0
15	---	---	---	---	---	---	9.9	6.0	8.0	13.9	8.7	11.5
16	---	---	---	---	---	---	12.9	7.9	10.5	16.0	11.2	13.5
17	---	---	---	---	---	---	14.7	10.4	12.5	15.5	13.2	14.5
18	---	---	---	---	---	---	13.4	10.7	12.0	17.6	12.8	15.0
19	---	---	---	---	---	---	13.2	11.3	12.5	17.5	13.0	15.5
20	---	---	---	---	---	---	11.3	8.1	9.0	20.3	15.2	17.5
21	---	---	---	---	---	---	8.1	7.1	7.5	18.7	13.2	15.0
22	---	---	---	---	---	---	9.7	6.1	8.0	13.6	11.7	12.5
23	---	---	---	---	---	---	9.9	6.3	8.0	13.4	10.7	12.0
24	---	---	---	0.6	0.5	0.5	9.7	6.8	8.5	12.3	9.8	11.0
25	---	---	---	0.6	0.4	0.5	8.4	6.7	7.5	12.6	10.6	11.5
26	---	---	---	0.5	0.4	0.5	7.8	5.6	6.5	15.4	10.4	13.0
27	---	---	---	0.5	0.4	0.5	8.5	4.3	6.5	15.3	12.2	13.5
28	---	---	---	0.5	0.3	0.5	13.9	6.8	10.0	16.0	11.1	13.5
29	---	---	---	0.8	0.3	0.5	14.0	11.7	13.0	14.3	11.6	12.5
30	---	---	---	1.2	0.4	1.0	12.6	9.3	10.5	11.9	10.8	11.5
31	---	---	---	3.4	0.8	2.0	---	---	---	13.9	11.6	12.5
MONTH	---	---	---	3.4	0.3	0.8	14.7	1.0	7.3	20.3	5.4	12.6



STREAMS TRIBUTARY TO LAKE MICHIGAN

0407809265 MIDDLE BRANCH EMBARRASS RIVER NEAR WITTENBERG, WI

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LOCATION.--Lat 44°49'31", long 89°07'05", in NW ¼ NW ¼ sec.13, T.27 N., R.11 E., Shawano County, Hydrologic Unit 04030202, on right bank 60 ft upstream from Cardinal Lane, 2.5 mi east of Wittenberg, and 2.5 mi upstream from Wilson Creek.

DRAINAGE AREA.--76.3 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,118.24 ft above NGVD of 1929 (levels by Wisconsin Department of Transportation).

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Flow affected by pumping for irrigation many times during summer months. 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	35	34	e40	e27	e21	e27	380	76	227	51	33	28
2	33	33	e38	e26	e22	e28	276	70	250	48	37	28
3	33	33	e35	e24	e22	e29	253	64	208	48	41	29
4	35	44	e32	e22	e21	e30	224	61	134	78	42	30
5	35	67	31	e22	e21	e31	185	57	92	104	37	29
6	33	74	31	e22	e22	e31	154	56	78	124	34	29
7	32	55	30	e22	e22	e32	154	54	71	179	33	30
8	31	e41	31	e22	e21	e32	162	59	64	179	34	30
9	30	e37	32	e22	e21	e33	156	82	93	108	35	29
10	29	36	34	e22	e21	e33	137	99	139	79	42	28
11	29	36	e29	e22	e20	e33	117	114	164	68	39	27
12	32	37	e29	e22	e20	e32	99	94	209	80	36	27
13	38	39	e28	e21	e20	e31	87	92	258	79	35	27
14	39	30	e27	e21	e19	e31	81	102	299	63	34	27
15	35	38	e27	e20	e19	e31	79	111	274	55	33	31
16	33	35	e28	e20	e18	e31	81	96	187	52	33	34
17	31	35	e28	e21	e19	e31	89	78	152	53	33	36
18	31	38	e28	e21	e20	e32	98	68	254	51	33	32
19	31	46	e27	e21	e20	e32	130	62	342	46	31	30
20	31	51	e28	e20	e20	e33	155	59	223	44	31	28
21	30	45	e26	e21	e20	e32	168	60	111	43	30	28
22	30	42	e26	e20	e20	e31	159	60	90	42	30	27
23	31	46	e26	e22	e21	e32	143	88	91	40	29	27
24	31	e55	e25	e22	e23	e34	112	193	88	39	29	28
25	31	e53	e23	e23	e24	e49	102	223	81	37	29	27
26	31	e51	e23	e23	e24	e160	109	187	70	36	29	27
27	30	50	e24	e23	e25	355	103	118	64	36	29	27
28	32	44	e27	e23	e25	493	92	111	61	35	29	27
29	35	41	e33	e22	e26	773	86	95	58	34	29	27
30	37	36	e34	e21	---	747	80	102	54	34	29	27
31	36	---	e30	e21	---	524	---	180	---	33	28	---
TOTAL	1,010	1,302	910	681	617	3,853	4,251	2,971	4,486	1,998	1,026	861
MEAN	32.6	43.4	29.4	22.0	21.3	124	142	95.8	150	64.5	33.1	28.7
MAX	39	74	40	27	26	773	380	223	342	179	42	36
MIN	29	30	23	20	18	27	79	54	54	33	28	27
CFSM	0.43	0.57	0.38	0.29	0.28	1.63	1.86	1.26	1.96	0.84	0.43	0.38
IN.	0.49	0.63	0.44	0.33	0.30	1.88	2.07	1.45	2.19	0.97	0.50	0.42

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

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
MEAN	51.9	52.5	36.1	27.4	30.4	69.4	139	95.1	93.9	49.2	45.1	48.8			
MAX	107	128	73.3	45.7	44.1	124	241	167	222	96.3	100	97.9			
(WY)	(2003)	(1993)	(1993)	(1996)	(1998)	(2004)	(1996)	(1993)	(1993)	(1996)	(1995)	(1992)			
MIN	23.2	27.2	13.5	15.4	17.3	35.9	40.4	46.7	31.6	21.9	25.1	23.4			
(WY)	(1990)	(1990)	(1990)	(2000)	(2003)	(2001)	(1990)	(1998)	(1995)	(1995)	(1998)	(1999)			

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1990 - 2004

ANNUAL TOTAL	20,576	23,966	
ANNUAL MEAN	56.4	65.5	61.6
HIGHEST ANNUAL MEAN			100
LOWEST ANNUAL MEAN			43.0
HIGHEST DAILY MEAN	537	Apr 18	773
LOWEST DAILY MEAN	(a)15	Feb 7	(a)18
ANNUAL SEVEN-DAY MINIMUM	(a)16	(b)Feb 6	(a)19
MAXIMUM PEAK FLOW			878
MAXIMUM PEAK STAGE			(c)5.20
ANNUAL RUNOFF (CFSM)	0.739	0.858	0.807
ANNUAL RUNOFF (INCHES)	10.03	11.68	10.97
10 PERCENT EXCEEDS	110	153	123
50 PERCENT EXCEEDS	33	34	40
90 PERCENT EXCEEDS	18	22	22

- (a) Ice affected
- (b) Also occurred additional days
- (c) Recorded gage height 5.20 ft, result of drawdown; outside crest-gage peak 5.40 ft
- (e) Estimated due to ice effect or missing record

0407809265 MIDDLE BRANCH EMBARRASS RIVER NEAR WITTENBERG, WI—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: December 1989 to current year.

INSTRUMENTATION.--Continuous water temperature recorder since December 1989. Sensor located at midstream.

REMARKS.--Records represent water temperature at sensor within 0.5°C.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum, 31.0°C, Aug. 7, 8, 2001; minimum, 0.0°C, on many days during winter.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 25.5°C, July 7; minimum, 0.0°C, many days in winter.

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

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9.3	6.5	8.0	6.6	4.8	5.5	0.7	0.0	0.0	0.2	0.0	0.0
2	9.0	5.4	7.0	6.0	5.1	5.5	0.4	0.0	0.0	0.1	0.0	0.0
3	9.0	6.9	7.5	5.5	3.3	4.0	0.3	0.0	0.0	0.3	0.0	0.0
4	8.9	5.6	7.0	4.1	3.3	3.5	1.4	0.0	0.5	0.0	0.0	0.0
5	9.3	5.1	7.0	3.5	2.2	3.0	1.9	0.2	1.0	0.2	0.0	0.0
6	10.0	5.3	7.5	2.5	0.8	1.5	1.7	0.0	1.0	0.1	0.0	0.0
7	11.0	6.2	8.5	1.1	0.0	0.5	1.9	0.0	1.0	0.3	0.0	0.0
8	12.8	8.2	10.5	0.3	0.0	0.0	2.3	0.9	1.5	0.1	0.0	0.0
9	13.5	9.2	11.0	0.7	0.0	0.5	1.8	0.9	1.5	0.2	0.0	0.0
10	14.6	10.1	12.0	2.2	0.3	1.5	0.9	0.0	0.0	0.4	0.0	0.0
11	15.3	11.3	13.0	3.7	0.8	2.0	0.2	0.0	0.0	0.0	0.0	0.0
12	14.0	11.2	12.5	2.5	0.4	1.5	0.3	0.0	0.0	0.0	0.0	0.0
13	13.6	11.2	12.5	1.5	0.0	0.5	0.4	0.0	0.0	0.3	0.0	0.0
14	12.9	9.8	11.5	3.0	0.1	1.5	0.1	0.0	0.0	0.2	0.0	0.0
15	11.3	8.5	10.0	3.0	2.1	2.5	0.0	0.0	0.0	0.1	0.0	0.0
16	10.1	7.0	8.5	3.4	2.2	2.5	0.0	0.0	0.0	0.0	0.0	0.0
17	9.8	6.6	8.0	4.2	1.7	3.0	0.0	0.0	0.0	0.1	0.0	0.0
18	10.7	7.0	9.0	4.9	2.8	4.0	0.1	0.0	0.0	0.2	0.0	0.0
19	10.7	6.9	8.5	4.4	2.4	3.5	0.2	0.0	0.0	0.3	0.0	0.0
20	12.2	7.3	9.5	5.5	2.5	4.0	0.2	0.0	0.0	0.4	0.0	0.0
21	11.3	8.9	10.0	3.8	2.6	3.0	0.4	0.0	0.0	0.1	0.0	0.0
22	8.9	6.9	8.0	2.6	2.0	2.5	0.3	0.0	0.0	0.2	0.0	0.0
23	9.1	7.4	8.0	2.4	1.3	2.0	0.0	0.0	0.0	0.0	0.0	0.0
24	8.0	6.0	7.0	1.3	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0
25	8.7	6.1	7.0	0.2	0.0	0.0	0.4	0.0	0.0	0.2	0.0	0.0
26	6.9	5.0	6.0	0.8	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
27	7.2	4.4	5.5	1.4	0.3	1.0	0.1	0.0	0.0	0.3	0.0	0.0
28	6.7	4.3	5.5	1.1	0.1	0.5	0.4	0.0	0.0	0.3	0.0	0.0
29	5.9	4.7	5.0	0.9	0.0	0.5	0.1	0.0	0.0	0.4	0.0	0.0
30	6.9	4.7	5.5	1.8	0.0	0.5	0.3	0.0	0.0	0.3	0.0	0.0
31	6.8	5.7	6.0	---	---	---	0.2	0.0	0.0	0.5	0.0	0.0
MONTH	15.3	4.3	8.5	6.6	0.0	2.0	2.3	0.0	0.2	0.5	0.0	0.0







## STREAMS TRIBUTARY TO LAKE MICHIGAN

04079000 WOLF RIVER AT NEW LONDON, WI

LOCATION.--Lat 44°23'32", long 88°44'25", in NE ¼ SE ¼ sec.12, T.22 N., R.14 E., Waupaca County, Hydrologic Unit 04030202, on right bank 100 ft downstream from Pearl Street bridge in New London, 0.2 mi downstream from Embarrass River, and at mile 56.3.

DRAINAGE AREA.--2,260 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1896 to current year. Prior to October 1913 monthly discharges only, published in WSP 1307.

REVISED RECORDS.--WSP 1114: 1943(M). WSP 1337: 1931. WDR WI-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 747.94 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 4, 1951, nonrecording gage.

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

COOPERATION.--Values prior to October 1913 taken from House Document 276, 72nd Congress, First Session (computed by Corps of Engineers).

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Flood of Apr. 16, 1888, reached a stage of 11.6 ft, from information by U.S. Army Corps of Engineers.

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	1,170	986	1,900	e1,500	e740	e1,100	7,830	2,990	4,290	2,780	996	906
2	1,130	1,020	1,750	e1,500	e740	e1,300	8,580	2,890	4,450	2,550	988	897
3	1,100	1,050	1,630	e1,500	e740	e1,400	8,800	2,790	4,480	2,320	1,020	890
4	1,100	1,190	1,500	e1,400	e730	e1,700	8,460	2,680	4,440	2,120	1,050	880
5	1,100	1,360	1,460	e1,300	e730	e1,900	7,820	2,570	4,340	1,980	1,040	872
6	1,100	e1,500	1,470	e1,200	e740	e2,300	7,150	2,460	4,270	1,970	1,060	873
7	1,090	e1,600	1,420	e1,100	e750	e2,700	6,460	2,320	4,170	2,000	1,050	847
8	1,060	e1,600	1,410	e1,000	e740	e3,000	5,910	2,310	4,020	2,070	1,000	810
9	1,030	1,650	1,430	e930	e730	e3,300	5,450	2,450	4,080	2,110	1,020	804
10	998	1,560	e1,400	e890	e730	e3,500	5,080	2,550	3,920	2,110	996	808
11	980	1,470	e1,400	e880	e730	e3,600	4,790	2,610	3,990	2,140	981	819
12	971	1,410	e1,300	e880	e710	e3,500	4,550	2,690	4,180	2,470	964	809
13	955	1,430	e1,200	e850	e700	e3,400	4,340	2,760	4,320	2,340	954	802
14	967	1,420	e1,200	e840	e700	e3,200	4,140	2,870	4,460	2,210	954	802
15	979	1,400	e1,200	e830	e690	e3,100	3,940	2,990	4,640	2,110	947	804
16	1,000	1,360	e1,200	e840	e670	e3,000	3,770	3,060	4,910	1,970	933	823
17	1,030	1,350	e1,300	e820	e670	e2,900	3,600	3,070	5,630	1,820	928	841
18	1,000	1,420	e1,300	e820	e680	e2,800	3,440	3,040	6,090	1,680	928	852
19	972	1,500	e1,300	e810	e680	e2,700	3,310	2,980	6,200	1,580	932	862
20	968	1,570	e1,300	e790	e680	e2,600	3,210	2,970	6,080	1,490	923	876
21	951	1,610	e1,300	e790	e680	e2,500	3,180	2,970	5,770	1,410	917	864
22	933	1,610	e1,300	e770	e680	e2,600	3,170	3,010	5,390	1,350	906	829
23	932	1,750	e1,200	e760	e710	e2,600	3,170	3,130	5,020	1,290	880	805
24	929	2,090	e1,200	e760	e740	e2,600	3,160	3,350	4,710	1,250	868	795
25	930	2,250	e1,100	e760	e800	e2,700	3,160	3,550	4,380	1,210	870	769
26	925	2,280	e1,100	e760	e840	e2,800	3,180	3,720	4,050	1,150	886	749
27	924	2,270	e1,100	e760	e900	3,220	3,190	3,800	3,750	1,100	935	741
28	938	2,160	e1,100	e780	e910	3,600	3,180	3,810	3,490	1,070	973	741
29	947	2,040	e1,200	e780	e1,000	4,170	3,140	3,770	3,250	1,050	970	739
30	951	1,960	e1,300	e760	---	5,200	3,070	3,790	3,010	1,020	943	724
31	972	---	e1,400	e760	---	6,620	---	4,020	---	1,010	921	---
TOTAL	31,032	47,866	41,370	29,120	21,540	91,610	142,230	93,970	135,780	54,730	29,733	24,633
MEAN	1,001	1,596	1,335	939	743	2,955	4,741	3,031	4,526	1,765	959	821
MAX	1,170	2,280	1,900	1,500	1,000	6,620	8,800	4,020	6,200	2,780	1,060	906
MIN	924	986	1,100	760	670	1,100	3,070	2,310	3,010	1,010	868	724
CFSM	0.44	0.71	0.59	0.42	0.33	1.31	2.10	1.34	2.00	0.78	0.42	0.36
IN.	0.51	0.79	0.68	0.48	0.35	1.51	2.34	1.55	2.23	0.90	0.49	0.41

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 2004, BY WATER YEAR (WY)

MEAN	1,479	1,664	1,238	981	959	2,183	4,132	2,815	2,223	1,469	1,124	1,341
MAX	4,761	4,738	2,892	2,149	2,003	7,566	9,169	7,452	5,764	5,005	2,845	4,544
(WY)	(1987)	(1986)	(1993)	(1960)	(1984)	(1973)	(1922)	(1960)	(1993)	(1993)	(1924)	(1938)
MIN	533	617	555	523	523	679	1,157	901	595	581	443	429
(WY)	(1949)	(1934)	(1934)	(1959)	(1936)	(1964)	(1931)	(1931)	(1988)	(1988)	(1933)	(1933)

04079000 WOLF RIVER AT NEW LONDON, WI—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1896 - 2004	
ANNUAL TOTAL	597,777		743,614		1,770	
ANNUAL MEAN	1,638		2,032		3,200	
HIGHEST ANNUAL MEAN					866	
LOWEST ANNUAL MEAN					1931	
HIGHEST DAILY MEAN	5,170	Apr 25	8,800	Apr 3	15,500	Apr 13, 1922
LOWEST DAILY MEAN	(a)500	Jan 26-28	(a)670	Feb 16, 17	216	Aug 27, 1931
ANNUAL SEVEN-DAY MINIMUM	(a)507	Jan 23	(a)677	Feb 16	337	Sep 3, 1933
MAXIMUM PEAK FLOW			8,840	Apr 3	(b)15,500	Apr 13, 1922
MAXIMUM PEAK STAGE			9.40	Apr 3	(c)11.83	Apr 3, 1979
ANNUAL RUNOFF (CFSM)	0.725		0.899		0.797	
ANNUAL RUNOFF (INCHES)	9.84		12.24		10.64	
10 PERCENT EXCEEDS	3,330		4,170		3,500	
50 PERCENT EXCEEDS	1,230		1,350		1,280	
90 PERCENT EXCEEDS	620		766		713	

- (a) Ice affected
- (b) Gage-height, 11.4 ft
- (c) Backwater from ice
- (e) Estimated due to ice effect or missing record

04082400 FOX RIVER AT OSHKOSH, WI

LOCATION.--Lat 44°00'49", long 88°32'27" in SW 1/4 SW 1/4 sec.24, T.18 N., R.16 E., Winnebago County, Hydrologic Unit 04030201, on right bank about 400 ft downstream from U.S. Highway 45 and State Highway 26 bridge, at Oshkosh.

DRAINAGE AREA.--5,310 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1991 to current year.

GAGE.--Water-stage recorder and an acoustical velocity meter (AVM) system. Single-path transducer installation.

REMARKS.--Records fair, except those for estimated daily discharges and days with negative mean daily flow, 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	2,540	8.8	6,130	2,550	2,040	3,090	9,830	e5,300	14,500	8,920	2,190	2,690
2	125	2,600	-234	4,020	2,090	5,020	10,600	e5,200	12,900	9,330	2,460	2,620
3	2,790	-1,310	2,460	5,550	2,230	5,180	14,100	e5,000	12,500	8,170	930	2,150
4	1,790	5,740	2,870	2,630	1,830	5,610	9,800	e4,800	12,300	11,500	3,150	1,870
5	510	5,980	3,250	4,040	2,090	7,100	10,200	e4,800	12,000	7,010	3,340	423
6	2,200	3,880	2,640	1,640	2,150	8,240	11,500	e4,700	12,200	8,960	3,760	4,630
7	2,880	4,940	2,800	2,620	1,970	10,100	10,800	e4,500	11,000	9,960	1,860	2,150
8	2,120	1,040	3,410	2,850	1,800	8,570	11,500	e4,700	11,700	8,170	2,030	513
9	1,190	3,160	3,000	2,790	2,140	8,930	11,600	e5,000	9,830	6,530	5,410	2,960
10	1,370	2,880	5,780	2,610	2,170	9,230	9,920	e5,700	9,210	7,520	4,710	477
11	2,140	3,810	3,670	2,720	2,040	12,200	8,850	e5,800	9,770	7,140	2,230	3,470
12	3,880	8,290	215	2,900	2,140	7,550	9,140	e6,000	15,500	7,850	-2,300	996
13	1,750	3,040	2,300	2,310	1,920	9,340	9,280	e6,000	16,100	8,270	2,120	506
14	3,150	-2,250	2,420	2,600	2,160	11,500	8,500	e6,200	16,000	6,090	1,670	2,840
15	2,740	2,630	2,520	1,990	2,000	8,890	7,010	e6,200	14,700	5,270	2,130	2,060
16	1,420	2,850	3,440	2,160	1,990	8,830	7,790	e6,400	15,400	4,820	2,280	4,470
17	274	-419	2,640	2,780	2,120	9,060	6,620	e6,900	16,800	5,290	2,990	-1,680
18	2,190	6,210	2,800	2,830	2,080	8,960	6,920	7,620	17,200	5,970	4,110	1,750
19	-496	4,480	3,130	1,510	2,210	7,970	10,100	5,780	15,600	5,450	1,270	1,560
20	5,060	2,420	2,290	1,980	2,600	10,800	1,640	7,720	15,200	3,930	2,010	2,430
21	1,050	2,750	2,870	2,270	2,250	7,470	10,800	5,590	14,300	5,170	806	3,290
22	-295	1,720	2,950	1,860	2,020	7,100	5,430	7,280	15,400	4,190	2,640	2,360
23	3,590	7,060	3,190	e1,900	2,360	6,620	7,800	9,710	13,900	3,280	-923	930
24	581	9,200	2,460	1,960	2,290	7,400	3,920	10,800	14,800	1,990	1,390	5,050
25	3,780	1,650	2,130	1,890	2,270	6,930	7,350	8,920	13,100	4,600	3,990	-14
26	4,090	5,420	2,180	2,190	2,350	7,720	8,770	11,100	12,700	4,330	2,780	1,360
27	1,450	6,390	1,940	2,170	2,360	6,270	e6,200	10,200	11,800	3,470	2,560	1,760
28	2,960	8,770	3,320	1,960	2,470	7,380	e5,600	10,000	12,300	2,960	1,260	1,680
29	1,860	2,300	4,080	1,760	2,630	10,600	e5,500	8,190	11,500	3,120	1,900	971
30	-242	7,320	2,920	e1,800	---	9,310	e5,400	5,860	10,700	1,310	3,290	1,150
31	5,340	---	5,000	1,910	---	9,120	---	15,800	---	4,110	1,380	---
TOTAL	63,787	112,559.8	90,571	76,750	62,770	252,090	252,470	217,770	400,910	184,680	69,423	57,422
MEAN	2,058	3,752	2,922	2,476	2,164	8,132	8,416	7,025	13,360	5,957	2,239	1,914
MAX	5,340	9,200	6,130	5,550	2,630	12,200	14,100	15,800	17,200	11,500	5,410	5,050
MIN	-496	-2,250	-234	1,510	1,800	3,090	1,640	4,500	9,210	1,310	-2,300	-1,680
CFSM	0.39	0.71	0.55	0.47	0.41	1.53	1.58	1.32	2.52	1.12	0.42	0.36
IN.	0.45	0.79	0.63	0.54	0.44	1.77	1.77	1.53	2.81	1.29	0.49	0.40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2004, BY WATER YEAR (WY)

MEAN	3,108	3,828	3,280	2,544	2,775	5,143	7,886	6,454	6,237	4,583	3,149	2,931
MAX	6,411	6,201	6,811	3,673	3,930	8,132	12,870	11,050	13,360	13,440	5,915	5,541
(WY)	(1996)	(1996)	(1993)	(1992)	(1999)	(2004)	(1993)	(1993)	(2004)	(1993)	(1993)	(2000)
MIN	1,875	2,520	2,031	1,855	1,597	3,089	3,928	3,333	2,645	1,939	2,032	1,581
(WY)	(1999)	(1998)	(1999)	(2003)	(2003)	(2003)	(2000)	(1998)	(1994)	(1995)	(1998)	(1998)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1992 - 2004

ANNUAL TOTAL	1,179,678.8		1,841,202.8		
ANNUAL MEAN	3,232		5,031		4,328
HIGHEST ANNUAL MEAN					7,221
LOWEST ANNUAL MEAN					3,268
HIGHEST DAILY MEAN	13,300	May 11	17,200	Jun 18	18,600
LOWEST DAILY MEAN	-2,400	Apr 16	-2,300	Aug 12	-6,270
ANNUAL SEVEN-DAY MINIMUM	1,240	Aug 22	1,310	Oct 16	511
ANNUAL RUNOFF (CFSM)	0.609		0.947		0.815
ANNUAL RUNOFF (INCHES)	8.26		12.90		11.07
10 PERCENT EXCEEDS	6,430		10,800		8,520
50 PERCENT EXCEEDS	2,660		3,460		3,480
90 PERCENT EXCEEDS	1,030		1,390		1,420

(e) Estimated due to ice effect or missing record

## STREAMS TRIBUTARY TO LAKE MICHIGAN

## 04082500 LAKE WINNEBAGO AT OSHKOSH, WI

LOCATION.--Lat 44°00'35", long 88°31'38", in NE ¼ NE ¼ sec.25, T.18 N., R.16 E., Winnebago County, Hydrologic Unit 04030203, at 905 Bay Shore Drive, 800 ft east of mouth of the upper Fox River.

DRAINAGE AREA.--5,880 mi<sup>2</sup>, at lake outlet at Menasha Dam. Area of Lake Winnebago, 215 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1938 to current year in reports of Geological Survey. Records from July 1882 to September 1938 in files of Geological Survey and U.S. Army Corps of Engineers. A report on Fox River by U.S. Army Corps of Engineers, published as House Document No. 146, 67th Congress, 2nd session, contains semi-monthly records of inflow of Lake Winnebago for the period 1896-1917.

REVISED RECORD.--WDR WI-83-1: Drainage area.

GAGE.--Water-stage recorder. Nonrecording gage read once daily October 1938 to October 1978. Datum of gage is 745.05 ft above mean tide at New York City (levels by U.S. Army Corps of Engineers). Datum of Deuchman gage is 745.00 ft above mean tide at New York City.

REMARKS.--Lake elevations controlled by dams at Menasha and Neenah, which are operated in the interest of navigation. Crests of both dams are at elevation 746.73 ft. Present limits of regulation are from 21 ¼ in. above the crest of Menasha dam to crest during navigation season, plus additional 18 in. below crest during winter. Oshkosh staff gage gives true level of lake, while Deuchman gage readings are affected by loss of head in the channel between lake and dam. Data-collection platform and gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.33 ft (Deuchman gage) Nov. 8, 1881; minimum observed, -2.00 ft (Deuchman gage) Nov. 28, 1891.

EXTREMES FOR CURRENT YEAR.--Maximum daily mean gage height, 3.77 ft, June 19; minimum recorded, 1.48 ft, Apr. 19.

GAGE HEIGHT, FEET  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.57	2.46	2.39	2.46	2.08	1.64	2.02	2.23	3.15	3.46	2.97	3.01
2	2.56	2.47	2.44	2.46	2.07	1.71	2.01	2.26	3.23	3.40	2.99	3.01
3	2.52	2.57	2.43	2.46	2.07	1.74	2.00	2.29	3.22	3.34	3.02	3.01
4	2.57	2.58	2.44	2.49	2.05	1.74	2.10	2.26	3.21	3.27	3.04	3.00
5	2.57	2.57	2.45	2.48	2.02	1.87	2.11	2.36	3.19	3.28	3.01	2.99
6	2.54	2.54	2.46	2.47	2.03	1.94	2.11	2.36	3.17	3.20	2.98	2.95
7	2.53	2.47	2.45	2.46	2.01	1.97	2.13	2.42	3.15	3.13	2.99	3.00
8	2.53	2.48	2.45	2.44	1.99	2.00	2.13	2.54	3.12	3.08	2.97	3.01
9	2.52	2.44	2.47	2.43	1.97	2.00	2.13	2.69	3.16	3.06	2.94	2.98
10	2.52	2.44	2.53	2.43	1.95	2.01	2.17	2.75	3.19	3.00	2.95	2.95
11	2.49	2.46	2.52	2.41	1.94	2.04	2.17	2.78	3.46	2.95	2.94	2.93
12	2.51	2.37	2.56	2.40	1.92	2.06	2.13	2.77	3.55	2.90	2.96	2.95
13	2.51	2.49	2.52	2.39	1.90	2.05	2.10	2.82	3.62	2.89	2.93	2.94
14	2.54	2.52	2.50	2.37	1.88	2.08	2.08	2.87	3.68	2.93	2.93	2.91
15	2.51	2.51	2.48	2.36	1.86	2.09	2.06	2.89	3.72	2.95	2.92	2.88
16	2.50	2.52	2.47	2.35	1.84	2.08	2.02	2.84	3.71	2.95	2.90	2.90
17	2.48	2.53	2.47	2.35	1.82	2.07	2.01	2.79	3.76	2.96	2.93	2.92
18	2.46	2.54	2.46	2.35	1.80	2.07	1.98	2.82	3.76	2.93	2.92	2.89
19	2.47	2.56	2.45	2.32	1.77	2.07	1.90	2.79	3.77	2.91	2.93	2.87
20	2.43	2.56	2.44	2.30	1.77	2.05	2.02	2.81	3.75	2.92	2.92	2.84
21	2.49	2.58	2.43	2.28	1.77	2.06	1.90	2.87	3.75	2.91	2.92	2.82
22	2.48	2.59	2.42	2.26	1.75	2.02	1.98	2.88	3.73	2.94	2.87	2.84
23	2.46	2.66	2.42	2.25	1.75	1.99	1.96	3.02	3.72	2.94	2.92	2.83
24	2.46	2.63	2.43	2.24	1.73	1.97	2.03	3.07	3.69	2.93	2.89	2.78
25	2.46	2.66	2.43	2.22	1.70	1.96	1.99	3.06	3.68	2.90	2.89	2.81
26	2.45	2.64	2.42	2.21	1.67	1.96	1.95	3.03	3.65	2.90	2.91	2.80
27	2.45	2.60	2.41	2.19	1.65	1.95	2.05	3.01	3.63	2.91	3.01	2.80
28	2.40	2.53	2.43	2.17	1.63	1.94	2.07	2.99	3.59	2.90	3.05	2.81
29	2.43	2.53	2.44	2.15	1.62	1.97	2.11	2.96	3.54	2.90	3.03	2.77
30	2.45	2.44	2.46	2.13	---	2.02	2.19	2.98	3.50	2.94	2.99	2.76
31	2.43	---	2.45	2.10	---	2.02	---	3.00	---	2.94	3.01	---
MEAN	2.49	2.53	2.46	2.33	1.86	1.97	2.05	2.75	3.50	3.02	2.96	2.90
MAX	2.57	2.66	2.56	2.49	2.08	2.09	2.19	3.07	3.77	3.46	3.05	3.01
MIN	2.40	2.37	2.39	2.10	1.62	1.64	1.90	2.23	3.12	2.89	2.87	2.76

## 04084255 LAKE WINNEBAGO NEAR STOCKBRIDGE, WI

LOCATION.--Lat 44°04'17", long 88°19'52", Stockbridge Indian Reservation, Calumet County, Hydrologic Unit 04030203, on east shore of Lake Winnebago, 300 ft south of County Highway E and 1.6 mi west of Stockbridge.

DRAINAGE AREA.--5,880 mi<sup>2</sup>, at lake outlet at Menasha Dam. Area of Lake Winnebago, 215 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 745.05 ft above mean tide of New York City (levels by U. S. Army Corps of Engineers).

REMARKS.--Lake elevations controlled by dams at Menasha and Neenah, which are operated in the interest of navigation. Crests of both dams are at elevation 746.73 ft. Present limits of regulation are from 21 1/4 in. above the crest of Menasha dam to crest during navigation season, plus additional 18 in. below crest during winter. Data-collection platform and gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily mean gage height, 3.85 ft, July 9, 11, 1993; minimum observed, 0.30 ft, Mar. 1, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum daily mean gage height, 3.81 ft, June 20; minimum recorded, 1.55 ft, Mar. 1.

GAGE HEIGHT, FEET  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.57	2.41	2.55	2.40	2.03	1.59	1.93	2.15	3.16	3.42	2.97	2.98
2	2.54	2.40	2.40	2.41	2.01	1.67	1.95	2.16	3.17	3.33	2.99	2.98
3	2.60	2.36	2.37	2.45	2.02	1.69	1.95	2.24	3.18	3.27	2.95	2.98
4	2.53	2.52	2.38	2.42	1.99	1.69	2.02	2.28	3.17	3.27	2.92	2.98
5	2.49	2.60	2.37	2.46	1.97	1.84	2.04	2.29	3.16	3.19	2.93	2.97
6	2.48	2.57	2.39	2.44	1.98	1.90	2.06	2.31	3.14	3.16	2.96	3.03
7	2.48	2.53	2.39	2.41	1.97	1.96	2.08	2.25	3.15	3.13	2.97	3.00
8	2.48	2.43	2.40	2.39	1.93	1.96	2.07	2.45	3.12	3.10	2.96	2.91
9	2.46	2.43	2.40	2.38	1.92	1.96	2.10	2.63	3.08	3.02	3.01	2.93
10	2.46	2.41	2.44	2.37	1.90	1.96	2.09	2.72	3.06	2.96	3.05	2.94
11	2.46	2.43	2.59	2.36	1.89	2.01	2.06	2.71	3.29	2.91	3.02	2.94
12	2.54	2.52	2.51	2.36	1.87	2.01	2.04	2.73	3.51	2.87	2.90	2.93
13	2.49	2.61	2.46	2.34	1.84	1.99	2.03	2.79	3.60	2.88	2.88	2.91
14	2.48	2.49	2.45	2.32	1.82	2.05	2.02	2.82	3.66	2.91	2.89	2.91
15	2.53	2.45	2.42	2.30	1.81	2.05	1.98	2.83	3.68	2.93	2.88	2.95
16	2.49	2.46	2.44	2.29	1.79	2.03	1.95	2.80	3.69	2.91	2.89	2.94
17	2.46	2.46	2.43	2.30	1.77	2.02	1.93	2.79	3.72	2.87	2.91	2.86
18	2.45	2.49	2.42	2.30	1.74	2.02	2.03	2.75	3.77	2.89	2.95	2.85
19	2.40	2.56	2.41	2.28	1.72	2.01	2.01	2.72	3.76	2.91	2.95	2.83
20	2.42	2.54	2.38	2.25	1.73	2.02	1.85	2.75	3.81	2.89	2.91	2.83
21	2.43	2.49	2.37	2.23	1.73	2.01	1.89	2.73	3.77	2.90	2.89	2.83
22	2.41	2.40	2.37	2.22	1.69	1.97	1.88	2.81	3.76	2.92	2.91	2.82
23	2.41	2.65	2.38	2.20	1.69	1.93	1.91	2.90	3.76	2.88	2.81	2.80
24	2.41	2.89	2.38	2.19	1.67	1.90	1.88	3.04	3.77	2.86	2.82	2.86
25	2.42	2.73	2.38	2.17	1.65	1.89	1.94	3.03	3.72	2.86	2.86	2.81
26	2.45	2.61	2.37	2.15	1.62	1.91	2.05	3.02	3.66	2.86	2.88	2.78
27	2.41	2.56	2.35	2.15	1.60	1.89	2.04	2.97	3.62	2.87	2.99	2.75
28	2.44	2.58	2.37	2.13	1.58	1.89	2.08	2.93	3.61	2.90	2.95	2.68
29	2.44	2.56	2.39	2.10	1.57	1.95	2.12	2.89	3.56	2.92	2.96	2.74
30	2.35	2.49	2.41	2.08	---	1.91	2.10	2.81	3.50	2.91	2.98	2.74
31	2.40	---	2.41	2.06	---	1.92	---	3.02	---	2.94	2.97	---
MEAN	2.46	2.52	2.41	2.29	1.81	1.92	2.00	2.69	3.49	2.99	2.93	2.88
MAX	2.60	2.89	2.59	2.46	2.03	2.05	2.12	3.04	3.81	3.42	3.05	3.03
MIN	2.35	2.36	2.35	2.06	1.57	1.59	1.85	2.15	3.06	2.86	2.81	2.68

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084445 FOX RIVER AT APPLETON, WI

LOCATION.--Lat 44°14'53", long 88°25'23" in NW ¼ SE ¼ sec.34, T.21 N., R.17 E., Outagamie County, Hydrologic Unit 04030204, on left bank at south end of Lutz Park, approximately 2,600 ft upstream of Memorial Drive bridge at Appleton.

DRAINAGE AREA.--5,950 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1986 to current year.

GAGE.--Water-stage recorder. Side-looking velocity meter system.

REMARKS.--Records good (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	2,590	1,720	7,550	3,650	3,510	4,280	10,400	2,290	15,100	14,900	2,040	2,090
2	2,560	1,760	5,590	3,680	3,670	5,370	10,500	2,300	14,800	14,200	2,030	2,110
3	2,820	1,770	3,720	3,830	3,640	6,040	10,100	2,390	14,700	14,100	2,010	2,120
4	2,640	3,850	2,950	3,730	3,590	6,940	10,400	2,520	14,700	14,000	1,890	2,080
5	2,550	6,840	2,930	3,740	3,550	9,570	10,900	2,450	14,600	13,700	1,830	2,110
6	2,570	7,410	3,000	3,560	3,660	11,100	11,000	2,460	14,500	13,700	1,940	2,280
7	2,560	6,340	3,090	3,570	3,580	10,800	11,000	2,410	14,600	12,800	1,960	2,020
8	2,510	4,790	3,110	3,620	3,520	10,600	10,900	2,900	14,500	12,000	2,050	1,860
9	2,500	4,360	3,040	3,600	3,460	10,400	10,900	3,090	14,200	11,900	2,100	1,890
10	2,410	3,710	3,710	3,620	3,430	10,500	11,000	4,500	14,000	11,700	1,990	2,000
11	2,420	2,590	4,310	3,630	3,370	10,600	10,900	6,610	15,400	11,600	1,910	2,020
12	2,570	2,450	4,110	3,620	3,380	10,500	10,800	7,440	16,200	10,400	1,800	1,940
13	2,530	2,350	4,260	3,630	3,400	10,500	10,700	9,210	16,200	7,100	1,800	1,950
14	2,480	2,490	4,250	3,640	3,330	10,700	10,700	10,700	16,300	4,640	1,860	2,020
15	2,440	2,460	4,080	3,590	3,300	10,500	10,700	10,700	16,300	5,300	1,900	2,200
16	2,320	2,440	3,860	3,530	3,320	10,500	10,500	10,800	16,300	5,760	1,940	1,950
17	2,360	2,720	3,800	3,580	3,430	10,600	10,200	10,800	16,600	5,700	2,030	1,830
18	2,410	3,310	3,750	3,530	3,740	10,500	10,400	10,500	16,600	5,740	1,940	1,790
19	2,340	3,550	3,730	3,480	3,780	10,500	10,200	10,400	16,300	5,710	1,900	1,850
20	1,930	4,340	3,720	3,460	3,950	10,500	9,880	10,600	16,500	5,430	1,900	1,890
21	858	4,690	3,710	3,520	3,840	10,500	8,720	11,900	16,600	4,980	1,810	1,840
22	1,370	4,550	3,320	3,460	3,800	10,300	6,750	13,800	16,300	3,690	1,980	1,760
23	1,880	5,740	2,750	3,560	3,790	9,710	5,090	14,500	16,500	3,000	1,780	1,720
24	1,840	7,350	2,630	3,490	3,970	9,090	5,080	15,000	16,300	3,140	1,770	1,760
25	1,840	9,800	2,840	3,390	4,050	9,130	5,240	14,800	16,200	3,150	1,770	1,640
26	1,800	9,350	2,840	3,600	4,030	9,530	5,240	14,500	15,900	3,130	1,890	1,630
27	1,810	8,990	2,850	3,770	4,020	10,300	4,320	14,400	15,800	2,600	2,110	1,610
28	1,940	8,690	3,070	3,690	4,040	10,500	2,450	13,900	15,700	2,110	1,970	1,330
29	1,820	8,760	3,040	3,660	4,040	10,900	2,450	14,000	15,600	1,910	1,930	1,480
30	1,770	8,680	3,240	3,560	---	10,400	2,250	14,000	15,500	1,890	2,070	1,190
31	1,730	---	3,680	3,520	---	10,300	---	14,700	---	1,900	2,060	---
TOTAL	68,168	147,850	112,530	111,510	106,190	301,660	259,670	280,570	468,800	231,880	59,960	55,960
MEAN	2,199	4,928	3,630	3,597	3,662	9,731	8,656	9,051	15,630	7,480	1,934	1,865
MAX	2,820	9,800	7,550	3,830	4,050	11,100	11,000	15,000	16,600	14,900	2,110	2,280
MIN	858	1,720	2,630	3,390	3,300	4,280	2,250	2,290	14,000	1,890	1,770	1,190
CFSM	0.37	0.83	0.61	0.60	0.62	1.64	1.45	1.52	2.63	1.26	0.33	0.31
IN.	0.43	0.92	0.70	0.70	0.66	1.89	1.62	1.75	2.93	1.45	0.37	0.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2004, BY WATER YEAR (WY)

MEAN	3,748	4,597	4,056	3,686	3,699	5,072	6,492	5,975	6,171	4,039	2,840	3,124
MAX	13,510	7,863	7,509	5,575	5,422	9,731	11,920	11,900	15,630	15,110	6,259	8,899
(WY)	(1987)	(1996)	(1993)	(1987)	(1987)	(2004)	(1993)	(1993)	(2004)	(1993)	(1993)	(1986)
MIN	1,413	2,312	2,541	2,535	1,862	2,445	2,688	2,682	1,243	944	971	1,226
(WY)	(2000)	(2000)	(1990)	(1990)	(2003)	(2000)	(1990)	(1988)	(1988)	(1988)	(1988)	(1988)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1986 - 2004

ANNUAL TOTAL	1,271,848	2,204,748		
ANNUAL MEAN	3,485	6,024	4,423	
HIGHEST ANNUAL MEAN			8,107	1993
LOWEST ANNUAL MEAN			2,995	1988
HIGHEST DAILY MEAN	9,800	Nov 25	16,600	Jun 17
LOWEST DAILY MEAN	858	Oct 21	858	Oct 21
ANNUAL SEVEN-DAY MINIMUM	1,370	Jan 28	1,520	Sep 24
ANNUAL RUNOFF (CFSM)	0.586		1.01	
ANNUAL RUNOFF (INCHES)	7.95		13.78	
10 PERCENT EXCEEDS	6,780		14,200	8,660
50 PERCENT EXCEEDS	2,820		3,680	3,630
90 PERCENT EXCEEDS	1,700		1,890	1,710

04084468 GARNERS CREEK AT PARK STREET AT KAUKAUNA, WI

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January to September 2004.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January to August 2004 (discontinued).

INSTRUMENTATION.--Continuous specific conductance recorder from January to September 2004. Sensor located near midstream.

REMARKS.--Records for specific conductance were faulty May 5.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 4,630  $\mu$ S/cm, Feb. 24, 2004; minimum, 274  $\mu$ S/cm, May 23, 2004.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 4,630  $\mu$ S/cm, Feb. 24; minimum, 274  $\mu$ S/cm, May 23.

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

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	1,380	1,240	1,300
7	---	---	---	---	---	---	---	---	---	1,470	1,380	1,430
8	---	---	---	---	---	---	---	---	---	1,560	1,470	1,520
9	---	---	---	---	---	---	---	---	---	1,550	1,480	1,520
10	---	---	---	---	---	---	---	---	---	1,510	1,440	1,490
11	---	---	---	---	---	---	---	---	---	1,440	1,390	1,420
12	---	---	---	---	---	---	---	---	---	1,390	1,350	1,370
13	---	---	---	---	---	---	---	---	---	1,480	1,350	1,430
14	---	---	---	---	---	---	---	---	---	1,570	1,440	1,520
15	---	---	---	---	---	---	---	---	---	1,460	1,370	1,410
16	---	---	---	---	---	---	---	---	---	1,370	1,360	1,370
17	---	---	---	---	---	---	---	---	---	1,420	1,360	1,380
18	---	---	---	---	---	---	---	---	---	1,450	1,420	1,420
19	---	---	---	---	---	---	---	---	---	1,560	1,450	1,540
20	---	---	---	---	---	---	---	---	---	1,700	1,550	1,580
21	---	---	---	---	---	---	---	---	---	1,900	1,700	1,810
22	---	---	---	---	---	---	---	---	---	1,900	1,840	1,880
23	---	---	---	---	---	---	---	---	---	1,840	1,720	1,800
24	---	---	---	---	---	---	---	---	---	1,720	1,630	1,670
25	---	---	---	---	---	---	---	---	---	1,630	1,570	1,600
26	---	---	---	---	---	---	---	---	---	1,570	1,550	1,560
27	---	---	---	---	---	---	---	---	---	1,550	1,520	1,540
28	---	---	---	---	---	---	---	---	---	1,520	1,480	1,500
29	---	---	---	---	---	---	---	---	---	1,490	1,470	1,480
30	---	---	---	---	---	---	---	---	---	1,490	1,470	1,480
31	---	---	---	---	---	---	---	---	---	1,540	1,490	1,520
MONTH	---	---	---	---	---	---	---	---	---	1,900	1,240	1,520





04084500 FOX RIVER AT RAPIDE CROCHE DAM, NEAR WRIGHTSTOWN, WI

LOCATION.--Lat 44°19'03", long 88°11'50", in SE ¼ sec.4, T.21 N., R.19 E., Outagamie County, Hydrologic Unit 04030204, at Rapide Croche Dam, 2.0 mi upstream from Wrightstown, and 18 mi upstream from mouth.

DRAINAGE AREA.--6,010 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1896 to September 1917 (monthly discharge only), October 1917 to current year.

REVISED RECORD.--WDR WI-80-1: Drainage area. WDR WI-81-1: 1980.

GAGE.--Recording headwater and tailwater gages and electric generation are read 24 times a day and used to compute the discharge records.

REMARKS.--Flow regulated by storage in Lake Winnebago (see sta. 04082500 and 04084255). Daily discharges determined from records of flow through turbines, head, gate openings, and lockages through navigation canal. Usually less than about 20 ft<sup>3</sup>/s is diverted into basin from Wisconsin River at Portage Canal throughout the year.

COOPERATION.--Figures of daily discharge furnished by Kaukauna Electric and Water Department. Records reviewed by 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	2,580	1,630	7,160	4,010	3,810	4,800	11,100	2,330	14,400	13,800	1,930	2,000
2	2,470	1,590	5,810	4,020	3,810	5,820	11,200	2,310	14,000	13,400	1,820	2,180
3	2,860	1,790	3,650	4,120	3,820	6,510	11,100	2,270	14,200	13,400	1,870	2,160
4	2,460	3,450	2,790	3,880	3,580	6,920	10,700	2,460	14,000	13,400	1,950	2,150
5	2,470	7,010	3,000	3,520	3,640	10,300	11,600	2,240	13,900	12,500	1,540	2,170
6	2,460	8,100	2,900	3,680	3,680	10,900	12,300	2,420	13,600	13,800	1,860	2,340
7	2,500	7,250	3,120	3,440	3,460	11,200	11,800	2,490	13,600	12,900	2,030	2,080
8	2,460	5,280	3,060	4,020	3,540	11,000	11,700	3,080	14,400	12,000	2,150	1,880
9	2,430	4,420	3,050	3,840	3,600	10,100	11,800	3,500	14,000	11,800	2,190	1,760
10	2,460	4,300	3,820	3,560	3,500	11,300	11,800	3,970	13,400	11,600	2,010	2,010
11	2,250	2,740	4,240	3,550	3,580	11,300	11,500	6,800	14,800	11,400	1,920	2,080
12	2,390	2,410	4,180	3,690	3,470	10,800	11,600	7,690	15,700	10,400	1,870	1,770
13	2,500	2,430	4,360	3,650	3,380	10,500	11,600	9,550	15,700	7,270	1,600	1,970
14	2,220	2,400	4,410	3,520	3,300	11,000	11,700	10,800	15,500	4,700	1,840	1,930
15	2,240	2,460	4,350	3,510	3,360	10,800	11,600	10,900	15,500	5,070	1,920	2,060
16	2,160	2,380	4,180	3,680	3,530	10,700	11,300	10,900	15,500	5,850	1,980	1,620
17	2,280	2,530	4,160	3,700	3,670	10,700	10,900	10,900	16,100	5,790	2,130	1,930
18	2,470	3,770	3,700	3,450	3,870	10,700	10,700	10,500	16,400	5,800	1,730	2,100
19	2,210	3,620	3,940	3,640	3,990	10,900	11,100	10,500	15,800	5,940	2,020	1,910
20	2,010	4,500	3,820	3,500	4,130	10,900	10,500	10,900	15,800	5,670	1,960	2,150
21	650	5,010	4,120	3,610	4,100	10,700	9,300	12,200	15,900	5,300	1,770	1,980
22	1,110	4,680	3,630	3,360	4,100	10,900	8,200	13,700	15,700	3,860	2,090	1,760
23	1,780	6,760	2,830	3,390	4,130	10,600	5,270	14,900	16,000	2,780	1,800	1,690
24	1,780	5,560	2,530	3,430	4,320	9,560	5,350	15,100	16,000	3,410	1,690	1,630
25	1,890	7,940	2,860	3,420	4,180	10,300	5,490	14,700	15,800	3,120	1,830	1,460
26	1,710	8,740	2,960	3,650	4,360	10,100	5,710	13,900	15,400	3,300	1,890	1,610
27	1,700	8,510	3,030	3,870	4,360	11,500	5,270	14,000	15,000	2,680	2,200	1,530
28	1,930	8,210	3,390	3,810	4,430	11,600	1,540	13,400	14,900	1,900	1,900	1,180
29	1,830	8,200	3,120	3,730	4,660	12,400	2,600	13,900	14,800	1,760	1,690	1,400
30	1,780	8,200	3,470	3,550	---	11,500	2,130	14,100	14,300	1,630	2,120	1,120
31	1,690	---	3,990	3,710	---	11,000	---	14,600	---	1,620	1,950	---
TOTAL	65,730	145,870	115,630	113,510	111,360	317,310	278,460	281,010	450,100	227,850	59,250	55,610
MEAN	2,120	4,862	3,730	3,662	3,840	10,240	9,282	9,065	15,000	7,350	1,911	1,854
MAX	2,860	8,740	7,160	4,120	4,660	12,400	12,300	15,100	16,400	13,800	2,200	2,340
MIN	650	1,590	2,530	3,360	3,300	4,800	1,540	2,240	13,400	1,620	1,540	1,120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 2004, BY WATER YEAR (WY)

MEAN	3,297	3,982	3,984	3,974	4,038	4,974	7,181	6,129	5,200	3,489	2,665	2,819
MAX	14,230	12,740	9,879	7,831	7,831	12,440	19,360	20,160	15,000	15,600	9,623	11,020
(WY)	(1987)	(1985)	(1983)	(1960)	(1939)	(1973)	(1929)	(1960)	(2004)	(1993)	(1924)	(1938)
MIN	728	1,242	1,562	1,432	1,768	1,596	1,590	1,260	1,098	983	761	709
(WY)	(1933)	(1931)	(1959)	(1977)	(1977)	(1964)	(1954)	(1931)	(1931)	(1931)	(1936)	(1933)

SUMMARY STATISTICS

	FOR 2003 CALENDAR YEAR	FOR 2004 WATER YEAR	WATER YEARS 1896 - 2004
ANNUAL TOTAL	1,266,804	2,221,690	
ANNUAL MEAN	3,471	6,070	4,318
HIGHEST ANNUAL MEAN			8,427
LOWEST ANNUAL MEAN			1,626
HIGHEST DAILY MEAN	9,500	May 19	24,000
LOWEST DAILY MEAN	377	Jan 29	138
ANNUAL SEVEN-DAY MINIMUM	1,190	Sep 4	499
10 PERCENT EXCEEDS	6,770		7,890
50 PERCENT EXCEEDS	2,820		3,590
90 PERCENT EXCEEDS	1,460		1,670

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04085046 APPLE RIVER AT SNIDERVILLE, WI

LOCATION.--Lat 44°21'18", long 88°11'28", in NW ¼ NW ¼ sec.27, T.22 N., R.19 E., Brown County, Hydrologic Unit 04030204, on left bank 500 ft downstream of County Trunk Highway U, 2.0 mi upstream from Christy Brook and 2.0 mi north of Plum Creek on County Trunk Highway U.

DRAINAGE AREA.--45.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 2003 to September 2004.

GAGE.--Water-stage recorder. Elevation of gage is 640 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges and those rated under 0.5 cfs, which are poor (see page 11).

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	1.2	2.5	11	e13	e0.80	e480	45	4.1	244	3.5	0.75	1.3
2	0.98	2.6	12	e18	e0.84	e360	30	3.9	107	2.7	0.79	1.1
3	1.4	3.3	8.7	e36	e0.90	e240	22	3.5	57	2.3	0.92	0.80
4	2.7	61	6.7	e24	e0.90	169	17	3.1	33	3.3	0.74	0.50
5	5.3	80	6.0	e14	e0.90	818	14	2.9	22	4.5	0.73	0.35
6	3.7	31	5.5	e12	e0.92	967	12	2.6	16	8.4	0.58	0.41
7	2.5	15	5.1	e10	e0.96	325	12	2.4	12	22	0.50	0.37
8	1.9	8.6	5.1	e10	e1.0	185	11	19	9.4	13	0.47	0.35
9	1.4	6.5	5.2	e10	e1.1	103	9.5	70	142	8.4	0.40	0.60
10	1.6	4.7	e30	e12	e1.1	70	8.4	42	227	6.2	0.42	0.65
11	2.1	4.9	e52	e14	e1.2	81	7.4	27	288	4.8	0.43	0.52
12	3.1	7.0	e62	e12	e1.3	44	6.5	19	378	3.9	0.96	0.54
13	3.9	6.0	e66	e10	e1.4	39	5.9	158	200	5.9	0.75	0.32
14	7.6	5.3	e30	e9.8	e1.4	47	5.4	174	278	15	0.61	0.26
15	5.8	4.5	e20	e9.2	e1.6	50	5.0	157	109	8.8	0.41	0.18
16	3.8	4.0	e16	e6.8	e1.6	32	5.0	68	56	5.0	0.31	0.21
17	3.5	3.6	e14	e5.8	e1.8	23	5.4	34	175	3.5	0.37	0.18
18	3.1	6.1	e12	e4.6	e2.0	20	5.6	22	110	2.5	0.44	0.18
19	2.8	35	e9.1	e2.8	e2.2	26	5.5	16	50	2.0	1.3	0.32
20	2.8	24	e7.0	e2.0	e2.6	56	5.1	59	27	1.6	1.7	0.62
21	3.0	14	e6.4	e1.8	e6.0	50	5.9	91	17	1.5	1.7	0.44
22	2.6	9.0	e6.4	e1.6	e7.8	29	9.5	214	15	1.3	1.2	0.27
23	2.3	567	e6.6	e1.0	e8.4	22	7.7	603	12	1.1	1.0	0.19
24	2.0	455	e5.8	e0.96	e18	20	6.2	836	11	0.89	0.83	0.15
25	2.0	118	e5.4	e0.94	e72	31	6.1	216	9.7	0.72	0.76	0.15
26	2.2	58	e4.8	e0.94	e100	151	9.5	105	7.2	0.61	0.83	0.11
27	2.4	32	e5.1	e0.96	e140	131	9.1	60	5.6	0.50	1.4	0.08
28	2.7	24	e21	e0.93	e220	112	6.8	41	5.2	0.42	5.8	0.06
29	2.6	19	e44	e0.86	e380	426	5.5	31	4.9	0.39	4.4	0.06
30	2.6	14	e29	e0.82	---	142	4.6	31	4.4	0.39	2.5	0.05
31	2.4	---	e20	e0.82	---	74	---	374	---	0.49	1.7	---
TOTAL	87.98	1,625.6	537.9	247.63	978.72	5,323	308.6	3,489.5	2,632.4	135.61	35.70	11.32
MEAN	2.84	54.2	17.4	7.99	33.7	172	10.3	113	87.7	4.37	1.15	0.38
MAX	2.84	567	66	36	380	967	45	836	378	22	5.8	1.3
MIN	0.98	2.5	4.8	0.82	0.80	20	4.6	2.4	4.4	0.39	0.31	0.05
CFSM	0.06	1.18	0.38	0.17	0.74	3.75	0.22	2.46	1.92	0.10	0.03	0.01
IN.	0.07	1.32	0.44	0.20	0.79	4.32	0.25	2.83	2.14	0.11	0.03	0.01

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

MEAN	2.84	54.2	17.4	7.99	33.7	172	10.3	113	87.7	4.37	1.15	0.38
MAX	2.84	567	66	36	380	967	45	836	378	22	5.8	1.3
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)
MIN	0.98	2.5	4.8	0.82	0.80	20	4.6	2.4	4.4	0.39	0.31	0.05
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

ANNUAL TOTAL									15,413.96			
ANNUAL MEAN									42.1			
HIGHEST DAILY MEAN				567	Nov 23				967	Mar 6		
LOWEST DAILY MEAN	0.98			0.98	Oct 2				0.05	Sep 30		
ANNUAL SEVEN-DAY MINIMUM	2.3			2.3	Oct 22				0.09	Sep 24		
MAXIMUM PEAK FLOW									1,820	Mar 6		
MAXIMUM PEAK STAGE									8.34	Mar 6		
ANNUAL RUNOFF (CFSM)									0.920			
ANNUAL RUNOFF (INCHES)									12.52			
10 PERCENT EXCEEDS									109			
50 PERCENT EXCEEDS									5.8			
90 PERCENT EXCEEDS									0.51			

(e) Estimated due to ice effect or missing record



## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2003 to September 2004.

PERIOD OF DAILY RECORD.--

SUSPENDED-SOLIDS DISCHARGE: October 2003 to September 2004.

TOTAL-PHOSPHORUS DISCHARGE: October 2003 to September 2004.

INSTRUMENTATION.--Water-quality sampler October 2003 to September 2004.

REMARKS.--Chemical analyses by the Green Bay Metropolitan Sewerage District Laboratory. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 2,600 tons, Nov. 23, 2003; minimum daily, 0.001 tons, Sept. 26-30, 2004.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 8,840 lbs, Nov. 23, 2004; minimum daily, 0.02 lbs, Sept. 30, 2004.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 2,600 tons, Nov. 23; minimum daily, 0.001 tons, Sept. 26-30.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 8,840 lbs, Nov. 23; minimum daily, 0.02 lbs, Sept. 30.

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	0.010	0.030	2.11	0.17	0.009	111	5.18	0.060	75.3	0.23	0.020	0.030
2	0.010	0.040	2.08	0.23	0.009	178	2.78	0.050	15.7	0.18	0.020	0.020
3	0.020	0.050	1.24	e4.78	0.010	87.4	1.63	0.050	5.59	0.15	0.020	0.020
4	e0.030	12.6	0.81	0.30	0.010	53.8	0.99	0.040	3.31	0.21	0.020	0.010
5	e0.10	6.32	0.62	0.18	0.010	1,130	0.64	0.040	2.49	0.28	0.020	0.007
6	0.050	1.83	0.49	0.15	0.010	690	0.45	0.040	1.98	0.69	0.010	0.007
7	0.030	1.07	0.38	0.12	0.010	184	0.35	0.030	1.63	3.41	0.010	0.006
8	0.030	0.58	0.33	0.12	0.010	87.4	0.26	1.17	1.40	1.49	0.010	0.006
9	0.020	0.41	0.50	0.12	0.010	39.7	0.20	6.06	193	0.68	0.010	0.010
10	0.020	0.28	6.62	0.15	0.010	21.9	0.16	2.07	142	0.36	0.010	0.010
11	0.020	0.27	e10.0	0.17	0.010	20.6	0.13	1.49	197	0.26	0.010	0.008
12	0.030	0.36	e14.3	0.15	0.010	9.16	0.10	1.37	216	0.20	0.030	0.008
13	e0.050	0.29	e16.2	0.12	0.020	6.67	0.080	159	158	e0.47	0.020	0.005
14	e0.21	0.24	1.73	0.12	0.020	6.40	0.070	58.7	267	e2.14	0.020	0.004
15	e0.12	0.20	0.73	0.11	0.020	5.75	0.070	25.1	52.1	e0.90	0.010	0.003
16	0.040	0.16	0.37	0.080	0.020	2.99	0.070	4.84	23.7	0.22	0.010	0.003
17	0.040	0.14	0.21	0.070	0.030	1.79	0.070	1.84	141	0.15	0.010	0.002
18	0.040	0.25	0.16	0.050	0.030	1.26	0.080	1.18	32.8	0.11	0.020	0.002
19	0.030	3.35	0.12	0.030	0.040	1.31	0.070	0.91	6.96	0.080	0.050	0.004
20	0.030	0.94	0.090	0.020	0.050	2.33	0.070	13.9	2.76	0.060	0.060	0.008
21	0.040	0.45	0.090	0.020	0.12	1.74	0.080	19.3	1.34	0.050	0.060	0.006
22	0.030	0.30	0.080	0.020	0.17	0.80	e0.28	84.6	1.12	0.040	0.040	0.003
23	0.030	2,600	0.090	0.010	0.20	0.50	0.10	1,190	0.94	0.040	0.030	0.002
24	0.030	1,140	0.080	0.010	0.46	0.40	0.080	880	0.80	0.030	0.030	0.002
25	0.030	60.9	0.070	0.010	1.97	1.66	0.080	65.3	0.71	0.020	0.020	0.002
26	0.030	25.5	0.060	0.010	3.04	54.9	e0.28	16.8	0.52	0.020	0.020	0.001
27	0.030	12.1	0.070	0.010	5.29	23.4	e0.26	8.83	0.40	0.020	0.040	0.001
28	0.040	7.66	e1.62	0.010	17.3	55.7	0.090	5.97	0.37	0.010	e0.46	0.001
29	0.040	5.01	e7.15	0.010	78.3	532	0.070	4.42	0.34	0.010	e2.90	0.001
30	0.030	3.25	e3.09	0.009	---	32.1	0.060	8.91	0.30	0.010	0.060	0.001
31	0.030	---	0.26	0.010	---	10.7	---	460	---	0.010	0.040	---
TOTAL	1.290	3,884.580	71.750	7.369	107.198	3,355.36	14.830	3,022.070	1,546.56	12.530	4.090	0.193
WTR YR	2004	TOTAL	12,027.820									

e Estimated

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04085046 APPLE CREEK AT SNIDERVILLE, 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	0.94	1.56	15.8	11.3	0.69	1,470	42.9	1.80	450	6.98	1.07	1.26
2	0.80	1.36	17.7	15.5	0.73	1,280	28.4	1.73	171	5.31	1.07	1.11
3	1.11	1.69	11.9	e107	0.78	649	20.5	1.56	109	4.34	1.18	0.81
4	2.18	195	8.84	20.8	0.78	422	15.5	1.40	62.0	6.02	0.89	0.51
5	e6.18	160	7.64	12.1	0.78	3,880	12.3	1.31	41.7	7.99	0.84	0.37
6	e3.62	56.5	6.85	10.4	0.79	3,010	10.7	1.20	29.5	14.5	0.65	0.44
7	1.92	31.8	6.10	8.65	0.83	807	10.2	1.13	21.7	e45.3	0.56	0.40
8	1.43	18.1	5.92	8.64	0.86	429	9.19	20.6	16.6	e25.3	0.52	0.39
9	1.04	13.7	6.19	8.64	0.95	222	7.11	90.1	627	14.8	0.44	0.68
10	1.04	9.73	70.9	10.4	0.95	139	5.48	56.0	555	11.1	0.46	0.71
11	1.17	10.1	e186	12.1	1.04	149	4.22	44.9	551	8.84	0.47	0.55
12	1.50	14.2	e241	10.4	1.13	75.6	3.24	20.1	852	7.36	e1.40	0.55
13	e3.92	12.0	126	8.65	1.28	62.5	2.63	385	527	11.5	0.80	0.31
14	e10.6	10.7	47.7	8.47	1.35	68.4	2.32	204	904	e29.6	0.64	0.24
15	e7.07	8.97	26.2	7.95	1.64	69.1	2.14	104	307	e16.4	0.44	0.16
16	2.54	7.85	17.4	5.89	1.74	40.7	2.15	30.6	148	10.5	0.33	0.18
17	2.85	6.95	12.7	5.02	2.07	27.5	2.32	20.0	626	7.41	0.39	0.14
18	3.10	11.7	10.4	3.98	2.44	22.1	2.42	14.6	255	5.60	0.45	0.14
19	3.49	e103	7.88	2.43	2.84	26.2	2.39	13.6	101	4.57	e1.96	0.24
20	4.15	e58.7	6.06	1.73	3.55	e118	2.22	124	62.5	3.75	e2.64	0.45
21	5.56	17.7	5.53	1.56	8.67	e103	2.54	159	44.2	3.44	e2.64	0.30
22	5.80	9.42	5.53	1.38	12.0	23.2	e14.0	454	37.9	3.05	1.20	0.18
23	5.95	8,840	5.70	0.87	13.7	16.4	3.34	3,510	31.4	2.45	1.02	0.12
24	4.55	3,580	5.01	0.83	31.0	14.7	2.66	1,410	26.5	1.94	0.82	0.09
25	3.82	215	4.67	0.81	131	28.7	2.64	155	23.2	1.48	0.75	0.08
26	3.56	101	4.15	0.81	189	255	e14.0	63.0	16.7	1.20	0.81	0.06
27	3.31	54.5	4.41	0.83	286	163	e13.3	34.4	12.6	0.94	1.38	0.04
28	3.23	39.3	e48.1	0.80	650	300	2.94	22.6	11.5	0.75	e10.3	0.03
29	2.64	29.1	e145	0.74	1,210	1,440	2.39	16.3	10.3	0.65	e7.60	0.03
30	2.20	21.5	e77.8	0.71	---	158	2.02	46.8	9.00	0.61	e4.05	0.02
31	1.76	---	17.3	0.79	---	71.4	---	1,410	---	0.73	1.61	---
TOTAL	103.03	13,641.13	1,162.38	290.18	2,558.59	15,540.5	248.16	8,418.73	6,640.30	264.41	49.38	10.59
WTR YR	2004	TOTAL	48,927.38									

e Estimated

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085046 APPLE CREEK AT SNIDERVILLE, 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...	0940	--	1.5	10	<5	.040	.140	--
13...	1850	--	4.2	50	<4	--	.080	--
23...	1034	--	2.4	10	<5	.420	.500	--
NOV								
04...	0950	--	41	50	72	1.00	1.27	--
04...	1135	--	59	50	114	.390	.750	--
04...	1350	--	82	50	102	.420	.730	--
04...	1835	--	107	50	82	.390	.600	--
05...	0635	--	99	50	34	.310	.430	--
05...	1045	--	83	50	14	.300	.370	--
06...	1012	--	31	10	19	.220	.280	--
06...	1200	--	30	50	31	.180	.440	--
06...	1201	--	30	10	30	.330	.460	--
20...	0955	--	25	10	12	--	.350	--
23...	0345	--	45	50	368	--	.960	--
23...	0605	--	198	50	1,170	--	2.32	1,230
23...	0755	--	396	50	1,220	--	2.61	--
23...	1315	--	745	50	1,160	.390	1.97	1,080
23...	1845	--	927	50	2,460	--	4.63	--
24...	0240	--	805	50	1,850	.410	2.91	--
24...	0745	--	563	50	780	--	1.08	--
24...	1150	--	392	50	440	.250	.680	--
24...	1151	--	392	10	144	.260	.490	--
24...	1315	--	351	50	264	--	.750	--
25...	0245	--	154	50	220	--	.370	--
DEC								
10...	2025	30	--	50	120	--	.640	--
17...	1634	14	--	10	5	.120	.160	--
FEB								
12...	1334	1.3	--	10	<4	.130	.160	--
26...	1345	100	--	10	11	.320	.360	--
27...	0650	140	--	50	16	--	.350	--
27...	2310	140	--	50	15	--	.530	--
28...	1920	220	--	50	45	--	.650	--
29...	1610	380	--	50	106	--	.660	--
29...	1905	380	--	50	111	--	.640	--
29...	2050	380	--	50	90	.370	.640	--
MAR								
01...	1040	480	--	50	62	.290	.500	--
01...	1041	480	--	10	56	.360	.530	--
02...	0001	360	--	50	182	--	.800	--
02...	0245	360	--	50	190	--	.650	350
02...	1510	360	--	50	225	.250	.840	--
02...	1511	360	--	10	254	.220	.830	--
03...	0310	240	--	50	158	.190	.500	--
03...	1135	240	--	50	145	.150	.580	--
03...	1136	240	--	10	113	.190	.450	--
05...	0915	--	335	50	287	--	.760	--
05...	1210	--	724	50	618	--	1.34	--
05...	1515	--	1,090	50	642	.380	1.45	--
05...	2125	--	1,760	50	610	--	.700	646
06...	0955	--	1,040	50	190	.220	.630	--
06...	0956	--	1,040	10	172	.190	.540	--
06...	2100	--	367	50	262	--	.530	--
24...	1045	--	19	10	7	.120	.130	--
26...	0600	--	91	50	119	--	.290	--
26...	2155	--	191	50	146	--	.400	266
27...	2155	--	105	50	34	--	.160	--
28...	2200	--	213	50	496	.150	1.01	--
28...	2345	--	305	50	644	.180	.910	--
29...	0500	--	523	50	600	.140	.960	747
30...	0010	--	218	50	150	--	.300	--
30...	1110	--	136	10	66	.080	.180	--
APR								
08...	1000	--	12	10	9	.120	.160	--
13...	1400	--	5.3	10	<5	.040	.080	--
29...	1130	--	5.3	10	<5	--	.080	--

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04085046 APPLE CREEK AT SNIDERVILLE, WI—Continued

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

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Residue total at 105 deg. C, suspended, mg/L (00530)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)	Suspended sediment concentration mg/L (80154)
MAY							
08...	2005	38	50	28	--	.230	--
09...	0135	74	50	52	.220	.290	--
10...	0135	53	50	19	--	.230	--
11...	0955	28	10	20	.300	.350	--
13...	0730	47	50	32	--	.130	--
13...	0955	145	50	198	--	.240	--
13...	1330	240	50	548	.070	.610	--
13...	1331	240	10	528	.070	.590	--
14...	1330	157	50	83	--	.180	--
15...	0130	195	50	88	--	.160	--
16...	1330	61	50	24	--	.080	--
17...	1615	30	10	19	--	.120	--
20...	0620	38	50	108	--	.520	--
21...	0225	97	50	90	.180	.350	--
21...	1425	76	50	68	--	.330	--
22...	1035	227	50	204	.190	.480	--
22...	2235	230	50	128	.180	.380	--
23...	0850	520	50	1,350	--	1.73	--
23...	1335	828	50	1,280	--	1.72	1,960
23...	1635	820	50	632	.180	1.08	1,580
23...	1636	819	10	572	--	.900	--
23...	2250	962	50	508	--	.820	--
24...	1050	899	50	330	.150	.250	424
25...	0115	353	50	162	--	.160	--
25...	1900	159	50	86	--	.130	--
26...	1139	105	10	55	--	.110	--
30...	2250	75	50	262	--	.560	--
31...	0150	243	50	448	--	1.28	--
31...	1220	418	50	568	--	.800	--
31...	1855	475	50	266	.210	.560	50
JUN							
01...	0350	328	50	138	.180	.400	--
02...	0110	140	50	72	--	.300	--
03...	0930	59	10	34	--	.360	--
09...	1255	80	50	126	--	.350	--
09...	1420	167	10	170	.180	.370	--
09...	1450	186	50	242	.190	.480	--
09...	1905	325	50	1,060	--	1.57	1,200
09...	2200	400	50	516	.110	.810	--
10...	0630	276	50	214	--	.480	--
11...	1205	265	50	322	.240	.280	--
11...	1935	453	50	292	.160	.480	--
12...	0735	444	50	222	--	.460	298
13...	1400	164	50	238	--	.440	--
14...	0040	521	50	620	--	.830	--
14...	0900	300	50	336	--	.600	--
16...	2355	63	50	384	--	.720	--
17...	1700	207	50	332	.250	.760	--
18...	1700	88	50	70	--	.370	--
21...	1000	17	10	29	--	.500	--
JUL							
07...	1245	25	10	58	.180	.310	--
22...	1237	1.2	10	13	--	.450	--
AUG							
05...	1555	.70	10	9	.180	.210	--
19...	1015	1.6	10	14	--	.190	--
SEP							
09...	1502	.70	10	6	.190	.210	--
29...	1425	.07	10	4	.050	.090	--



## STREAMS TRIBUTARY TO LAKE MICHIGAN

04085068 ASHWAUBENON CREEK NEAR LITTLE RAPIDS, WI

LOCATION.--Lat 44°24'51", long 88°07'37" in NW ¼ NW ¼ sec.6, T.22 N., R.20 E., Brown County, Hydrologic Unit 04030204, on left bank 10 ft downstream from Creamery Road bridge and 2 mi north of Little Rapids.

DRAINAGE AREA.--19.9 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1976 to November 1977 (fragmentary, instantaneous discharge only, discontinued), October 2003 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 620 ft above NGVD of 1929.

REMARKS.--Records good, except those that are estimated and those under 0.5 cfs, which are poor (see page 11).

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	0.07	0.76	3.6	e2.7	e0.26	e200	9.2	1.3	138	0.89	0.30	0.11
2	0.08	0.77	3.0	e4.3	e0.30	e250	6.1	1.2	22	0.77	0.27	0.09
3	0.27	0.93	2.1	e22	e0.28	e89	4.8	1.1	7.8	0.74	0.29	0.09
4	0.31	6.1	1.7	e15	e0.26	e57	4.0	1.1	4.2	2.4	0.21	0.09
5	0.33	19	1.6	e8.9	e0.25	291	3.2	1.1	3.0	2.4	0.17	0.09
6	0.22	6.0	1.5	e2.7	e0.28	204	3.1	1.0	2.5	2.0	0.12	0.16
7	0.17	2.8	1.4	e1.7	e0.29	104	3.1	0.98	2.1	2.2	0.13	0.10
8	0.16	1.3	1.4	e1.9	e0.30	55	3.0	13	1.8	1.7	0.14	0.07
9	0.21	0.77	e1.4	e1.7	e0.31	25	2.7	49	50	1.3	0.18	0.07
10	0.33	0.60	e15	e1.5	e0.31	17	2.4	19	29	1.1	0.15	0.11
11	0.37	0.69	e23	e1.2	e0.32	e17	2.3	9.0	107	1.00	0.16	0.08
12	0.54	0.77	e8.0	e0.88	e0.31	15	2.1	9.0	109	0.91	0.18	0.07
13	0.55	0.67	e3.7	e0.73	e0.35	11	1.8	62	71	0.91	0.19	0.08
14	0.66	0.60	3.5	e0.64	e0.35	e13	1.7	108	294	0.86	0.17	0.08
15	0.65	0.55	2.8	e0.51	e0.38	e14	1.8	67	43	0.77	0.17	0.10
16	0.63	0.52	2.8	e0.48	e0.39	e9.8	1.8	17	10	0.67	0.17	0.14
17	0.58	0.46	2.9	e0.54	e0.46	7.5	1.9	6.7	178	0.61	0.24	0.12
18	0.56	0.70	2.5	e0.50	e0.51	6.0	1.9	4.0	40	0.54	0.26	0.09
19	0.54	2.0	2.1	e0.45	e0.56	10	1.9	2.9	9.4	0.49	0.25	0.08
20	0.59	2.9	1.8	e0.40	e0.66	29	1.7	48	4.3	0.45	0.20	0.06
21	0.52	2.0	1.7	e0.39	e1.3	18	2.1	40	2.9	0.42	0.14	0.05
22	0.64	1.3	1.7	e0.37	e1.8	8.0	2.3	116	2.4	0.41	0.14	0.06
23	0.71	126	1.7	e0.31	e2.5	6.0	2.1	305	2.0	0.38	0.16	0.04
24	0.70	104	1.5	e0.28	e3.9	5.8	1.7	297	1.7	0.32	0.23	0.06
25	0.70	17	1.4	e0.27	e9.0	10	2.0	44	1.5	0.28	0.36	0.09
26	0.70	8.3	1.3	e0.26	e19	48	2.4	16	1.3	0.27	0.45	0.06
27	0.72	6.1	1.4	e0.25	e30	37	2.1	8.1	1.2	0.26	0.83	0.05
28	0.75	5.9	e27	e0.26	e50	32	1.8	5.2	1.3	0.23	0.51	0.04
29	0.77	5.7	e30	e0.25	e130	164	1.6	4.0	1.1	0.26	0.27	0.05
30	0.79	4.5	e15	e0.24	---	31	1.4	5.7	1.0	0.36	0.18	0.04
31	0.79	---	e6.5	e0.27	---	15	---	169	---	0.31	0.14	---
TOTAL	15.61	329.69	175.0	71.88	254.63	1,799.1	80.0	1,432.38	1,142.5	26.21	7.36	2.42
MEAN	0.50	11.0	5.65	2.32	8.78	58.0	2.67	46.2	38.1	0.85	0.24	0.08
MAX	0.79	126	30	22	130	291	9.2	305	294	2.4	0.83	0.16
MIN	0.07	0.46	1.3	0.24	0.25	5.8	1.4	0.98	1.0	0.23	0.12	0.04
CFSM	0.03	0.55	0.28	0.12	0.44	2.92	0.13	2.32	1.91	0.04	0.01	0.00
IN.	0.03	0.62	0.33	0.13	0.48	3.36	0.15	2.68	2.14	0.05	0.01	0.00

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2004, BY WATER YEAR (WY)

MEAN	0.50	11.0	2.87	2.32	4.99	34.1	2.67	46.2	38.1	0.47	0.24	0.08
MAX	0.50	11.0	5.65	2.32	8.78	58.0	2.67	46.2	38.1	0.85	0.24	0.08
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)
MIN	0.50	11.0	0.09	2.32	1.05	10.2	2.67	46.2	38.1	0.09	0.24	0.08
(WY)	(2004)	(2004)	(1977)	(2004)	(1977)	(1977)	(2004)	(2004)	(2004)	(1977)	(2004)	(2004)

## SUMMARY STATISTICS

## FOR 2004 WATER YEAR

ANNUAL TOTAL	5,336.78
ANNUAL MEAN	14.6
HIGHEST ANNUAL MEAN	
LOWEST ANNUAL MEAN	
HIGHEST DAILY MEAN	305 May 23
LOWEST DAILY MEAN	0.04 (a) Sep 23
ANNUAL SEVEN-DAY MINIMUM	0.06 Sep 23
MAXIMUM PEAK FLOW	560 Mar 5
MAXIMUM PEAK STAGE	9.44 Mar 5
ANNUAL RUNOFF (CFSM)	0.733
ANNUAL RUNOFF (INCHES)	9.98
10 PERCENT EXCEEDS	31
50 PERCENT EXCEEDS	1.3
90 PERCENT EXCEEDS	0.14

(a) Also occurred Sept. 28, 30

(e) Estimated due to ice effect or missing record

04085068 ASHWAUBENON CREEK NEAR LITTLE RAPIDS, 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, 14-16, Feb. 20-21, 23, and Mar. 6 because recorded precipitation interpreted as collector snowmelt.  
Rainfall data missing for the period Mar. 1-29.

EXTREMES FOR CURRENT YEAR.-- Maximum daily rainfall, 2.27 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	0.00	0.00	---	0.00	0.00	0.00	0.00	0.20	0.00
2	0.00	0.00	0.00	0.13	0.00	---	0.00	0.00	0.00	0.00	0.14	0.00
3	0.11	1.08	0.00	0.00	0.00	---	0.00	0.00	0.00	0.06	0.02	0.00
4	0.00	0.80	0.00	0.00	0.00	---	0.00	0.00	0.00	0.89	0.00	0.00
5	0.00	0.00	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	0.00	---	0.15	0.00	0.03	0.46	0.00	0.30
7	0.00	0.00	0.00	0.00	0.00	---	0.00	0.05	0.00	0.02	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	---	0.07	1.97	0.00	0.00	0.18	0.00
9	0.00	0.00	0.24	0.00	0.00	---	0.01	0.00	1.69	0.01	0.00	0.00
10	0.00	0.23	0.00	0.00	0.00	---	0.00	0.02	0.16	0.00	0.00	0.00
11	0.00	0.01	0.00	0.00	0.00	---	0.00	0.00	0.62	0.00	0.00	0.00
12	0.00	0.08	0.00	0.00	0.00	---	0.00	1.03	0.15	0.03	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	---	0.00	0.06	0.62	0.19	0.01	0.00
14	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.03	0.00	0.00	0.00
15	0.00	0.01	0.00	0.00	0.00	---	0.12	0.00	0.00	0.00	0.00	0.20
16	0.00	0.00	0.00	0.00	0.00	---	0.04	0.00	1.11	0.06	0.03	0.00
17	0.00	0.04	0.00	0.00	0.00	---	0.11	0.01	0.08	0.00	0.05	0.00
18	0.00	0.46	0.00	0.00	0.00	---	0.00	0.02	0.00	0.00	0.51	0.00
19	0.00	0.00	0.00	0.00	0.00	---	0.02	0.09	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	---	0.28	0.85	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	---	0.06	0.53	0.05	0.00	0.00	0.00
22	0.00	0.04	0.00	0.00	0.00	---	0.00	0.26	0.00	0.00	0.00	0.00
23	0.00	2.27	0.00	0.00	0.00	---	0.00	1.61	0.06	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	---	0.07	0.03	0.00	0.00	0.33	0.00
25	0.00	0.00	0.00	0.00	0.00	---	0.27	0.00	0.00	0.00	0.05	0.00
26	0.00	0.00	0.00	0.00	0.00	---	0.01	0.00	0.00	0.00	0.14	0.00
27	0.00	0.00	0.20	0.00	0.00	---	0.00	0.02	0.23	0.00	0.67	0.02
28	0.08	0.00	0.21	0.00	0.00	---	0.02	0.00	0.01	0.00	0.05	0.00
29	0.02	0.00	0.00	0.00	0.00	---	0.00	0.05	0.00	0.09	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.03	0.86	0.00	0.00	0.00	0.00
31	0.03	---	0.00	0.00	---	0.00	---	0.75	---	0.00	0.00	---
TOTAL	0.24	5.02	0.65	0.13	0.00	---	1.26	8.21	4.84	1.81	2.38	0.52

04085068 ASHWAUBENON CREEK NEAR LITTLE RAPIDS, WI—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2003 to September 2004.

PERIOD OF DAILY RECORD.--

SUSPENDED-SOLIDS DISCHARGE: October 2003 to September 2004.

TOTAL-PHOSPHORUS DISCHARGE: October 2003 to September 2004.

INSTRUMENTATION.--Water-quality sampler October 2003 to September 2004.

REMARKS.--Chemical analyses by the Green Bay Metropolitan Sewerage District Laboratory. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 544 tons, May 23, 2004; minimum daily, 0.001 tons, Oct. 1-2, 2003.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,860 lbs, May 23, 2004; minimum daily, 0.03 lbs, Sept. 23, 27-28, 30, 2004.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 544 tons, May 23; minimum daily, 0.001 tons, Oct. 1-2.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,860 lbs, June 1; minimum daily, 0.03 lbs, Sept. 23, 27-28, 30.

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	0.001	0.020	0.36	0.030	0.003	33.9	0.85	0.020	76.0	0.060	0.020	0.005
2	0.001	0.020	0.26	0.050	0.003	71.3	0.45	0.020	4.34	0.060	0.020	0.004
3	0.004	0.030	0.16	e4.30	0.003	21.8	0.28	0.020	1.04	0.060	0.020	0.004
4	0.005	0.36	0.11	e2.50	0.003	7.19	0.19	0.020	0.52	e0.37	0.010	0.004
5	0.005	1.64	0.090	0.10	0.003	232	0.12	0.020	0.36	e0.37	0.008	0.003
6	0.004	0.24	0.070	0.030	0.003	89.7	0.090	0.020	0.29	e0.28	0.006	0.006
7	0.003	0.090	0.060	0.020	0.003	e116	0.070	0.020	0.24	e0.32	0.006	0.003
8	0.003	0.040	0.050	0.020	0.003	8.68	0.060	4.83	0.20	0.14	0.007	0.003
9	0.003	0.020	0.060	0.020	0.003	2.69	0.050	14.5	109	0.11	0.009	0.002
10	0.005	0.020	2.02	0.020	0.003	1.50	0.050	1.38	19.6	0.10	0.008	0.004
11	0.006	0.020	2.33	0.010	0.003	1.28	0.050	0.17	93.0	0.090	0.009	0.003
12	0.009	0.020	0.61	0.010	0.003	0.94	0.050	4.87	67.5	0.080	0.010	0.002
13	0.009	0.020	0.19	0.008	0.004	0.65	0.040	75.0	46.5	0.080	0.010	0.003
14	0.010	0.010	0.12	0.007	0.004	0.62	0.040	126	365	0.080	0.010	0.003
15	0.010	0.010	0.070	0.006	0.004	0.58	0.040	23.1	18.4	0.070	0.010	0.004
16	0.010	0.010	0.040	0.005	0.005	0.35	0.040	2.98	2.60	0.070	0.010	0.005
17	0.010	0.009	0.030	0.006	0.005	0.23	0.040	0.93	416	0.060	0.020	0.004
18	0.010	0.010	0.030	0.005	0.006	0.16	0.040	0.42	18.5	0.060	0.020	0.003
19	0.010	0.030	0.020	0.005	0.007	0.24	0.040	0.29	1.70	0.050	0.020	0.003
20	0.010	0.050	0.020	0.004	0.008	e8.90	0.040	25.4	0.49	0.050	0.010	0.002
21	0.010	0.040	0.020	0.004	0.020	0.31	0.040	12.1	0.21	0.050	0.009	0.002
22	0.010	0.040	0.020	0.004	0.020	0.12	0.050	47.4	0.15	0.050	0.009	0.002
23	0.010	142	0.020	0.003	0.030	0.080	0.040	544	0.13	0.040	0.010	0.002
24	0.010	42.3	0.020	0.003	0.050	0.10	0.040	237	0.11	0.030	0.010	0.002
25	0.010	4.16	0.020	0.003	0.13	1.32	0.040	14.5	0.10	0.030	0.020	0.004
26	0.010	1.65	0.010	0.003	0.56	20.1	0.050	2.21	0.090	0.020	0.020	0.003
27	0.020	1.05	0.020	0.003	1.77	5.76	0.040	1.31	0.080	0.020	e0.040	0.002
28	0.020	0.88	e6.60	0.003	3.65	27.6	0.030	1.12	0.090	0.020	0.030	0.002
29	0.020	0.74	e7.80	0.003	17.1	160	0.030	1.13	0.080	0.020	0.010	0.002
30	0.020	0.52	e2.50	0.003	---	5.66	0.030	2.48	0.070	0.020	0.008	0.002
31	0.020	---	0.070	0.003	---	1.71	---	214	---	0.020	0.006	---
TOTAL	0.288	196.049	23.800	7.191	23.409	821.470	3.020	1,357.260	1,242.390	2.880	0.415	0.093
WTR YR	2004	TOTAL 3,678.265										

e Estimated

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04085068 ASHWAUBENON CREEK NEAR LITTLE RAPIDS, 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	0.09	2.93	9.75	4.18	0.14	708	14.0	1.34	452	1.65	0.27	0.08
2	0.09	2.77	7.98	6.38	0.16	974	8.52	1.25	60.4	1.48	0.23	0.07
3	e0.42	3.14	5.53	e208	0.14	370	6.05	1.22	20.4	1.46	0.23	0.07
4	e0.51	22.9	4.47	e127	0.13	203	4.68	1.22	10.5	e6.61	0.16	0.07
5	e0.51	121	4.14	e65.4	0.12	1,370	3.40	1.23	7.25	e6.61	0.13	0.07
6	0.32	39.4	3.87	3.55	0.13	852	2.98	1.21	5.78	4.33	0.09	e1.89
7	0.26	16.0	3.61	2.14	0.13	229	2.72	1.22	4.83	4.79	0.10	0.08
8	0.25	7.15	3.59	2.31	0.13	115	2.48	30.3	4.17	3.59	0.11	0.06
9	0.37	3.81	3.55	2.00	0.13	50.7	2.16	120	388	2.74	0.14	0.05
10	0.62	2.74	37.8	1.71	0.13	32.6	1.91	40.8	155	2.22	0.12	0.09
11	0.78	2.92	61.4	1.32	0.12	31.0	1.84	12.4	466	1.90	0.12	0.06
12	e1.37	3.04	21.4	0.94	0.12	25.5	1.68	21.2	332	1.67	0.14	0.06
13	e1.74	2.46	9.78	0.75	0.15	19.1	1.49	237	267	1.60	0.14	0.07
14	1.90	2.02	9.02	0.64	0.16	20.7	1.43	450	1,250	1.46	0.13	0.06
15	2.07	1.74	7.13	0.49	0.19	21.4	1.48	180	143	1.25	0.13	0.08
16	2.22	1.52	7.11	0.45	0.21	14.4	1.52	39.4	61.8	1.05	0.13	0.11
17	2.27	1.25	7.42	0.49	0.27	10.6	1.62	15.1	1,240	0.92	e0.40	0.09
18	2.42	1.73	6.12	0.44	0.33	8.08	1.61	7.37	154	0.79	e0.42	0.07
19	2.58	e8.50	4.91	0.38	0.40	e15.7	1.61	4.98	23.6	0.69	e0.42	0.06
20	3.10	e14.3	4.06	0.33	0.52	e68.9	1.48	198	8.06	0.61	0.15	0.05
21	3.76	3.99	3.70	0.31	1.11	e34.2	1.84	147	4.18	0.55	0.11	0.04
22	4.15	2.45	3.59	0.28	1.68	8.93	2.04	397	3.47	0.50	0.10	0.04
23	4.93	729	3.47	0.23	2.56	6.41	1.88	1,860	2.95	0.45	0.12	0.03
24	4.67	490	3.08	0.20	4.36	6.01	1.59	985	2.60	0.37	0.17	0.04
25	4.34	63.6	2.75	0.19	11.0	11.7	1.84	57.2	2.34	0.31	e0.53	0.06
26	4.06	23.5	2.49	0.17	27.4	111	2.28	15.7	2.17	0.29	0.35	0.05
27	3.91	17.1	2.54	0.16	100	85.7	2.01	7.86	2.06	0.27	e1.23	0.03
28	3.79	16.4	e270	0.16	221	117	1.75	5.06	2.20	0.23	0.40	0.03
29	3.64	15.6	e309	0.15	428	664	1.55	3.83	1.97	0.26	e0.33	0.04
30	3.51	12.4	e127	0.14	---	63.4	1.43	10.9	1.82	0.34	0.14	0.03
31	3.27	---	e43.8	0.15	---	24.7	---	813	---	0.28	0.11	---
TOTAL	67.92	1,635.36	994.06	431.04	800.92	6,272.73	82.87	5,667.79	5,079.55	51.27	7.35	3.63
WTR YR	2004	TOTAL	21,094.49									

e Estimated

04085068 ASHWAUBENON CREEK NEAR LITTLE RAPIDS, 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 concentration mg/L (80154)
OCT								
09...	1135	--	.17	10	6	.170	.320	--
23...	1115	--	.71	10	7	1.14	1.32	--
NOV								
04...	1835	--	8.5	50	25	.410	.710	--
04...	2210	--	13	50	30	.430	.650	--
04...	2345	--	17	50	22	.610	.780	--
05...	0110	--	21	50	53	.700	.900	--
05...	0350	--	24	50	24	.470	.610	--
05...	1255	--	20	50	48	1.23	1.61	--
05...	1256	--	20	10	46	.810	1.68	--
05...	1945	--	14	50	22	1.17	1.54	--
06...	1115	--	5.2	10	13	.890	1.15	--
20...	1014	--	3.2	10	6	--	.400	--
23...	0330	--	7.8	50	244	--	.710	--
23...	0535	--	32	50	328	--	1.09	--
23...	0845	--	66	50	560	--	1.51	674
23...	1045	--	95	50	700	.320	1.29	--
23...	1305	--	155	50	520	--	1.27	--
23...	1500	--	196	50	416	.430	1.13	--
24...	1039	--	97	10	72	--	.810	--
24...	1735	--	50	50	184	.510	.930	--
24...	2335	--	32	50	124	--	.940	--
25...	0400	--	20	50	92	--	.810	--
DEC								
10...	1225	15	--	50	67	--	.470	--
10...	2115	15	--	50	59	--	.480	--
11...	0750	23	--	50	33	--	.510	--
11...	1330	23	--	50	42	--	.500	--
17...	1122	--	2.8	10	4	.180	.470	--
FEB								
12...	1048	.31	--	10	<4	.050	.070	--
26...	1345	19	--	10	11	.230	.250	--
27...	1245	30	--	50	30	--	.560	--
27...	1540	30	--	50	20	--	.860	--
28...	1540	50	--	50	30	--	.860	--
29...	0250	130	--	50	35	--	.640	--
29...	1850	130	--	50	73	--	.570	--
MAR								
01...	0001	200	--	50	43	.480	.710	--
01...	1150	200	--	50	99	.360	.700	--
01...	1151	200	--	10	44	.490	.570	--
02...	0610	250	--	50	117	--	.730	180
02...	1425	250	--	50	126	.510	.790	194
02...	1426	250	--	10	121	.500	.750	--
03...	0515	89	--	50	74	.430	.650	--
03...	1110	89	--	50	63	.390	.670	--
03...	1111	89	--	10	103	.350	.660	--
05...	0800	--	84	50	251	--	.850	--
05...	1000	--	164	50	339	--	1.01	--
05...	1425	--	447	50	376	--	.890	411
05...	1725	--	519	50	328	.230	.900	--
05...	1726	--	519	10	316	.350	.890	--
06...	0530	--	364	50	163	--	.790	--
06...	1030	--	166	50	141	.450	.830	--
06...	1031	--	165	10	137	.410	.760	--
06...	1240	--	105	50	132	--	.800	--
24...	1200	--	5.5	10	4	.160	.190	--
26...	0310	--	25	50	108	--	.260	--
26...	1220	--	58	50	156	--	.490	--
28...	0020	--	27	50	17	--	.410	--
28...	2135	--	62	50	1,020	--	1.39	--
29...	0050	--	107	50	640	--	.960	757
29...	0445	--	211	50	488	.190	.830	--
29...	1530	--	134	50	174	--	.600	--
APR								
08...	1020	--	3.1	10	7	.120	.150	--
13...	1115	--	1.8	10	9	.100	.150	--
29...	1105	--	1.6	10	<7	--	.180	--

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04085068 ASHWAUBENON CREEK NEAR LITTLE RAPIDS, WI—Continued

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

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Residue total at 105 deg. C, suspended, mg/L (00530)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)	Suspended sediment concentration mg/L (80154)
MAY							
08...	1905	29	50	183	--	.470	--
09...	0335	62	50	164	.250	.450	--
10...	0335	25	50	40	--	.470	--
11...	1049	8.9	10	5	.180	.230	--
12...	2110	14	50	178	--	.340	--
13...	0005	45	50	756	--	.920	--
13...	1251	57	50	146	.200	.340	--
13...	1323	56	50	474	--	.700	--
14...	0220	136	50	724	.260	1.09	--
14...	1255	82	50	274	.270	.610	--
14...	1256	82	50	332	.280	.700	--
14...	2320	107	50	180	--	.540	--
15...	1505	51	50	107	--	.480	--
16...	1210	15	50	62	--	.430	--
17...	1600	5.9	10	50	--	.360	--
20...	0310	13	50	221	--	.890	--
20...	1030	45	50	278	--	.910	--
20...	1820	81	50	188	.320	.710	--
21...	0815	34	50	82	--	.660	--
22...	0010	63	50	236	--	.730	--
22...	0645	108	50	214	--	.680	--
22...	1845	132	50	112	.340	.600	--
23...	0225	88	50	82	--	.570	--
23...	0815	122	50	1,050	--	1.57	--
23...	1440	456	50	836	--	1.26	936
23...	1755	528	50	716	.230	1.11	--
23...	1756	528	50	676	--	1.12	--
24...	0555	387	50	344	--	.770	484
24...	1945	159	50	180	--	.300	--
25...	0240	72	50	168	--	.270	--
25...	0805	48	50	124	--	.240	--
26...	1112	15	10	45	--	.180	--
30...	2155	13	50	164	--	.480	--
31...	0305	45	50	404	--	.780	--
31...	1145	107	50	400	--	.880	--
31...	1445	213	50	564	--	1.06	695
31...	1705	300	50	568	.260	1.02	--
JUN							
01...	0505	234	50	210	--	.600	555
01...	2305	44	50	90	.280	.520	--
03...	1000	8.2	10	47	--	.480	--
09...	0250	29	50	1,550	--	2.00	--
09...	0835	64	50	1,400	.270	1.81	--
09...	1540	63	10	496	.490	1.23	--
09...	2035	48	50	284	--	.980	--
11...	0635	57	50	224	.290	.990	--
11...	1410	136	50	364	--	.520	--
12...	0210	144	50	160	--	.650	--
13...	0905	47	50	74	--	.480	--
13...	2345	159	50	624	--	1.05	312
14...	1140	396	50	496	.250	1.00	--
14...	1141	396	10	488	--	.490	--
15...	1130	37	10	126	--	.620	--
16...	2340	15	50	984	--	1.57	--
17...	0420	164	50	1,930	--	1.12	--
17...	0735	229	50	1,150	.230	1.65	--
18...	0325	66	50	220	--	.790	--
18...	1850	22	50	92	--	.560	--
21...	1020	2.7	50	24	--	.260	--
JUL							
07...	1410	2.2	10	30	.310	.410	--
22...	1300	.43	10	42	--	.230	--
AUG							
05...	1710	.17	10	17	.120	.140	--
19...	1000	.23	10	26	--	.140	--
SEP							
09...	1324	.08	10	12	.130	.150	--
29...	1216	.05	10	16	.100	.130	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

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040851325 BAIRD CREEK AT SUPERIOR ROAD AT GREEN BAY, WI

LOCATION.--Lat 44°30'04", long 87°56'10" in NW ¼ NE ¼ sec.3, T.23 N., R.21 E., Brown County, Hydrologic Unit 04030204, on left bank 10 ft upstream from Superior Road bridge and 0.9 mi north of County Road V, in Green Bay, WI.

DRAINAGE AREA.--15.74 mi<sup>2</sup>.

PERIOD OF RECORD.--October 2003 to September 2004.

GAGE.--Water-stage recorder. Elevation of gage is 670 ft above NGVD of 1929.

REMARKS.--Records good, except those that are estimated and those under 0.5 cfs, 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	0.53	1.7	21	7.8	0.74	e77	62	1.2	214	2.9	0.59	0.42
2	0.59	1.7	21	e9.4	0.70	e180	43	1.1	223	2.6	0.56	0.40
3	1.1	2.4	15	e16	0.68	299	30	1.0	152	2.3	0.61	0.39
4	0.70	13	10	e16	0.63	236	22	0.97	97	3.6	0.62	0.39
5	0.68	5.6	7.9	e12	0.65	289	17	0.91	62	2.4	0.52	0.40
6	1.0	3.6	6.8	e8.8	0.65	262	14	0.91	41	4.2	0.63	1.2
7	1.1	2.9	6.3	e8.8	0.62	244	11	0.85	30	2.9	0.57	0.41
8	0.67	2.4	5.7	e8.0	0.68	176	9.6	7.2	22	2.5	0.71	0.40
9	0.75	2.1	5.6	e8.0	0.64	134	7.8	16	84	2.1	0.55	0.39
10	0.89	2.2	22	e7.2	0.61	96	6.4	14	105	1.9	0.43	0.33
11	1.1	2.5	26	e5.0	0.61	81	5.1	9.1	154	1.7	0.44	0.30
12	1.1	2.2	23	e3.2	0.64	71	4.0	6.5	156	1.6	0.46	0.29
13	0.83	2.2	15	e2.7	0.69	65	3.1	7.7	139	1.6	0.61	0.27
14	0.98	2.2	10	e2.6	e0.68	36	2.7	21	108	1.3	0.43	0.27
15	0.83	2.2	8.1	e2.5	e0.69	36	2.7	24	74	1.2	0.39	0.63
16	0.81	2.1	7.6	e2.2	e0.71	34	2.4	17	51	1.2	0.39	0.34
17	0.81	2.1	7.2	e2.0	e0.72	25	2.2	12	100	0.97	0.41	0.28
18	0.83	3.0	6.5	e1.8	0.77	23	2.1	9.1	81	0.90	0.57	0.27
19	0.75	2.9	5.8	e1.6	0.69	26	1.9	6.6	68	0.91	0.48	0.25
20	0.79	2.9	5.9	e1.4	e0.74	39	1.9	31	47	0.93	0.39	0.23
21	0.85	2.8	4.4	e1.4	e0.83	32	2.5	29	32	0.85	0.50	0.28
22	0.92	2.6	3.7	e1.2	e0.92	27	2.2	57	22	0.88	0.35	0.28
23	0.98	100	3.3	e1.2	e1.0	21	1.9	158	17	0.67	0.35	0.26
24	0.91	61	3.2	e1.1	e1.0	19	1.7	224	12	0.61	0.39	0.25
25	0.92	49	2.8	e1.1	e1.0	22	2.1	213	9.2	0.60	0.51	0.27
26	0.92	43	2.9	e1.0	e1.1	55	2.1	155	6.9	0.63	0.59	0.26
27	0.92	44	2.9	e1.0	e1.3	55	1.9	108	5.8	0.74	0.78	0.26
28	1.0	39	16	e0.94	e3.6	71	2.0	79	4.9	0.54	0.41	0.26
29	1.3	32	15	e0.85	e22	135	1.6	54	4.0	0.91	0.42	0.30
30	2.0	26	10	0.81	---	110	1.4	45	3.4	0.68	0.41	0.27
31	2.0	---	8.0	0.76	---	86	---	177	---	0.58	0.52	---
TOTAL	29.56	461.3	308.6	138.36	46.29	3,062	270.3	1,487.14	2,125.2	47.40	15.59	10.55
MEAN	0.95	15.4	9.95	4.46	1.60	98.8	9.01	48.0	70.8	1.53	0.50	0.35
MAX	2.0	100	26	16	22	299	62	224	223	4.2	0.78	1.2
MIN	0.53	1.7	2.8	0.76	0.61	19	1.4	0.85	3.4	0.54	0.35	0.23
CFSM	0.06	0.98	0.63	0.28	0.10	6.28	0.57	3.05	4.50	0.10	0.03	0.02
IN.	0.07	1.09	0.73	0.33	0.11	7.24	0.64	3.51	5.02	0.11	0.04	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2004, BY WATER YEAR (WY)

MEAN	0.95	15.4	9.95	4.46	1.60	98.8	9.01	48.0	70.8	1.53	0.50	0.35
MAX	0.95	15.4	9.95	4.46	1.60	98.8	9.01	48.0	70.8	1.53	0.50	0.35
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)
MIN	0.95	15.4	9.95	4.46	1.60	98.8	9.01	48.0	70.8	1.53	0.50	0.35
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)

SUMMARY STATISTICS

FOR 2004 WATER YEAR

ANNUAL TOTAL	8,002.29
ANNUAL MEAN	21.9
HIGHEST ANNUAL MEAN	
LOWEST ANNUAL MEAN	
HIGHEST DAILY MEAN	299 Mar 3
LOWEST DAILY MEAN	0.23 Sep 20
ANNUAL SEVEN-DAY MINIMUM	0.26 Sep 18
MAXIMUM PEAK FLOW	(a)444 May 31
MAXIMUM PEAK STAGE	(b)5.66 Mar 1
ANNUAL RUNOFF (CFSM)	1.39
ANNUAL RUNOFF (INCHES)	18.91
10 PERCENT EXCEEDS	71
50 PERCENT EXCEEDS	2.2
90 PERCENT EXCEEDS	0.42

(a) Gage height 5.16 ft

(b) Ice affected

(c) Estimated due to ice effect or missing record





WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2003 to September 2004.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January to April 2004 (discontinued).

SUSPENDED-SOLIDS DISCHARGE: October 2003 to September 2004.

TOTAL-PHOSPHORUS DISCHARGE: October 2003 to September 2004.

INSTRUMENTATION.--Continuous specific conductance record from January to April 2004. Water-quality sampler October 2003 to September 2004.

REMARKS.--Records for specific conductance were faulty Feb. 15-25. Chemical analyses by the Green Bay Metropolitan Sewerage District Laboratory. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,250  $\mu$ S/cm, Feb. 26, 2004; minimum, 81  $\mu$ S/cm, Mar. 3, 2004.

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 426 tons, Mar. 5, 2004; minimum daily, 0.001 tons, Sept. 28, 30, 2004.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,820 lbs, Mar. 3, 2004; minimum daily, 0.12 lbs, Sept. 20, 2004.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,250  $\mu$ S/cm, Feb. 26; minimum, 81  $\mu$ S/cm, Mar. 3.

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 426 tons, Mar. 5; minimum daily, 0.001 tons, Sept. 28, 30.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,820 lbs, Mar. 3; minimum daily, 0.12 lbs, Sept. 20.

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

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	770	740	760
7	---	---	---	---	---	---	---	---	---	779	751	768
8	---	---	---	---	---	---	---	---	---	763	742	753
9	---	---	---	---	---	---	---	---	---	750	731	742
10	---	---	---	---	---	---	---	---	---	734	725	730
11	---	---	---	---	---	---	---	---	---	727	706	718
12	---	---	---	---	---	---	---	---	---	716	688	700
13	---	---	---	---	---	---	---	---	---	699	663	687
14	---	---	---	---	---	---	---	---	---	687	664	674
15	---	---	---	---	---	---	---	---	---	665	651	660
16	---	---	---	---	---	---	---	---	---	654	641	647
17	---	---	---	---	---	---	---	---	---	699	635	652
18	---	---	---	---	---	---	---	---	---	666	629	643
19	---	---	---	---	---	---	---	---	---	642	626	636
20	---	---	---	---	---	---	---	---	---	633	613	624
21	---	---	---	---	---	---	---	---	---	616	601	609
22	---	---	---	---	---	---	---	---	---	610	598	604
23	---	---	---	---	---	---	---	---	---	598	581	589
24	---	---	---	---	---	---	---	---	---	585	571	579
25	---	---	---	---	---	---	---	---	---	575	561	568
26	---	---	---	---	---	---	---	---	---	564	555	560
27	---	---	---	---	---	---	---	---	---	558	552	554
28	---	---	---	---	---	---	---	---	---	557	549	552
29	---	---	---	---	---	---	---	---	---	574	550	555
30	---	---	---	---	---	---	---	---	---	856	574	711
31	---	---	---	---	---	---	---	---	---	902	856	887
MONTH	---	---	---	---	---	---	---	---	---	902	549	660



040851325 BAIRD CREEK AT SUPERIOR ROAD AT GREEN BAY, 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	0.006	0.020	e5.62	0.050	0.008	33.2	5.84	0.020	93.3	0.12	0.010	0.010
2	0.006	0.020	e6.23	0.070	0.008	200	3.27	0.020	48.9	0.10	0.010	0.010
3	0.010	0.060	e2.67	e3.08	0.008	204	1.88	0.020	20.6	0.080	0.010	0.010
4	0.008	0.67	0.69	e3.08	0.008	251	1.13	0.020	10.6	0.12	0.010	0.010
5	0.007	0.35	0.42	e1.63	0.008	426	0.70	0.020	5.77	0.080	0.008	0.010
6	0.010	0.14	0.29	0.070	0.008	203	0.48	0.020	3.75	0.12	0.010	0.25
7	0.010	0.11	0.21	0.070	0.008	e233	0.30	0.020	2.77	0.080	0.010	0.006
8	0.007	0.080	0.15	0.060	0.009	e144	0.26	0.15	2.45	0.070	0.010	0.005
9	0.008	0.070	0.12	0.060	0.008	e91.1	0.21	0.34	113	0.060	0.010	0.005
10	0.010	0.070	e6.88	0.060	0.008	e49.6	0.17	0.30	33.0	0.050	0.009	0.004
11	0.010	0.070	e9.02	0.040	0.008	17.3	0.14	0.20	162	0.050	0.010	0.004
12	0.030	0.060	e6.88	0.030	0.009	e28.1	0.11	0.15	123	0.040	0.010	0.003
13	0.010	0.050	e2.67	0.020	0.009	e24.1	0.080	0.20	56.2	0.040	0.010	0.003
14	0.010	0.050	0.090	0.020	0.009	4.34	0.070	3.36	12.6	0.030	0.010	0.003
15	0.010	0.050	0.060	0.020	0.008	3.58	0.070	2.07	4.69	0.030	0.010	0.006
16	0.010	0.040	0.050	0.020	0.008	2.88	0.060	0.69	2.61	0.030	0.010	0.003
17	0.010	0.040	0.040	0.020	0.008	1.78	0.050	0.40	63.4	0.030	0.010	0.003
18	0.010	0.050	0.040	0.020	0.008	1.32	0.050	0.29	8.47	0.020	0.020	0.002
19	0.010	0.050	0.030	0.010	0.007	1.23	0.050	0.24	4.34	0.020	0.020	0.002
20	0.010	0.050	0.030	0.010	0.008	1.57	0.040	9.94	2.06	0.030	0.010	0.002
21	0.010	0.050	0.030	0.010	0.008	1.07	0.060	3.28	2.36	0.020	0.020	0.002
22	0.010	0.060	0.020	0.010	0.009	0.76	0.050	21.4	1.75	0.020	0.010	0.002
23	0.010	312	0.020	0.010	0.009	0.49	0.040	278	1.22	0.020	0.010	0.002
24	0.010	64.8	0.020	0.010	0.009	0.40	0.040	161	0.83	0.020	0.010	0.002
25	0.010	28.7	0.020	0.010	0.009	0.90	0.040	43.2	0.58	0.010	0.020	0.002
26	0.010	20.0	0.020	0.010	0.009	e16.4	0.040	23.2	0.40	0.010	0.020	0.002
27	0.010	16.0	0.020	0.010	0.010	e15.8	0.040	13.1	0.32	0.020	0.020	0.002
28	0.010	11.3	e3.08	0.010	0.24	107	0.040	7.97	0.25	0.010	0.010	0.001
29	0.020	7.13	0.10	0.009	5.37	149	0.030	5.81	0.19	0.020	0.010	0.002
30	0.030	e9.80	e2.67	0.009	---	18.6	0.030	5.32	0.15	0.010	0.010	0.001
31	0.030	---	e1.09	0.008	---	9.87	---	193	---	0.010	0.010	---
TOTAL	0.362	471.940	49.280	8.546	5.836	2,241.39	15.370	773.750	781.56	1.370	0.367	0.369
WTR YR	2004	TOTAL	4,350.140									

e Estimated

## STREAMS TRIBUTARY TO LAKE MICHIGAN

040851325 BAIRD CREEK AT SUPERIOR ROAD AT GREEN BAY, 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	0.23	0.59	e70.2	9.70	0.83	410	69.4	0.76	722	4.39	0.46	0.27
2	0.26	0.59	e74.8	11.5	0.78	1,370	46.3	0.69	718	3.88	0.42	0.26
3	0.46	1.60	e44.4	e48.5	0.75	1,820	31.7	0.64	472	3.55	0.43	0.25
4	0.30	24.9	17.9	e48.5	0.70	1,150	22.7	0.61	273	5.48	0.42	0.26
5	0.29	11.6	13.6	14.6	0.71	1,380	16.9	0.58	158	3.79	0.34	0.26
6	0.44	8.26	11.5	10.7	0.72	946	13.6	0.59	95.4	6.56	0.41	1.68
7	0.47	6.54	10.5	10.7	0.68	e1,540	9.89	0.56	62.8	4.56	0.37	0.24
8	0.29	5.11	9.18	9.67	0.75	e1,080	8.64	7.04	42.1	3.77	e0.60	0.21
9	0.33	4.45	8.81	9.64	0.70	e770	6.78	17.1	441	3.12	0.35	0.19
10	0.50	4.47	e79.5	8.65	0.66	e492	5.34	14.7	335	2.81	0.27	0.16
11	0.80	4.85	e93.9	6.00	0.67	150	4.13	9.39	538	2.50	0.27	0.15
12	0.86	4.20	e79.5	3.86	0.69	e324	3.12	6.65	460	2.32	0.28	0.14
13	0.62	3.94	21.7	3.20	0.74	e289	2.35	7.77	384	2.24	e0.50	0.13
14	0.67	3.89	14.4	3.09	0.72	51.8	2.04	21.6	230	1.79	0.26	0.14
15	0.52	3.71	11.0	2.99	0.73	47.6	1.95	26.3	167	1.57	0.24	e0.52
16	0.47	3.46	10.2	2.64	0.74	42.2	1.74	17.3	130	1.59	0.23	0.17
17	0.43	3.32	9.41	2.35	0.75	29.0	1.58	13.7	497	1.26	0.24	0.14
18	0.41	4.64	8.36	2.11	0.79	23.9	1.45	9.82	201	1.15	e0.46	0.14
19	0.34	4.37	7.44	1.87	0.71	24.9	1.32	6.72	156	1.14	e0.37	0.13
20	0.33	4.12	7.53	1.63	0.75	35.1	1.30	65.3	97.5	1.15	0.23	0.12
21	0.32	3.47	5.70	1.62	0.84	26.3	1.66	53.7	46.9	1.03	0.30	0.14
22	0.32	4.57	4.74	1.39	0.92	20.8	1.48	156	31.8	1.04	0.21	0.15
23	0.32	1,010	4.24	1.38	1.01	15.0	1.22	848	23.9	0.77	0.21	0.14
24	0.30	249	4.11	1.26	1.03	13.7	1.07	687	17.7	0.67	0.24	0.13
25	0.30	175	3.56	1.26	1.02	36.9	1.33	239	13.3	0.63	0.31	0.14
26	0.30	144	3.65	1.14	1.08	167	1.30	132	9.99	0.63	e0.48	0.14
27	0.30	135	3.65	1.14	1.27	148	1.16	129	8.54	0.71	e0.68	0.14
28	0.34	112	e48.5	1.07	5.29	420	1.21	135	7.16	0.50	0.26	0.14
29	0.42	e124	e109	0.97	73.2	969	0.97	99.3	5.90	0.81	0.27	0.16
30	0.67	e98.9	e114	0.91	---	192	0.82	81.5	5.07	0.58	0.26	0.15
31	0.69	---	9.89	0.86	---	98.6	---	812	---	0.47	0.33	---
TOTAL	13.30	2,164.55	914.87	224.90	100.23	14,082.8	264.45	3,600.32	6,350.06	66.46	10.70	6.99
WTR YR	2004	TOTAL	27,799.63									

e Estimated

## 040851325 BAIRD CREEK AT SUPERIOR ROAD AT GREEN BAY, 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 con- centration mg/L (80154)
OCT								
09...	1335	--	.75	10	<4	.040	.080	--
12...	0100	--	5.7	50	34	--	.160	--
23...	0940	--	.92	10	<5	.150	.060	--
NOV								
05...	1515	--	5.0	50	32	.330	.460	--
05...	1516	--	5.0	10	15	.360	.440	--
20...	0912	--	2.9	10	6	--	.270	--
23...	0245	--	56	50	1,500	--	2.73	--
23...	0340	--	79	50	910	--	1.52	--
23...	0535	--	108	50	1,440	--	2.02	--
23...	0730	--	141	50	1,390	.380	2.87	--
23...	1740	--	98	50	968	--	1.38	1,220
24...	0540	--	65	50	488	--	.770	--
24...	1740	--	56	50	260	--	.720	--
DEC								
17...	1708	--	7.5	10	2	.190	.240	--
FEB								
12...	1624	--	.65	10	<5	.120	.200	--
26...	1515	1.1	--	10	<3	.160	.180	--
28...	1735	3.6	--	50	52	--	.380	--
29...	1445	22	--	50	119	--	.660	--
MAR								
01...	0245	77	--	50	43	.640	.910	--
01...	1220	77	--	50	188	--	.970	--
01...	1650	77	--	50	199	.520	1.06	--
01...	1651	77	--	10	222	.440	1.08	--
02...	0450	180	--	50	162	--	1.29	532
02...	1010	180	--	50	656	.500	1.78	--
02...	2210	180	--	50	226	.360	1.26	757
03...	1220	--	287	50	166	.360	.950	--
03...	1221	--	286	10	237	.290	.920	--
05...	0920	--	368	50	2,690	--	2.99	--
05...	1035	--	392	50	864	--	1.60	820
05...	1625	--	358	50	666	.470	.630	--
05...	1626	--	357	10	370	.470	.920	--
06...	1200	--	249	50	744	.320	1.10	--
24...	1500	--	19	10	7	.090	.120	--
28...	1920	--	77	50	242	--	.630	--
28...	2025	--	125	50	1,140	--	1.65	--
28...	2135	--	175	50	1,470	.290	2.51	--
29...	2135	--	131	50	126	--	.930	--
APR								
13...	0745	--	3.2	10	<10	.090	.140	--
29...	1200	--	1.6	10	<7	--	.110	--
MAY								
11...	1140	--	9.0	10	8	.110	.190	--
14...	1200	--	20	50	41	--	.160	--
15...	0001	--	29	50	85	.210	.290	--
15...	1200	--	23	50	22	--	.200	--
17...	1700	--	11	10	11	--	.210	--
20...	0145	--	20	50	102	--	.320	--
20...	0215	--	45	50	266	.110	.540	--
20...	1415	--	33	50	96	.200	.400	--
21...	0215	--	26	50	47	--	.340	--
21...	1415	--	27	50	36	--	.360	--
22...	1225	--	66	50	130	.340	.580	--
23...	0830	--	136	50	524	.350	1.17	--
23...	0910	--	213	50	1,400	--	1.89	--
23...	0935	--	248	50	1,560	--	2.17	1,740
23...	1015	--	294	50	1,640	.260	2.09	--
23...	1849	--	185	50	280	--	.570	--
23...	1850	--	185	50	312	.200	.520	324
24...	0025	--	251	50	560	--	.910	585
25...	0025	--	226	50	112	.230	.380	--
25...	1225	--	217	50	74	--	.180	--
26...	1355	--	149	10	54	--	.150	--
28...	1235	--	78	10	36	--	.340	--
31...	1850	--	299	10	532	.320	.980	--

## STREAMS TRIBUTARY TO LAKE MICHIGAN

040851325 BAIRD CREEK AT SUPERIOR ROAD AT GREEN BAY, WI—Continued

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

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Residue total at 105 deg. C, suspended, mg/L (00530)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
JUN							
01...	0945	203	50	164	--	.620	--
01...	1750	239	50	126	.350	.660	--
02...	0550	242	50	100	--	.660	--
03...	1045	159	10	48	.350	.580	--
05...	1545	56	10	33	.410	.460	--
09...	0235	57	50	206	--	.700	--
09...	0415	120	50	1,620	.260	1.90	--
09...	1615	86	50	248	--	.760	--
09...	1638	85	10	160	.350	.670	--
10...	0415	93	50	108	--	.640	--
11...	0650	157	50	170	--	.660	--
12...	0135	184	50	568	.210	.820	--
13...	0135	132	50	40	--	.360	--
13...	1505	170	50	360	--	.760	399
14...	0305	125	50	56	--	.420	--
15...	0305	84	50	28	--	.440	--
17...	0020	72	50	140	--	.560	--
17...	0125	134	50	580	.320	1.54	--
18...	0125	81	50	52	--	.520	--
20...	1325	45	50	15	--	.430	--
21...	1100	32	10	31	--	.260	--
JUL							
07...	1025	3.0	10	10	.190	.290	--
22...	1400	.80	10	10	--	.220	--
AUG							
05...	1405	.49	10	6	.100	.120	--
19...	1050	.50	10	12	--	.110	--
27...	1530	1.4	280	--	--	--	--
SEP							
06...	0935	9.1	50	176	--	.410	--
09...	1140	.47	10	5	.005	.090	--
29...	1038	.34	10	2	.080	.100	--

## STREAMS TRIBUTARY TO LAKE MICHIGAN

040851378 EAST RIVER AT MONROE STREET AT GREEN BAY, WI

LOCATION.--Lat 44°31'02", long 88°00'24" in SW ¼ SW ¼ sec. 30, T.24 N., R.21 E., Brown County, Hydrologic Unit 04030204, on right bank upstream side Monroe Street bridge and 0.2 mi upstream of the Fox River.

DRAINAGE AREA.--145 mi<sup>2</sup>.

PERIOD OF RECORD.--December 2003 to September 2004.

GAGE.--Water-stage recorder. Side-looking velocity meter system. Elevation of gage is 585 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for days with negative mean daily flow, 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	---	---	---	e-14	e-0.40	1,100	225	20	2,190	75	23	13
2	---	---	---	e103	e13	e1,990	189	78	1,040	33	43	27
3	---	---	---	e189	e6.0	e1,930	141	77	435	-22	22	33
4	---	---	---	e111	e28	1,040	137	18	229	175	11	28
5	---	---	---	e114	e-6.0	1,770	94	72	139	111	131	e25
6	---	---	---	e83	e7.0	2,660	65	-10	128	91	47	e18
7	---	---	---	e8.1	e25	1,350	87	68	14	208	44	e20
8	---	---	---	e-10	e23	810	96	197	80	94	29	e10
9	---	---	---	e24	15	455	124	347	783	56	60	e16
10	---	---	---	e45	e35	311	59	152	411	79	54	-1.2
11	---	---	---	e31	e-6.0	312	112	118	564	62	1.3	16
12	---	---	---	e42	e44	266	82	147	515	68	-8.8	32
13	---	---	---	e39	e54	118	63	168	381	69	64	-12
14	---	---	---	e11	e28	227	91	415	500	113	70	-6.3
15	---	---	---	e-0.30	13	164	34	370	335	107	19	51
16	---	---	130	e32	10	140	9.0	161	138	5.4	1.8	29
17	---	---	64	e72	e25	123	69	-2.0	836	85	16	7.6
18	---	---	133	e50	e13	134	62	243	394	100	-6.8	-1.7
19	---	---	e84	e32	e-27	118	42	34	309	29	119	6.8
20	---	---	e60	e6.0	e45	238	29	310	120	40	11	29
21	---	---	e52	e21	e75	192	92	271	76	50	36	19
22	---	---	e28	e27	e49	119	108	599	158	65	-9.5	-0.78
23	---	---	e31	e4.0	e53	148	16	1,430	97	65	62	-7.6
24	---	---	e80	e26	e91	71	62	2,550	107	28	-40	69
25	---	---	e61	e-6.0	e101	106	105	1,380	44	56	59	14
26	---	---	e18	e22	e89	343	87	563	93	43	27	4.9
27	---	---	e38	e18	e125	328	124	290	113	26	74	-28
28	---	---	e73	e10	e180	277	14	333	68	51	70	90
29	---	---	e180	e42	e391	1,010	-10	164	65	11	50	44
30	---	---	e72	e23	---	580	121	192	21	27	50	37
31	---	---	e104	e6.0	---	330	---	1,650	---	48	45	---
TOTAL	---	---	1,208	1,160.80	1,498.60	18,760	2,529.0	12,405.0	10,383	2,048.4	1,174.0	581.72
MEAN	---	---	75.5	37.4	51.7	605	84.3	400	346	66.1	37.9	19.4
MAX	---	---	180	189	391	2,660	225	2,550	2,190	208	131	90
MIN	---	---	18	-14	-27	71	-10	-10	14	-22	-40	-28
CFSM	---	---	0.52	0.26	0.36	4.18	0.58	2.76	2.39	0.46	0.26	0.13
IN.	---	---	0.31	0.30	0.38	4.82	0.65	3.18	2.67	0.53	0.30	0.15

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

MEAN	---	---	75.5	37.4	51.7	605	84.3	400	346	66.1	37.9	19.4
MAX	---	---	75.5	37.4	51.7	605	84.3	400	346	66.1	37.9	19.4
(WY)	---	---	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)
MIN	---	---	75.5	37.4	51.7	605	84.3	400	346	66.1	37.9	19.4
(WY)	---	---	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)

## SUMMARY STATISTICS

## FOR 2004 WATER YEAR

ANNUAL TOTAL	51,748.52
ANNUAL MEAN	178
HIGHEST DAILY MEAN	2,660 Mar 6
LOWEST DAILY MEAN	-40 Aug 24
ANNUAL SEVEN-DAY MINIMUM	7.5 Sep 17
ANNUAL RUNOFF (CFSM)	1.23
ANNUAL RUNOFF (INCHES)	13.29
10 PERCENT EXCEEDS	390
50 PERCENT EXCEEDS	65
90 PERCENT EXCEEDS	6.0

(e) Estimated due to missing record

040851378 EAST RIVER AT MONROE STREET AT GREEN BAY, WI—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 2003 to September 2004.

PERIOD OF DAILY RECORD.--

SUSPENDED-SOLIDS DISCHARGE: December 2003 to September 2004.

TOTAL-PHOSPHORUS DISCHARGE: December 2003 to September 2004.

INSTRUMENTATION.--Water-quality sampler December 2003 to September 2004.

REMARKS.--Chemical analyses by the Green Bay Metropolitan Sewerage District Laboratory. Samples are point samples and are composite of four discrete samples collected during periods of positive flow. Negative loads are due to flow reversals. Suspended sediment and total-phosphorus loads have been calculated at this site for the 1986 water year. Loads for this period are published in U.S. Geological Survey Open-File Report 89-245.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 5240 tons, June 1, 2004; minimum daily, -6.62 tons, Aug. 24, 2004, due to flow reversal.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 17,400 lbs, June 1, 2004; minimum daily, -54.5 lbs, Aug. 24, 2004, due to flow reversal.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 5240 tons, June 1; minimum daily, -6.62 tons, Aug. 24, due to flow reversal.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 17,400 lbs, June 1; minimum daily, -54.5 lbs, Aug. 24, due to flow reversal.

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	---	---	---	-0.68	-0.004	94.2	39.3	1.76	5,240	8.03	3.05	2.55
2	---	---	---	5.02	0.14	398	27.7	6.90	2,100	3.66	6.34	5.31
3	---	---	---	8.96	0.060	771	17.9	7.07	627	-2.45	3.54	6.61
4	---	---	---	5.13	0.28	306	15.0	1.74	234	20.1	1.91	5.72
5	---	---	---	5.08	-0.060	620	9.21	7.04	101	13.2	24.4	5.19
6	---	---	---	3.56	0.060	2,050	6.94	-0.97	58.2	11.1	9.57	3.75
7	---	---	---	0.33	0.22	420	10.4	7.10	1.96	25.8	9.59	4.15
8	---	---	---	-0.34	0.19	65.7	13.0	21.3	10.3	12.0	6.84	2.08
9	---	---	---	0.72	0.12	28.8	18.9	38.9	130	7.34	15.0	3.31
10	---	---	---	1.21	0.28	19.1	10.2	17.7	88.4	10.5	13.4	-0.23
11	---	---	---	0.75	-0.050	19.5	21.7	13.7	148	8.51	0.38	3.29
12	---	---	---	0.95	0.35	23.1	17.5	17.0	125	9.35	-2.06	6.60
13	---	---	---	0.83	0.44	14.9	12.4	20.4	81.8	8.46	14.6	-2.43
14	---	---	---	0.22	0.23	38.5	16.0	68.3	95.9	12.1	15.7	-1.31
15	---	---	---	-0.004	0.11	25.7	5.43	77.8	63.5	9.99	4.21	10.4
16	---	---	2.56	0.56	0.080	19.0	1.30	25.1	31.0	0.49	0.40	6.00
17	---	---	1.74	1.18	0.21	14.4	8.75	-0.16	437	6.00	3.27	1.59
18	---	---	3.58	0.77	0.12	13.6	7.10	33.5	196	6.19	-1.32	-0.34
19	---	---	2.27	0.46	-0.25	10.4	4.35	4.97	122	1.62	22.6	1.39
20	---	---	1.62	0.080	0.44	18.0	2.84	60.4	38.1	2.21	2.13	5.94
21	---	---	1.41	0.28	0.77	12.6	8.53	69.9	19.4	2.84	6.36	3.98
22	---	---	0.76	0.36	0.54	6.90	9.56	159	34.7	3.79	-1.58	-0.14
23	---	---	0.85	0.060	0.71	8.38	1.39	1,090	18.8	3.90	10.2	-1.64
24	---	---	2.38	0.35	1.52	4.05	4.96	1,090	18.1	1.73	-6.62	15.1
25	---	---	2.01	-0.080	2.10	6.40	8.02	467	6.58	3.53	9.98	3.20
26	---	---	0.66	0.29	2.30	32.1	6.41	170	12.1	2.82	4.72	1.13
27	---	---	1.52	0.24	4.05	50.3	9.33	79.2	12.9	1.90	13.1	-6.31
28	---	---	3.23	0.13	7.78	79.2	1.13	74.4	6.95	4.18	12.6	17.3
29	---	---	8.78	0.51	22.7	744	-0.79	28.4	6.66	1.04	9.19	7.17
30	---	---	3.85	0.27	---	303	10.0	35.7	2.23	2.80	9.34	2.67
31	---	---	5.43	0.070	---	95.6	---	1,640	---	5.62	8.56	---
TOTAL	---	---	---	37.266	45.436	6,312.43	324.46	5,333.15	10,067.58	208.35	229.40	112.03



040851378 EAST RIVER AT MONROE STREET AT GREEN BAY, 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	---	---	---	-14.5	-0.43	2,990	414	15.9	17,000	86.0	46.9	15.9
2	---	---	---	113	15.5	6,340	292	63.6	5,720	37.8	96.7	32.1
3	---	---	---	212	7.69	6,720	183	65.9	1,450	-24.5	55.3	38.6
4	---	---	---	128	38.1	3,450	150	15.5	503	194	30.7	32.3
5	---	---	---	133	-8.55	5,850	89.9	59.6	307	123	403	28.4
6	---	---	---	99.1	10.9	12,300	68.6	-7.81	288	99.5	163	20.4
7	---	---	---	10.5	42.1	5,000	105	54.1	28.5	224	168	22.5
8	---	---	---	-12.7	41.7	1,450	133	154	156	101	123	11.3
9	---	---	---	31.8	28.5	739	196	267	1,570	59.5	273	17.9
10	---	---	---	62.4	59.9	521	107	119	863	82.6	225	-1.24
11	---	---	---	44.9	-8.74	552	232	107	1,200	64.4	5.86	17.7
12	---	---	---	63.0	58.4	568	187	159	1,050	70.0	-28.5	35.4
13	---	---	---	60.9	63.6	312	122	216	740	72.3	183	-13.0
14	---	---	---	18.1	29.3	709	142	637	940	121	179	-6.97
15	---	---	---	-0.41	12.0	496	43.3	640	711	117	43.6	55.7
16	---	---	134	55.9	8.35	393	9.34	228	339	6.61	3.82	31.9
17	---	---	65.9	131	22.4	322	56.7	-1.55	2,260	96.4	30.3	8.41
18	---	---	133	95.1	13.0	326	41.5	326	994	116	-12.1	-1.80
19	---	---	83.2	63.3	-29.7	267	23.4	47.4	693	34.7	203	7.32
20	---	---	58.3	12.4	54.8	500	15.9	417	242	46.8	18.9	31.3
21	---	---	49.6	38.9	102	377	50.9	376	137	57.7	55.7	21.2
22	---	---	26.3	45.4	73.5	218	60.7	1,050	265	74.0	-13.7	-0.78
23	---	---	28.6	6.30	81.5	251	9.40	3,790	154	73.1	86.9	-8.99
24	---	---	74.6	35.8	142	113	35.7	5,720	160	31.3	-54.5	84.2
25	---	---	58.2	-7.29	160	156	61.4	3,470	62.7	61.1	79.5	18.1
26	---	---	17.7	25.1	144	469	52.0	1,680	124	47.2	36.3	6.47
27	---	---	37.4	20.6	205	419	77.6	769	142	31.3	97.0	-37.4
28	---	---	73.3	11.5	300	379	9.63	566	81.6	67.8	90.6	121
29	---	---	184	48.4	704	2,720	-6.89	255	76.4	16.6	63.7	59.7
30	---	---	75.8	26.9	---	1,510	88.6	321	24.7	44.3	62.6	25.5
31	---	---	110	7.14	---	723	---	7,270	---	87.5	55.4	---
TOTAL	---	---	---	1,565.54	2,370.82	57,140	3,050.68	28,849.64	38,281.9	2,320.01	2,770.98	673.12

## STREAMS TRIBUTARY TO LAKE MICHIGAN

040851378 EAST RIVER AT MONROE STREET AT GREEN BAY, WI—Continued

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

Date	Dis-charge, cfs (00060)	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)
DEC					
23...	31	50	10	.180	.170
30...	72	50	20	--	2.81
JAN					
06...	83	50	16	--	.220
20...	6.0	50	5	--	.380
26...	22	50	<5	--	.210
FEB					
02...	13	50	<4	--	.220
09...	15	50	<3	--	.360
16...	10	50	3	--	.150
22...	49	50	4	--	.280
MAR					
01...	1,100	50	29	.330	.530
03...	1,930	50	177	--	.660
04...	1,040	50	99	--	.610
05...	1,770	50	110	--	.570
06...	2,660	50	384	--	.940
07...	1,350	50	109	.370	.730
08...	810	50	24	--	.290
11...	312	50	22	--	.320
14...	227	50	67	--	.600
22...	119	50	21	--	2.62
28...	277	50	92	--	.220
29...	1,010	50	342	.200	.570
APR					
05...	94	50	35	--	.170
19...	42	50	38	--	.100
26...	87	50	27	--	.110
MAY					
03...	77	50	34	--	.160
10...	152	50	43	--	.140
15...	370	50	86	--	.340
16...	161	50	54	--	.250
21...	271	50	104	--	.250
22...	599	50	75	--	.310
23...	1,430	50	386	.250	.550
24...	2,550	50	140	--	.390
27...	290	10	100	--	.640
27...	290	10	102	--	.340
30...	192	50	49	--	.260
31...	1,650	50	384	.190	.840
JUN					
01...	2,190	50	1,040	--	1.66
06...	128	50	190	--	.430
07...	14	50	37	--	.350
11...	564	50	102	--	.400
14...	500	50	70	.170	.340
17...	836	50	228	--	.520
21...	76	50	93	.170	.330
28...	68	50	--	.220	--
JUL					
06...	91	50	--	.220	--
12...	68	50	52	.420	.190
19...	29	50	20	--	.220
26...	43	50	24	--	.200
AUG					
02...	43	50	--	.080	--
09...	60	50	94	.200	.870
16...	1.8	50	79	--	.370
23...	62	50	61	--	.260
30...	50	50	--	.110	--
SEP					
05...	25	50	77	.090	.210
20...	29	50	76	--	.200
27...	-28	50	86	.080	.250

## 040851385 FOX RIVER, AT OIL TANK DEPOT, AT GREEN BAY, WI

LOCATION.--Lat 44°31'43", long 88°00'36" in NE ¼ NE ¼ sec. 25, T.24 N., R.20 E., Brown County, Hydrologic Unit 04030204, about 0.5 mi upstream of Interstate Highway 43 bridge in Green Bay, and 0.8 mi upstream from mouth.

DRAINAGE AREA.--6,330 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Side-looking velocity meter system.

REMARKS.--Records fair 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	2,710	2,020	7,300	2,750	3,580	7,030	10,000	1,860	18,700	13,900	1,240	e2,290
2	2,910	1,520	5,710	4,210	3,610	10,200	10,300	2,140	15,300	12,600	2,130	e2,270
3	2,320	1,160	4,010	4,300	4,140	8,690	10,200	2,700	14,500	12,600	1,830	e2,290
4	2,660	3,690	2,410	3,840	3,640	8,290	9,360	2,250	14,500	14,000	2,300	e2,400
5	2,450	6,910	3,140	4,300	3,430	14,300	10,300	2,470	13,400	12,400	2,600	e2,290
6	2,370	7,730	2,890	4,250	3,670	16,400	10,100	1,640	13,600	12,600	2,150	e2,240
7	2,040	6,250	2,860	3,290	3,490	12,600	10,400	1,710	13,600	12,700	1,880	e2,390
8	2,090	4,270	3,050	3,530	3,440	12,700	10,100	2,910	13,900	10,800	1,720	e2,730
9	2,240	3,480	2,710	3,820	3,380	10,700	10,600	4,220	14,600	10,800	1,810	e2,000
10	2,100	3,550	4,380	4,120	3,660	11,100	9,980	3,060	13,600	10,600	1,440	e2,110
11	2,390	2,650	4,530	3,700	3,100	10,700	10,500	5,610	15,900	10,800	1,790	e2,110
12	1,980	2,760	4,560	4,140	3,440	11,100	10,200	7,250	17,700	8,940	1,920	e2,270
13	2,090	2,700	4,470	3,940	3,910	10,200	10,100	9,020	16,400	7,050	2,560	e2,000
14	2,460	1,100	4,580	3,450	3,600	11,200	10,300	11,600	16,800	5,410	2,970	e2,150
15	2,390	1,760	4,270	3,720	3,420	10,100	9,760	11,600	16,500	4,970	1,600	e1,910
16	2,440	2,770	3,860	3,850	3,490	10,300	9,340	10,600	15,700	4,820	1,510	e2,330
17	2,160	2,450	4,230	4,150	3,680	10,500	9,350	8,360	18,200	5,360	1,690	e2,660
18	1,820	3,040	3,900	3,900	3,720	10,400	9,340	11,500	16,500	5,800	1,360	e1,890
19	3,120	3,650	4,590	3,730	3,500	10,500	9,930	9,330	15,800	5,340	2,490	e2,040
20	1,730	4,390	3,960	3,620	3,790	11,000	8,650	10,200	15,700	5,210	2,180	e2,070
21	1,060	3,460	2,940	3,560	4,400	10,200	8,430	10,700	15,800	4,620	1,820	e2,070
22	1,280	3,450	4,230	4,000	3,550	10,200	6,940	15,600	16,300	4,150	654	e1,960
23	2,110	10,300	2,640	3,330	3,500	10,100	4,480	18,200	15,900	2,770	2,990	e1,800
24	2,000	9,330	2,900	3,710	4,170	8,260	4,480	21,700	16,000	3,010	1,630	e1,980
25	1,380	9,450	3,020	3,390	4,410	8,730	4,910	16,600	15,300	3,460	2,090	e1,890
26	2,030	8,000	2,790	3,320	4,220	9,760	4,910	14,400	15,500	3,200	1,320	e1,770
27	1,770	8,530	2,950	4,370	4,400	10,700	5,630	13,700	15,400	2,970	e1,930	e1,820
28	1,300	8,440	2,950	4,520	4,700	10,900	2,030	14,100	15,100	1,040	2,610	e1,650
29	2,050	8,000	4,080	3,940	5,380	13,000	644	13,300	15,000	1,370	e1,990	e1,620
30	1,300	8,840	3,020	3,780	---	10,900	2,240	13,300	14,400	1,890	1,630	e1,580
31	1,980	---	3,960	3,650	---	10,200	---	18,400	---	2,400	e2,200	---
TOTAL	64,730	145,650	116,890	118,180	110,420	330,960	243,504	290,030	465,600	217,580	60,034	62,580
MEAN	2,088	4,855	3,771	3,812	3,808	10,680	8,117	9,356	15,520	7,019	1,937	2,086
MAX	3,120	10,300	7,300	4,520	5,380	16,400	10,600	21,700	18,700	14,000	2,990	2,730
MIN	1,060	1,100	2,410	2,750	3,100	7,030	644	1,640	13,400	1,040	654	1,580
CFSM	0.33	0.77	0.60	0.60	0.60	1.69	1.28	1.48	2.45	1.11	0.31	0.33
IN.	0.38	0.86	0.69	0.69	0.65	1.94	1.43	1.70	2.74	1.28	0.35	0.37

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

MEAN	3,327	4,799	4,328	3,798	3,780	5,843	7,342	6,697	7,287	4,648	3,273	3,134
MAX	8,504	8,668	9,446	6,092	5,814	10,680	13,660	13,220	15,520	15,620	6,855	6,172
(WY)	(1996)	(1993)	(1993)	(1993)	(1996)	(2004)	(1993)	(1993)	(2004)	(1993)	(1993)	(1993)
MIN	1,019	2,037	2,977	2,768	1,873	2,394	3,010	2,710	2,484	2,011	1,767	1,355
(WY)	(2000)	(2000)	(1990)	(1990)	(2003)	(2000)	(1990)	(1998)	(1994)	(2003)	(2002)	(1998)

## SUMMARY STATISTICS

## FOR 2003 CALENDAR YEAR

## FOR 2004 WATER YEAR

## WATER YEARS 1989 - 2004

ANNUAL TOTAL	1,261,756	2,226,158		
ANNUAL MEAN	3,457	6,082	4,854	
HIGHEST ANNUAL MEAN			9,102	1993
LOWEST ANNUAL MEAN			3,512	2000
HIGHEST DAILY MEAN	10,300	Nov 23	21,700	May 24
LOWEST DAILY MEAN	526	Jul 6	644	Apr 29
ANNUAL SEVEN-DAY MINIMUM	1,250	Jul 3	1,620	Oct 28
ANNUAL RUNOFF (CFSM)	0.546		0.961	
ANNUAL RUNOFF (INCHES)	7.42		13.08	0.767
10 PERCENT EXCEEDS	6,720		13,900	9,500
50 PERCENT EXCEEDS	2,910		3,880	3,880
90 PERCENT EXCEEDS	1,480		1,820	1,820

(e) Estimated due to missing record