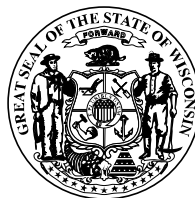


# Water Resources Data Wisconsin Water Year 2003

Water-Data Report WI-03-1



U.S. Department of the Interior  
U.S. Geological Survey



Prepared in cooperation with the  
State of Wisconsin  
and with other agencies

# CALENDAR FOR WATER YEAR 2003

## 2002

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2	1	2	3	4	5	7	7
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				

## 2003

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4						1							1	
5	6	7	8	9	10	11	2	3	4	5	6	7	8	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28		23	24	25	26	27	28	29
														30	31					

APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5					1	2	3	1	2	3	4	5	6	7
6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14
13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21
20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
27	28	29	30				25	26	27	28	29	30	31	29	30					

JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2		1	2	3	4	5	6
6	7	8	9	10	11	12	3	4	5	6	7	8	9	7	8	9	10	11	12	13
13	14	15	16	17	18	19	10	11	12	13	14	15	16	14	15	16	17	18	19	20
20	21	22	23	24	25	26	17	18	19	20	21	22	23	21	22	23	24	25	26	27
27	28	29	30	31			24	25	26	27	28	29	30	28	29	30				

# Conversion Factors

<b>Multiply</b>	<b>By</b>	<b>To obtain</b>
<b>Length</b>		
inch (in.)	$2.54 \times 10^1$	millimeter (mm)
	$2.54 \times 10^{-2}$	meter
foot (ft)	$3.048 \times 10^{-1}$	meter (m)
mile (mi)	$1.609 \times 10^0$	kilometer (km)
<b>Area</b>		
acre	$4.047 \times 10^3$	square meter (m <sup>2</sup> )
	$4.047 \times 10^{-1}$	square hectometer (hm <sup>2</sup> )
	$4.047 \times 10^{-3}$	square kilometer (km <sup>2</sup> )
square mile (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometer (km <sup>2</sup> )
<b>Volume</b>		
gallon (gal)	$3.785 \times 10^0$	liter (L)
	$3.785 \times 10^{-3}$	cubic meter (m <sup>3</sup> )
	$3.785 \times 10^0$	cubic decimeter (dm <sup>3</sup> )
million gallons (Mgal)	$3.785 \times 10^3$	cubic meter (m <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic hectometer (hm <sup>3</sup> )
cubic foot (ft <sup>3</sup> )	$2.832 \times 10^{-2}$	cubic meter (m <sup>3</sup> )
	$2.832 \times 10^1$	cubic decimeter (dm <sup>3</sup> )
cubic-foot-per-second-per-day [(ft <sup>3</sup> /s/d)]	$2.447 \times 10^3$	cubic meter (m <sup>3</sup> )
	$2.447 \times 10^{-3}$	cubic hectometer (hm <sup>3</sup> )
acre-foot (acre-ft)	$1.223 \times 10^3$	cubic meter (m <sup>3</sup> )
	$1.223 \times 10^{-3}$	cubic hectometer (hm <sup>3</sup> )
	$1.223 \times 10^{-6}$	cubic kilometer (km <sup>3</sup> )
<b>Flow rate</b>		
cubic foot per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liter (L/s)
	$2.832 \times 10^{-2}$	cubic meter per second (m <sup>3</sup> /s)
	$2.832 \times 10^1$	cubic decimeter per second (dm <sup>3</sup> /s)
gallon per minute (gal/min)	$6.309 \times 10^{-2}$	liter per second (L/s)
	$6.309 \times 10^{-5}$	cubic meter per second (m <sup>3</sup> /s)
	$6.309 \times 10^{-2}$	cubic decimeter per second (dm <sup>3</sup> /s)
million gallons per day (Mgal/d)	$4.381 \times 10^{-2}$	cubic meter per second
	$4.381 \times 10^1$	cubic decimeter per second (dm <sup>3</sup> /s)
<b>Mass</b>		
ton, short (2,000 lb)	$9.072 \times 10^{-1}$	megagram (Mg) or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$

U. S. DEPARTMENT OF THE INTERIOR  
GALE A NORTON, Secretary

U. S. GEOLOGICAL SURVEY  
CHARLES G. GROAT, Director

Prepared in cooperation with

Bad River Band of Lake Superior Chippewa Indians  
Bayfield County  
Black River Falls Municipal Utilities  
City of Barron  
City of Beaver Dam  
City of Delafield  
City of Fond du Lac  
City of Hillsboro  
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Lac Courte Oreilles Tribe  
Lac du Flambeau Band of Lake Superior Chippewa  
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Little St. Germain Lake District  
Madison Metropolitan Sewerage District  
Menominee Indian Tribe of Wisconsin  
Milwaukee County  
Oneida Indian Tribe of Wisconsin  
Price County  
Rock County Public Works Department  
Sokaogon Chippewa Community, Mole Lake Bank  
Southeastern Wisconsin Regional Planning Commission  
Stockbridge/Munsee Indian Tribe  
The University of Wisconsin-Extension, Geological and Natural History Survey  
Town of Delavan  
U.S. Army Corps of Engineers  
U.S. Department of Agriculture - Dairy Forage Research Center  
Village of Wittenberg  
Walworth County Metropolitan Sewerage District  
Wisconsin Department of Natural Resources  
Wisconsin Department of Transportation  
Wisconsin Historical Society, Wade House Historic Site

For additional information write to:

District Chief, Water Resources Division  
U.S. Geological Survey  
8505 Research Way  
Middleton, Wisconsin 53562

## PREFACE

This volume of the annual hydrologic data report of Wisconsin is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and water quality provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by a number of people who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines. Most of the data were collected, computed and processed from area field offices. Technicians-in-charge of the field offices are:

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Jeffrey J. Hanig, Merrill, northeast  
Josef Habale, Middleton, southwest

The data were collected, computed, and processed by the following personnel:

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H. L. Hanson	B. N. Lenz	T. D. Rutter	T. A. Wittwer
T.L. Hanson			

Additional assistance in data processing and preparation of the report was provided by R. B. Bodoh, M. M. Greenwood, G. W. Gill, H. R. House.

This report was prepared under the general supervision of Warren A. Gebert, District Chief; Herbert S. Garn, Supervisory Hydrologist; Peter E. Hughes, Supervisory Hydrologist; and James T. Krohelski, Supervisory Hydrologist.

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**SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH  
RECORDS ARE PUBLISHED IN THIS VOLUME**

[Letters after station names designate type of data: (c) chemical, (d) discharge, (g) gage height,  
(m) microbiological, (pr) precipitation, (r) radiochemical, (sd) secchi-depth, (s) sediment, (t) water temperature]

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**SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS  
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**SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH  
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[Letters after station names designate type of data: (c) chemical, (d) discharge, (g) gage height,  
(m) microbiological, (pr) precipitation, (r) radiochemical, (sd) secchi-depth, (s) sediment, (t) water temperature]

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**[Letters after station names designate type of data: (c) chemical, (d) discharge, (g) gage height,  
(m) microbiological, (pr) precipitation, (r) radiochemical, (sd) secchi-depth, (s) sediment, (t) water temperature]**

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## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

The following continuous-record surface-water discharge stations in Wisconsin have been discontinued. Daily streamflow records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (\*) after the station number are currently operated as crest-stage partial-record stations. Some of the discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

Station name	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<b>STREAMS TRIBUTARY TO LAKE SUPERIOR</b>			
Tower Avenue at Superior, WI	04024080	0.034	1993–95
Little Balsam Creek at Patzau, WI	04024314	4.89	1976–78
Little Balsam Creek near Patzau, WI	04024315	5.05	1976–78
Little Balsam Creek Tributary near Patzau, WI	04024318	0.60	1976–78
Little Balsam Creek near Foxboro, WI	04024320	6.27	1977–78
Amnicon River near Poplar (Amnicon Falls), WI	04025000	110	1914–16
Bois Brule (Brule) River near Brule, WI	04026000	160	1914–17
Sioux River near Washburn, WI	04026300*	33.9	1965–66
Pine Creek at Moquah, WI	04026347	6.20	1976–78
Pine Creek Tributary at Moquah, WI	04026348	0.48	1976–78
Pine Creek near Moquah, WI	04026349	19.9	1976–78
Bad River near Mellen, WI	04026450*	82.0	1971–75
Bad River at Mellen, WI	04026500	98.3	1948–55
Alder Creek near Upson, WI	04026870	22.2	1972–77
Montreal River near Kimball, WI	04028500	100	1924–26
West Fork Montreal River at Gile, WI	04029000	75.0	1918–26, 1943–47
West Fork Montreal River near Kimball, WI	04029500	86.2	1924–26
<b>STREAMS TRIBUTARY TO LAKE MICHIGAN</b>			
North Branch Pine River at Windsor Dam nr Alvin, WI	04063640*	27.8	1967–68
Pine River near Florence, WI	04064000	510	1914–23
Menominee River, at Mouth, at Marinette, WI	04067651	4,070	1988–90, 1994–95
Peshigo River at High Falls near Crivitz, WI	04068000	537	1912–57
Pensaukee River near Krakow, WI	04071795	35.8	1993–95
Pensaukee River near Pensaukee, WI	04071858	134	1973–96
Suamico River at Suamico, WI	04072000	60.7	1951–52
Lawrence Creek near Westfield, WI	04072750	13.4	1968–73
Grand River near Kingston, WI	04073050	73.5	1968–75
West Branch White River near Wautoma, WI	04073405	38.9	1964–65
Silver Creek at South Koro Road near Ripon, WI	040734644	36.2	1987–96
Wolf River near White Lake, WI	04075000	485	1935–38
Evergreen Creek near Langlade, WI	04075200*	8.09	1964–73
Wolf River above West Branch Wolf River, WI	04075500	616	1928–62
West Branch Wolf River at Neopit, WI	04076000	93.2	1911–17
West Branch Wolf River near Keshena, WI	04076500	163	1928–32
Wolf River near Shawano, WI	04077400	816	1907–09, 1910–2001
Little Wolf River near Galloway, WI	04079602	22.6	1974–79
Spaulding Creek near Big Falls, WI	04079700*	5.57	1964–66
Little Wolf River at Royalton, WI	04080000	507	1914–70, 1983–85
Tomorrow River near Nelsonville, WI	04080798	44.0	1993–95
Emmons Creek near Rural, WI	04080950	25.1	1968–74
Storm Sewer to Mirror Lake at Waupaca, WI	04080976	0.04	1971–74
Waupaca River near Waupaca, WI	04081000	265	1916–66, 1983–85
Daggets Creek at Butte Des Morts, WI	04081800	10.6	1977
West Branch Fond du Lac River at Fond du Lac, WI	04083000	83.1	1939–54
Parsons Creek, Upstream Site, near Fond du Lac, WI	04083420	5.3	1997–2001
Parsons Creek, Downstream Site, near Fond du Lac, WI	04083425	5.7	1997–2001
East Branch Fond du Lac River near Fond du Lac, WI	04083500	78.4	1939–54
Brothertown Creek at Brothertown, WI	04084200	5.10	1976–77
East River at Midway Road near De Pere, WI	04085109	47.0	1993–95
Bower Creek, at County MM, near De Pere, WI	04085119	14.8	1991–95, 1996–97



## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

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Station name	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<b>STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED</b>			
East Twin River at Mishicot, WI	04085281	110	1972-96
Otter Creek, at Willow Road, near Plymouth, WI	040857005	9.5	1991-2002
Onion River at Hingham, WI	04085813	37.2	1979-80
Onion River near Sheboygan Falls, WI	04085845	94.1	1979-82
Milwaukee River at Kewaskum, WI	04086150	138	1968-81
East Branch Milwaukee River near New Fane, WI	04086200	54.1	1968-81
North Branch Milwaukee River near Random Lake, WI	040863075	51.4	1993-95
North Branch Milwaukee River near Fillmore, WI	04086340	148	1968-81
Milwaukee River at Waubeka, WI	04086360	432	1968-81, 1994
Mud Lake Outlet near Decker Corner, WI	04086488	7.36	1983-84
Lincoln Creek, at 47th Street, at Milwaukee, WI	040869415	9.56	1993-1995, 1997 <sup>1</sup>
Milwaukee River above North Ave Dam at Milwaukee, WI	04087010	702	1982-84
Menomonee River at Germantown, WI	04087018	19.0	1975-77
Jefferson Park Drainageway at Germantown, WI	04087019	1.82	1976-78
Menomonee River at Butler, WI	04087040	60.6	1975-79
Little Menomonee River near Freistadt, WI	04087050	8.0	1975-79
Noyes Creek at Milwaukee, WI	04087060	1.94	1975-80, 1990
Little Menomonee River at Milwaukee, WI	04087070	19.7	1975-77
Honey Creek at Wauwatosa, WI	04087119	10.3	1975-81
Schoonmaker Creek at Wauwatosa, WI	04087125	1.94	1975-79
Hawley Road Storm Sewer at Milwaukee, WI	04087130	1.83	1975-77
Menomonee River at Milwaukee, WI	04087138	134	1982-84
Kinnickinnic River at Milwaukee, WI	04087160	20.4	1976-83
Milwaukee River at Mouth at Milwaukee, WI	04087170	872	1994-96
<b>ST. CROIX RIVER BASIN</b>			
Namekagon River at Leonards, WI	05331833	126	1996-2001
Namekagon River at Trego, WI	05332000	433	1914-27
Loon Creek near Danbury, WI	05335010	17.6	1970-71
Bashaw Brook near Shell Lake, WI	05335380	26.6	1964-66
Clam River near Webster, WI	05335500	361	1941-42
St. Croix River near Grantsburg, WI	05336000	2,980	1923-70
Wood River near Grantsburg, WI	05339000	185	1939-40
Rice Creek near Balsam Lake, WI	05341375	12.5	1988-89
Balsam Branch at Balsam Lake, WI	05341402	52.8	1988-90
Deer Lake Tributary #1, Upstream Site, near Centuria, WI	05341404	0.04	1998-99,2000-01
Deer Lake Tributary #1, Downstram Site, near Centuria, WI	05341405	0.38	1998-2001
<b>CHIPPEWA RIVER BASIN</b>			
West Fork Chippewa River at Lessards, nr Winter, WI	05355500	474	1912-16
Couderay River near Couderay, WI	05356121	169	1981-83
Flambeau River at Flambeau Flowage (Flambeau Reservoir), WI	05357500	622	1927-61
Flambeau River near Butternut, WI	05358000	688	1914-39
Pine Creek near Oxbo, WI	05358300	38.9	1971-75
Flambeau River at Babbs Island near Winter, WI	05358500	967	1929-75
South Fork Flambeau River near Phillips, WI	05359500	609	1929-75
Price Creek near Phillips, WI	05359600*	16.9	1964-66
Flambeau River near (at) Ladysmith, WI	05360000	1,790	1903-06, 1914-61
Chippewa River near Holcombe, WI	05361000	3,720	1944-49
South Fork Jump River near Ogema, WI	05361500	327	1944-54
Chippewa River at Holcombe, WI	05362500	4,680	1943-49
Fisher River at (near) Holcombe, WI	05363000	81.5	1944-45
O'Neil Creek near Chippewa Falls, WI	05363500	78.1	1944-45
Yellow River near Hannibal, WI	05363700	86.7	1962-63
Yellow River at Cadott, WI	05364000*	364	1943-61
Duncan Creek at Bloomer, WI	05364500*	50.3	1944-52

## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

Station name	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<b>CHIPPEWA RIVER BASIN--CONTINUED</b>			
Duncan Creek Tributary near Tilden, WI	05364850	4.17	1987-89
Duncan Creek at Chippewa Falls, WI	05365000	117	1943-55
Eau Claire River near Augusta, WI	05366000	509	1914-26
Bridge Creek at Augusta, WI	05366300	35.0	1980
Eau Claire River near Fall Creek, WI	05366500*	760	1943-55
Chippewa River at (near) Eau Claire, WI	05367000	6,620	1903-09, 1944-54
Red Cedar River at Cty Trunk Highway D at Birchwood, WI	06367102	70.8	2000-01
Sucker Creek at Loch Lamond Blvd near Birchwood, WI	05367154	12.3	2000-01
Hemlock Creek at Cty Trunk Highway F near Mikana, WI	05367190	20.4	2000-01
Red Cedar River at Red Cedar Lake Outlet at Mikana, WI	05367202	151	2000-01
Red Cedar River near Cameron, WI	05367425	442	1966-70
Red Cedar River near Cameron, WI	05367426	443	1971-73
Red Cedar River near Colfax, WI	05367500	1,100	1914-61, 1990
Eau Galle River at Low-Water Bridge at Spring Valley, WI	05369945	47.9	1982-83, 1986-96
French Creek near Spring Valley, WI	05369955	6.03	1981-83
Lousy Creek near Spring Valley, WI	05369970	5.97	1981-83
Lohn Creek near Spring Valley, WI	05369985	2.53	1981-83
Eau Galle River at Elmwood, WI	05370500	91.6	1943-54
<b>BUFFALO RIVER BASIN</b>			
Buffalo River near Tell, WI	05372000	406	1933-51
<b>WAUMANDEE CREEK BASIN</b>			
Joos Valley Creek near Fountain City, WI	05378183	5.89	1990-96
Eagle Creek, at County Highway G, near Fountain City, WI	05378185	14.3	1990-96
<b>TREMPEALEAU RIVER BASIN</b>			
Bruce Valley Creek near Pleasantville, WI	05379288	10.1	1980
Elk Creek near Independence, WI	05379305	108	1980
Trempealeau River near Trempealeau, WI	05380000	719	1932-34
<b>BLACK RIVER BASIN</b>			
Black River at Medford, WI	05380806	48.1	1984-87
Poplar River near Owen, WI	05380900*	155	1964-66
<b>LA CROSSE RIVER BASIN</b>			
Little LaCrosse River near Leon, WI	05382500	76.9	1934-61, 1979-81
LaCrosse River near West Salem, WI	05383000	396	1914-70
<b>COON CREEK BASIN</b>			
Spring Coulee Creek near Coon Valley, WI	05386490	9.01	1979-81
Coon Creek at Coon Valley, WI	05386500	77.2	1934-40, 1978-81
Coon Creek near Stoddard, WI	05386999	120	1934-40, 1979-81
<b>BAD AXE RIVER BASIN</b>			
North Fork Bad Axe River near Genoa, WI	05387100*	80.8	1964-66
<b>WISCONSIN RIVER BASIN</b>			
Wisconsin River at Conover, WI	05390180	177	1967-71
Pelican River near Rhinelander, WI	05391226	101	1976-79
Wisconsin River at Whirlpool Rapids, nr Rhinelander, WI	05392000	1,220	1906-61
Bearskin Creek near Harshaw, WI	05392350*	31.1	1964-66
Tomahawk River near Bradley, WI	05392400	422	1915-27, 1929
Tomahawk River at Bradley, WI	05393000	544	1930-73
New Wood River near Merrill, WI	05394000	82.2	1953-61
Rib River at Rib Falls, WI	05396000	303	1925-57
Little Rib River near Wausau, WI	05396500	79.1	1914-16

## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

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Station name	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<b>WISCONSIN RIVER BASIN--CONTINUED</b>			
East Branch Eau Claire River near Antigo, WI	05397000	81.5	1949-55
Eau Claire River near Antigo, WI	05397110	185	1975-81
Bull Junior Creek (Bull Creek Junior) nr Rothschild, WI	05398500	27.4	1944-52
Big Eau Pleine River near Colby, WI	05399000	78.1	1941-54
Hamann Creek near Stratford, WI	05399431	11.3	1977-79
Wisconsin River at Knowlton, WI	05400000	4,530	1921-42
Plover River near Stevens Point, WI	05400500	145	1914-20, 1944-52
Little Plover River near Arnott, WI	05400600	2.24	1959-75
Little Plover River at Plover, WI	05400650	19.0	1959-87
Fourmile Creek near Kellner, WI	05400870	75.0	1964-67
Buena Vista Creek near Kellner, WI	05400853	53.1	1964-67
Tenmile Creek Ditch 5 near Bancroft, WI	05401020	9.73	1964-73
Fourteenmile Creek near New Rome, WI	05401100	91.1	1964-79
Wisconsin River near Necedah, WI	05401500	5,990	1903-14, 1944-50
Big Roche a Cri Creek near Hancock, WI	05401510	9.61	1964-67
Big Roche a Cri Creek near Adams, WI	05401535	52.8	1964-78
Yellow River at Sprague, WI	05402500	392	1927-40
Yellow River at Necedah, WI	05403000	491	1941-57
Lemonweir River at New Lisbon, WI	05403500	507	1944-87, 1994
Hulbert Creek near Wisconsin Dells, WI	05403630	11.2	1971-77
Dell Creek near Lake Delton, WI	05403700	44.9	1957-65, 1971-80
Narrows Creek at Loganville, WI	05404200	40.1	1964-66
Wisconsin River at Prairie du Sac, WI	05406000	9,180	1946-54
Black Earth Creek at Cross Plains, WI	05406460	12.8	1985-86, 1990-93
Brewery Creek, Upstream Site, at Cross Plains, WI	05406469	10.1	2000-02
Brewery Creek at Cross Plains, WI	05406470	10.5	1985-86, 1990-2002
Black Earth Creek at Mills Street at Cross Plains, WI	05406476	25.5	1990-95
Garfoot Creek near Cross Plains, WI	05406491	5.39	1985-86, 1990-94, 1994-98
Black Earth Creek at South Valley Road nr Black Earth, WI	05406497	40.6	1990-93
Trout Creek at Confluence with Arneson Creek near Barneveld, WI	05406573	8.37	1976-78
Trout Creek at Twin Parks Dam 8 nr Barneveld, WI	05406574	9.02	1976-79
Trout Creek at County Highway T nr Barneveld, WI	05406575	12.1	1976-78
Trout Creek near Ridgeway, WI	05406577	13.5	1976-79
Knight Hollow Creek near Arena, WI	05406590	7.57	1976-78
Otter Creek near Highland, WI	05406640	16.8	1968-69, 1970-75
Kickapoo River at Ontario, WI	05407500	151	1939, 1973-77
Knapp Creek near Bloomingdale, WI	05408500	8.44	1955-69
West Fork Kickapoo River near Readstown, WI	05409000	106	1939
Kickapoo River at Soldiers Grove, WI	05409500	530	1939
North Fork Nederlo Creek near Gays Mills, WI	05409830	2.21	1968-79
Nederlo Creek near Gays Mills, WI	05409890	9.46	1968-80
Kickapoo River at Gays Mills, WI	05410000	617	1914-34, 1964-77
<b>GRANT RIVER BASIN</b>			
Pigeon Creek near Lancaster, WI	05413400*	6.93	1964-66
Kuenster Creek at Muskellunge Road nr North Andover, WI	054134435	9.59	1982-96
Rattlesnake Creek near North Andover, WI	05413449	42.4	1987-96
Rattlesnake Creek near Beetown, WI	05413451	45.2	1990-91
<b>GALENA RIVER BASIN</b>			
Little Platte River near Platteville, WI	05414213	79.7	1987-90
Sinsinawa River near Hazel Green, WI	05414800	24.9	1987-90
Pats Creek near Belmont, WI	05414894	5.42	1981-82
Madden Branch Tributary near Belmont, WI	05414915	2.83	1981-82
Madden Branch near Meekers Grove, WI	05414920	15.04	1981-82
Galena River at Buncombe, WI	05415000	125	1939-92

## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

Station name	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<b>APPLE RIVER BASIN</b>			
Apple River near Shullsburg, WI	05418731	9.34	1981–82
<b>ROCK RIVER BASIN</b>			
West Branch Rock River near Waupun, WI	05423000	40.7	1949–70, 1978–81
West Branch Rock River at County Trunk Highway D near Waupun, WI	05423100	43.9	1978–81
West Branch Rock River at State Highway 49 nr Waupun, WI	05423510	113	1998–2001
East Branch Rock River near Mayville, WI	05424000	179	1949–70, 1998–2001
Rubicon River near Slinger, WI	05424095	7.97	1999–2001
Rubicon River at Pike Lake Outlet near Hartford, WI	054240957	12.31	1999–2001
Johnson Creek near Johnson Creek, WI	05425537	1.13	1978–80
Johnson Creek near Johnson Creek, WI	05425539	13.3	1978–80
Pratt Creek near Juneau, WI	05425928	3.54	1978–80
Rock River at Jefferson, WI	05426031	1,850	1978–94 <sup>2</sup>
Whitewater Creek near Whitewater, WI	05426500	11.8	1926–28, 1946–54
Whitewater Creek at Millis Road near Whitewater, WI	05426900	20.6	1978–81
Whitewater Creek at Whitewater, WI	05427000	22.8	1926–28, 1946–54
Koshkonong Creek near Rockdale, WI	05427507	150	1977–82
Token Creek near Madison, WI	05427800	24.3	1964–66, 1976–81
Sixmile Creek near Waunakee, WI	05427900	41.1	1976–82
South Fork Pheasant Branch at Highway 14 near Middleton, WI	05427945	5.74	1978–81
Pheasant Branch at Century Avenue at Middleton, WI	05427950	20.8	1977–81
Pheasant Branch at mouth at Middleton, WI	05427952	24.5	1978–81
Willow Creek at Madison, WI	05427970	3.15	1974–83
Olbrich Park Storm Ditch at Madison, WI	05428665	2.57	1976–80
Manitou Way Storm Sewer at Madison, WI	05429040	0.23	1971–77
Nakoma Storm Sewer at Madison, WI	05429050	2.30	1972–77
Lake Wingra Outlet at Madison, WI	05429120	6.00	1971–77
Nine Springs Creek Storm Sewer Tributary at Madison, WI	05429268	0.18	1991–93
Door Creek near Cottage Grove, WI	05429580	15.3	1976–79
Yahara River near Edgerton, WI	05430000	430	1917–18
Oregon Branch at Oregon, WI	05430030	9.93	1979–81
Badfish Creek at County Highway A near Stoughton, WI	05430095	40.9	1956–66, 1986–88
Badfish Creek near Stoughton, WI	05430100	41.3	1956–66
Delavan Lake Trib at South Shore Drive at Delavan, WI	05431018	7.66	1985–86, 1989–91
Jackson Creek at Petrie Road near Elkhorn, WI	05431014	8.96	1984–95
Livingston Branch Pecatonica River nr Livingston, WI	05432055	16.4	1987–91
Yellowstone River near Blanchardville, WI	05433500*	28.5	1954–65, 1978–79
Pecatonica River at Dill, WI	05434000	944	1914–19
Steiner Branch near Waldwick, WI	05433510	5.9	1978–79
Skinner Creek at Skinner Hollow Road near Monroe, WI	05434235	32.6	1978–81
Skinner Creek at Klondyke Road near Monroe, WI	05434240	35.0	1978–81
West Branch Sugar River near Mount Vernon, WI	05435980	32.7	1979–80
Mount Vernon Creek near Mount Vernon, WI	05436000	16.4	1954–65, 1976–80
<b>ILLINOIS RIVER BASIN</b>			
Fox River, at Watertown Road, near Waukesha	05543800	77.4	1992–2000
White River near Burlington, WI	05545300	110	1964–66, 1973–82
Unnamed Lauderdale Lakes Trib No. 2 near Lauderdale, WI	05544793	0.19	1999–2001
Birches Creek at Lackey Lane near Lake Geneva, WI	05545133	2.07	1998–2001

<sup>1</sup> No winter record in water year 1997<sup>2</sup> No winter record in water years 1993 and 1994

## DISCONTINUED SURFACE-WATER-QUALITY STATIONS

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The following daily- or continuous-record surface-water-quality stations were discontinued prior to the 2003 water year. Discontinued stations with less than 1 year of record or where data collection frequency was less than daily are not included. Some of the stations in the list are still in operation for purposes other than collection of daily or continuous water-quality data. Information regarding these stations may be obtained from the District Office at the address given on the back of the title page of this report.

[Type of record: T (water temperature), SC (specific conductance.), DO (dissolved-oxygen concentration), PH (pH), SED (daily sediment discharge), C (daily discharge of one or more chemical constituents)]

Station name	Station number	Drainage area (mi <sup>2</sup> )	Type of record	Period of record
<b>STREAMS TRIBUTARY TO LAKE SUPERIOR</b>				
Little Balsam Creek at Patzau, WI	04024314	5.00	SED	1976–78
Little Balsam Creek near Patzau, WI	04024315	4.57	SED	1976–78
Little Balsam Creek Tributary near Patzau, WI	04024318	0.64	SED	1976–78
Little Balsam Creek near Foxboro, WI	04024320	6.27	SED	1977–78
Nemadji River near South Superior, WI	04024430	420	SED	1974–78
North Fish Creek near Benoit, WI	04026346	36	SED	1990–91
Pine Creek at Moquah, WI	04026347	5.90	SED	1976–78
Pine Creek Tributary at Moquah, WI	04026348	0.57	SED	1976–78
Pine Creek near Moquah, WI	04026349	21.5	SED	1976–78
North Fish Creek near Moquah, WI	040263491	65.4	SED	1990–91
North Fish Creek near Ashland, WI	04026350	74.4	SED	1990–91
Bad River near Odanah, WI	04027000	597	T,SC	1976–78
White River near Mason, WI	04027080	--	T	1970–72
Sadjak Springs Trib to White River near Mason, WI	04027086	1.00	T	1970–72
Bad River at Odanah, WI	04027595	970	T,SC	1978–81
<b>STREAMS TRIBUTARY TO LAKE MICHIGAN</b>				
Escanaba River at mouth at Escanaba, MI	040590345	928	SED	1988–90
Menominee River near McAllister, WI	04067500	3,930	T,SC	1979–80
			SED	1988–90
Menominee River at mouth at Marinette, WI	04067651	4,070	SED	1988–90
Peshtigo River at Peshtigo, WI	04069500	1,080	T	1989–90
			SED	1988–90
Peshtigo River at mouth near Peshtigo, WI	04069530	1,100	SED	1988–90
Oconto River near Oconto, WI	04071765	966	SED	1989–90
Oconto River at mouth at Oconto, WI	04071775	982	SED	1989–90
Duck Creek near Howard, WI	04072150	108	C	1992
Parsons Creek, Upstream Site, near Fond du Lac, WI	04083420	5.3	T	1998–2001
			C	1997–99,2000–01
Parsons Creek, Middle Site, near Fond du Lac, WI	04083423	5.6	C	1997–99,2000–01
Parsons Creek, Downstream Site, near Fond du Lac, WI	04083425	5.7	T	1997–2001
			C	1997–99,2000–01
Fox River at Appleton, WI	04084445	5,950	T	1987–90
			SED	1986–90
Fox River at State Highway 55 at Kaukauna, WI	04084475	5,980	SED	1989–90
Fox River at Wrightstown, WI	04085000	6,050	T,SC	1975–81
Fox River at Little Rapids, WI	04085054	6,100	SED	1989–90
Fox River at De Pere, WI	04085059	6,110	SED	1989–90
Bower Creek at Sunnyview Road near De Pere, WI	04085118	4.82	SED,C	1985–86
Bower Creek at Highway MM near DePete, WI	04085119	14.8	T,C	1991-97 <sup>2</sup>
Fox River at mouth at Green Bay, WI	04085139	6,330	T,SC,DO,PH	1989–90
Manitowoc River at Manitowoc, WI	04085427	526	T,SC	1979–80
Cedar Lake near Kiel, WI	04085500	1.43	T	1974–77
Otter Creek #3A at County Highway J near Plymouth, WI	0408570045	9.10	C	1994–97 <sup>2</sup>
Otter Creek at Laack Farm near Plymouth, WI	0408570047	9.16	C	1994–97 <sup>2</sup>
Otter Creek, at Willow Road, near Plymouth, WI	040857005	9.5	T	1991–2002
			C, SED	1991–97,1999–2002
			DO	1991–97
Onion River at Hingham, WI	04085813	37.2	T,SC,SED	1979–80
			C	1980

## DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi <sup>2</sup> )	Type of record	Period of record
<b>STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED</b>				
Onion River near Sheboygan Falls, WI	04085845	94.1	T,SC,SED	1979-80
			C	1980
Parnell Creek near Dundee, WI	04086175	9.35	T	1997
Milwaukee River near Cedarburg, WI	04086600	607	SED	1982-84
Lincoln Creek at 47th Street at Milwaukee, WI	040869415	9.56	T	1993-97 <sup>2</sup>
			DO	1994-97 <sup>2</sup>
Milwaukee River at Milwaukee, WI	04087000	696	SED	1982-84
Milwaukee River above North Avenue Dam at Milwaukee, WI	04087010	702	SED	1982-84
Menomonee River at Germantown, WI	04087018	19	SED	1975-77
Jefferson Park Drain at Germantown, WI	04087019	1.82	SED	1977-78
Menomonee River at Menomonee Falls, WI	04087030	34.7	SED	1975-77, 1982-84
Menomonee River at Butler, WI	04087040	60.64	SED	1975-77
Little Menomonee River near Freistadt, WI	04087050	8.0	SED	1975-77
Noyes Creek at Milwaukee, WI	04087060	1.94	SED	1975-77
Little Menomonee River at Milwaukee, WI	04087070	19.7	SED	1975-77
Underwood Creek at Wauwatosa, WI	04087088	18.2	SED	1975-77
Honey Creek at Wauwatosa, WI	04087119	10.3	SED	1975-77
Menomonee River at Wauwatosa, WI	04087120	123	SED	1975-77, 1982-84
Schoonmaker Creek at Wauwatosa, WI	04087125	1.94	SED	1975-77
Hawley Road Storm Sewer at Wauwatosa, WI	04087130	1.83	SED	1975-77
Menomonee River at Milwaukee, WI	04087138	134	SED	1983-84
Menomonee River at Falk Corp at Milwaukee, WI	04087140	133.82	SED	1975-77, 1982
Kinnickinnic River at South 11th Street at Milwaukee, WI	04087159	20.2	SED	1983-84
<b>ST. CROIX RIVER BASIN</b>				
Round Lake near Gordon, WI	461342091561002	--	T	1981-85
Namekagon River at Leonards, WI	05331833	126	T,SC	1996-2001
St. Croix River at St. Croix Falls, WI	05340500	6,240	SC	1975-81
			SED	1982
Rice Creek near Balsam Lake, WI	05341375	12.5	C	1988-89
Balsam Branch at Balsam Lake, WI	05341402	52.8	C	1988-89
Deer Lake Tributary #1, Downstream Site, near Centuria, WI	05341405	0.38	T	1998,1999-2001
<b>CHIPPEWA RIVER BASIN</b>				
Bear River near Manitowish Waters, WI	05357335	81.3	SED,C	1991-94
Duncan Creek Tributary near Tilden, WI	05364850	4.17	T,C,SED	1987-89
			DO	1987-88 <sup>1</sup>
Red Cedar River at Cty Trunk Highway D at Birchwood, WI	05367102	70.8	SED,C	2000-01
Sucker Creek at Loch Lamond Blvd near Birchwood, WI	05367154	12.3	SED,C	2000-01
Hemlock Creek near Mikana, WI	05367190	20.4	SED,C	2000-01
Red Cedar River at Mikana, WI	05367202	151	C	2000-01
Red Cedar River near Colfax, WI	05367500	1,090	C	1959, 1990
Hay River at Wheeler, WI	05368000	418	C	1959, 1990
Chippewa River at Durand, WI	05369500	9,010	T,SC	1975-81 <sup>2</sup>
			SED	1974-79
Eau Galle River near Woodville, WI	05369900	39.4	T,SC	1978-83 <sup>2</sup>
Eau Galle River at Low-Water Bridge at Spring Valley, WI	05369945	47.9	T	1982-83, 1987-93
			SC	1983
Eau Galle River at Spring Valley, WI	05370000	64.1	T,SC	1978-90
<b>WAUMANDEE CREEK BASIN</b>				
Joos Valley Creek near Fountain City, WI	05378183	5.89	DO	1990-92
Eagle Creek at County Highway G near Fountain City, WI	05378185	14.3	DO	1990-92
<b>TREMPEALEAU RIVER BASIN</b>				
Bruce Valley Creek near Pleasantville, WI	05379288	10.1	T,SC,SED,C	1980
Elk Creek near Independence, WI	05379305	108	T,SC,SED,C	1980
<b>BLACK RIVER BASIN</b>				
Black River near Galesville, WI	05382000	2,080	SED	1976-79

## DISCONTINUED SURFACE-WATER-QUALITY STATIONS

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Station name	Station number	Drainage area (mi <sup>2</sup> )	Type of record	Period of record
<b>WISCONSIN RIVER BASIN</b>				
Lake Clara near Tomahawk, WI	453100089343002	0.46	T	1982–86
Little Rock Lake near Woodruff, WI	455946089415704	--	T	1984–87
Buena Vista Creek near Kellner, WI	05400853	53.1	T	1965–67
Tenmile Creek Ditch 5 near Bancroft, WI	05401020	9.73	T	1965–72
Dell Creek near Lake Delton, WI	05403700	44.9	T,SED	1958–65
Black Earth Creek at Cross Plains, WI	05406460	12.8	C,SED	1985–86
			T,DO	1985–86, 1990–95
Brewery Creek, Upstream Site, at Cross Plains	05406469	10.1	T	2000–02
Brewery Creek at Cross Plains, WI	05406470	10.5	T	1985–86, 1990–98, 2000–02
			SED	1985–86, 1990–98
			C	1985–86, 1990–98
			DO	1990–91
Black Earth Creek at Mills Street at Cross Plains, WI	05406476	25.5	T,DO	1990–95
Garfoot Creek near Cross Plains, WI	05406491	5.39	SED	1985–86, 1992–98
			DO	1984–85, 1990–98
			T,C	1985–86, 1990–98
Black Earth Creek at South Valley Rd near Black Earth, WI	05406497	40.6	T,DO	1990–98
Black Earth Creek at Black Earth, WI	05406500	45.6	T	1954–65, 1985–86
			DO	1986 <sup>1</sup>
			SED	1956–65, 1985–86
			C	1985–86
Trout Creek Confluence Arneson Creek near Barneveld, WI	05406573	8.37	T,SC	1976–79
Trout Creek at Twin Parks Dam 8 near Barneveld, WI	05406574	9.02	SED	1976–79
Trout Creek at CTH T near Barneveld, WI	05406575	12.1	T,SED	1976–78
Trout Creek near Ridgeway, WI	05406577	13.5	T,SED	1976–79
Wisconsin River at Muscodia, WI	05407000	10,400	T,SC	1975–80 <sup>1</sup> , 1981
			SED	1975–79
Kickapoo River at Hwy 33 at Ontario, WI	05407470	117	T,SED	1973
Kickapoo River at Ontario, WI	05407500	150	T	1974–77
			SED	1973–77
Kickapoo River near Rockton, WI	05407920	260	T,SED	1972–77
Kickapoo River at LaFarge, WI	05408000	266	T,SC	1971–77
			SED	1972–77
North Fork Nederlo Creek at mouth near Gays Mills, WI	05409842	2.31	T	1970 <sup>1</sup> , 1974–78
South Fork Nederlo Creek near Gays Mills, WI	05409860	4.11	T	1970 <sup>1</sup> , 1974–78
Nederlo Creek at Utica Town Hall near Gays Mills, WI	05409870	6.70	T	1968–78
<b>GRANT RIVER BASIN</b>				
Kuenster Creek at Muskellunge Road near North Andover, WI	054134435	9.59	T,DO	1992–96
			C	1993–96
Rattlesnake Creek near North Andover, WI	05413449	42.4	T,DO	1987–96
			C	1992–94
<b>GALENA RIVER BASIN</b>				
Little Platte River near Platteville, WI	05414213	79.7	T	1987–90
			DO	1987–90 <sup>1</sup>
Sinsinawa River near Hazel Green, WI	05414800	24.9	T	1987–90
			DO	1987–90 <sup>1</sup>
Pats Creek near Belmont, WI	05414894	5.42	T,SC,C	1981–82
			DO	1982 <sup>1</sup>
Madden Branch Tributary near Belmont, WI	05414915	2.83	T,SC,C	1981–82
			DO	1981 <sup>1</sup>
Madden Branch near Meekers Grove, WI	05414920	15.06	T,SC,C	1981–82
			DO	1981–82 <sup>1</sup>
			PH	1982 <sup>1</sup>
<b>APPLE RIVER BASIN</b>				
Apple River near Shullsburg, WI	05418731	9.34	T,SC,C	1981–82
			DO	1981 <sup>1</sup>

## DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number <sup>1</sup>	Drainage area (mi <sup>2</sup> )	Type of record	Period of record
<b>ROCK RIVER BASIN</b>				
Rock River at Horicon, WI	05424057	456	C	1998–2003
Dead Creek near Hustisford, WI	05424075	26.1	C	2002–03
Rock River at Hustisford, WI	05424082	511	C	1999–2003
Rubicon River near Slinger, WI	05424095	7.79	C	1998–2000
Rubicon River at Pike Lake Outlet near Hartford, WI	054240957	12.31	C	1998–2000
Crawfish River at Milford, WI	05426000	762	SED	1980–82
Rock River at Indianford, WI	05427570	2,630	T	1975–78
			SC,DO,PH	1976–78
South Fork Pheasant Branch at Hwy 14 near Middleton, WI	05427945	5.74	SED	1978–81
Pheasant Branch at Centruy Avenue at Middleton, WI	05427950	20.8	SED	1978–81
Pheasant Branch at mouth at Middleton, WI	05427952	24.5	SED	1978–81
Willow Creek at Madison, WI	05427970	3.15	SED	1973–84
Rock River at Afton, WI	05430500	3,340	T	1955–83
Jackson Creek at Petrie Road near Elkhorn, WI	05431014	8.96	C,SED	1984–85
				1993–95
Delavan Lake Trib at South Shore Drive at Delavan, WI	05431018	9.99	SED,C	1984–85, 1990–91
Livingston Branch Pecatonica River near Livingston, WI	05432055	16.4	T	1987–91
			DO	1987–91 <sup>1</sup>
Yellowstone River near Blanchardville, WI	05433500	28.5	T	1954–60
			SED	1958–60, 1978–79
Steiner Branch near Waldwick, WI	05433510	5.90	T,SC,SED,C	1978–79
Pecatonica River at Martintown, WI	05434500	1,034	SED	1980–82
Mount Vernon Creek near Mount Vernon, WI	05436000	16.4	T	1954–60
			SED	1956–60
Sugar River near Brodhead, WI	05436500	523	SED	1978–86
<b>ILLINOIS RIVER BASIN</b>				
Birches Creek at Lackey Lane near Lake Geneva, WI	05545133	2.07	T	1998–2000
			SED,C	1997–1999
Powers Lake Tributary at Powers Lake, WI	05548163	1.83	C	1987

<sup>1</sup> Seasonal record, non-freezing periods<sup>2</sup> Numerous periods of missing record<sup>3</sup> Station currently in operation for constituents(s) not listed here



## INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with local, State and Federal agencies, obtains a large amount of data pertaining to the water resources of Wisconsin each year. These data, accumulated during many years, constitute a valuable data base for developing an improved understanding of the water resources of the state. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Wisconsin." Lake stage and in-lake water-quality data previously published in this series are now published annually in a report series "Water-Quality and Lake-Stage Data for Wisconsin Lakes." This Open-File Report series began in 1994; 2003 water year data for lakes are published in OF 2004-1087.

Water-resources data for Wisconsin for the 2003 water year includes records of streamflow at gaging stations, partial-record stations, and miscellaneous sites; stage and contents of lakes and reservoirs; chemical, physical, and biological characteristics of surface and ground water; and water levels in observation wells. Records from several stations in bordering states are also included. This report contains discharge records from 171 gaging stations and peak stage and discharge from 84 crest-stage stations; stage for 9 lakes and contents for 24 reservoirs; water-quality data from 40 streams and from 3 lakes; precipitation from 19 sites; and water-level records from 40 observation wells. Additional water data were collected at various sites not involved in the systematic data-collection program, and are published in this report as miscellaneous measurements.

This series of annual reports for Wisconsin began in the 1961 water year with streamflow data, the 1964 water year with water-quality data, and the 1971 water year with ground-water data. Beginning with the 1975 water year, streamflow, water-quality, and ground-water data for each state were published in present format. These annual reports are for sale, in paper copy or microfiche, by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. Recent versions of these reports can be found online. Visit : <http://wi.water.usgs.gov/pubs> and then click on "online publications".

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Wisconsin were published in U.S. Geological Survey Water-Supply Papers. Records of stream discharges and of water levels in lakes and reservoirs were published annually through 1960 and then for the 5-year periods 1961-65 and 1966-70 in the series "Surface-Water Supply of the United States". Chemical-quality, water-temperature, and suspended-sediment data were published annually, from 1941 to 1970, in the series "Quality of Surface Waters of the United States." Records of ground-water levels were published annually from 1935 to 1974, in the series "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Box 25425, Federal Center, Denver, CO 80225.

Publications similar to this report are published annually by the Geological Survey for all states. These official Survey reports have an identification number consisting of the two-letter state abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report WI-03-1." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Additional information, including current prices for ordering specific reports, may be obtained from the District Chief at the address given on the back of the title page, or by telephone (608)828-9901.

Water-resources data, including stage and discharge data at most streamflow-gaging stations, water levels in selected wells, and some water-quality data, are available through the World Wide Web on the Internet. Current and historical data provided in water-data reports are available. The Universal Resource Locator (URL) to the Wisconsin District's home page is: <http://wi.water.usgs.gov/>. Information on all U.S. Geological Survey reports and products (including maps, images, and computerized data) is available by calling 1-888-ASK-USGS. Additional earth science information is available by accessing the U.S. Geological Survey Home Page at <http://www.usgs.gov>.

## COOPERATION

The U.S. Geological Survey and the State of Wisconsin have worked under cooperative agreements since 1913 collecting streamflow data, since 1955 collecting water-quality data, and since 1964 collecting ground-water level data. Agencies that worked cooperatively with the Survey during this year collecting data are:

- Bad River Band of Lake Superior Chippewa Indians
- Bayfield County
- Black River Falls Municipal Utilities
- City of Barron
- City of Beaver Dam
- City of Delafield
- City of Fond du Lac
- City of Hillsboro
- City of Madison
- City of Middleton
- City of Muskego
- City of Peshtigo
- City of Sparta
- City of Thorp
- City of Waupun

Dane County Department of Planning and Development  
 Dane County Department of Public Works  
 Dane County Regional Planning Commission:  
     City of Madison  
     City of Middleton  
     Village of Westport  
 Department of Agriculture, Trade and Consumer Protection  
 Federal Energy Regulatory Commission Licensees:  
     Appleton Papers  
     Dairyland Power Cooperative  
     Excel Energy (NSP)  
     Stora Enso  
     Wisconsin Electric Power Company  
     Wisconsin Public Service Corporation  
     Wisconsin Valley Improvement Company  
 Fontana/Walworth Water Pollution Control Commission  
 Geneva Lake Environmental Agency  
 Green Bay Metropolitan Sewerage District  
 Green Lake Sanitary District  
 Illinois Department of Transportation  
 Kickapoo Valley Reserve  
 Lac Courte Oreilles Tribe  
 Lac du Flambeau Band of Lake Superior Chippewa  
 Little Muskego Lake District  
 Little St. Germain Lake District  
 Madison Metropolitan Sewerage District  
 Menominee Indian Tribe of Wisconsin  
 Milwaukee County  
 Oneida Indian Tribe of Wisconsin  
 Price County  
 Rock County Public Works Department  
 Sokaogon Chippewa Community, Mole Lake Band  
 Southeastern Wisconsin Regional Planning Commission:  
     Milwaukee Metropolitan Sewerage District  
     Waukesha County  
     City of Racine  
     Kenosha Water Utility  
 Stockbridge/Munsee Indian Tribe  
 The University of Wisconsin-Extension, Geological and Natural History Survey  
 Town of Delavan  
 U.S. Army Corps of Engineers  
 U.S. Department of Agriculture, Dairy Forage Research Center  
 Village of Wittenberg  
 Walworth County Metropolitan Sewerage District  
 Wisconsin Department of Natural Resources  
 Wisconsin Department of Transportation  
 Wisconsin Historical Society, Wade House Historic Site

The following organizations aided in collecting streamflow records: Appleton Papers, Excel Energy (NSP) and Wisconsin Valley Improvement Co. Organizations that provided data are acknowledged in station descriptions.

## SUMMARY OF HYDROLOGIC CONDITIONS

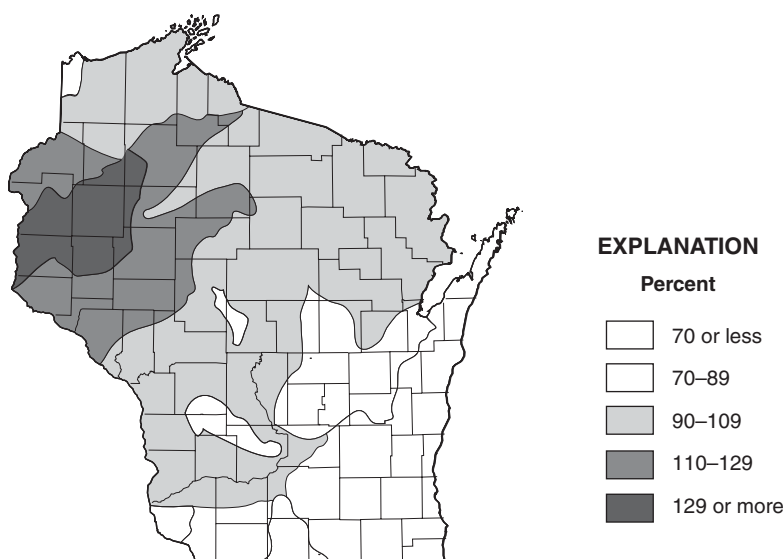
### Streamflow

The statewide average precipitation for the 2003 water year was 27.42 inches, which was 5.22 inches less than the normal annual precipitation of 32.64 inches for water years 1971-2000. Average precipitation values affecting streamflow conditions ranged from 67 percent in southeast Wisconsin to 99 percent in northeast Wisconsin with a statewide average of 84 percent (summary tables provided by Ed Hopkins, State Climatology Office, University of Wisconsin, Madison, written commun., 2004).

The year started out with above normal precipitation for the state in October, especially the northern and central parts of the state. The only exception to this was the southeast region of the state, which had close to normal precipitation at 97% of the normal 1970-2000 October precipitation. The statewide October average precipitation was 159% of normal October precipitation. For the next 3 months all regions of the

state were very dry. Statewide precipitation in November was only 18% of normal; December was 44% of normal and January was 31% of normal. In February, the statewide average precipitation was still only 66% of normal but the north central (100%) and northeast (111%) regions were near normal while the south central (28%) and southeast (27%) were very dry. The remaining regions of the state were also quite dry, ranging from 44% of normal in the southwest region to 77% in the west central region. In March, the northern and central regions of the state had close to normal precipitation while the southern regions remained dry (71% of normal). In April, the southern regions of the state were again drier than normal (55%), the central regions were moderately drier than normal (85%) and the northern regions were slightly wetter than normal (135%), especially the north central region with precipitation 157% of normal. In May, the statewide average precipitation was 142% of normal. The southern part of the state finally got some relief with precipitation 159% of normal, the northern regions of the state had 131% of normal and the central regions of the state received 139% of the normal precipitation. In June, all regions of the state had below normal precipitation except for the northwest, which was near normal at 103%. The southern part of the state was again the driest part of the state at 66% of normal; the central part of the state had 85% and the northern part of the state had 89% of normal precipitation. In July, the statewide average precipitation was 83% of normal with all regions falling below normal except for the east central region, which had 127% of normal precipitation. August statewide precipitation was 48% of normal with all regions falling below normal. In September, the statewide precipitation was 85% of normal with all regions falling below normal except the northeast which had 120% of normal precipitation. The southeast region (57%), the west central region (66%) and the north central regions (71%) were considerably below normal. To summarize the 2003 water year precipitation on a statewide basis, it was a near normal fall and spring with a very dry winter and a dry summer.

Runoff for rivers in the state ranged from 22 percent of the average annual runoff (1985-2003) at the Beaver Dam River station in the east-central part of the state to 167 percent of the average annual runoff (1914-1920 and 1986-2003) at the Apple River station near Sommerset in the northwest part of the state. Runoff in the 2003 water year for stations with drainage areas greater than 150 square miles and at least 20 years of record is shown in figure 1.

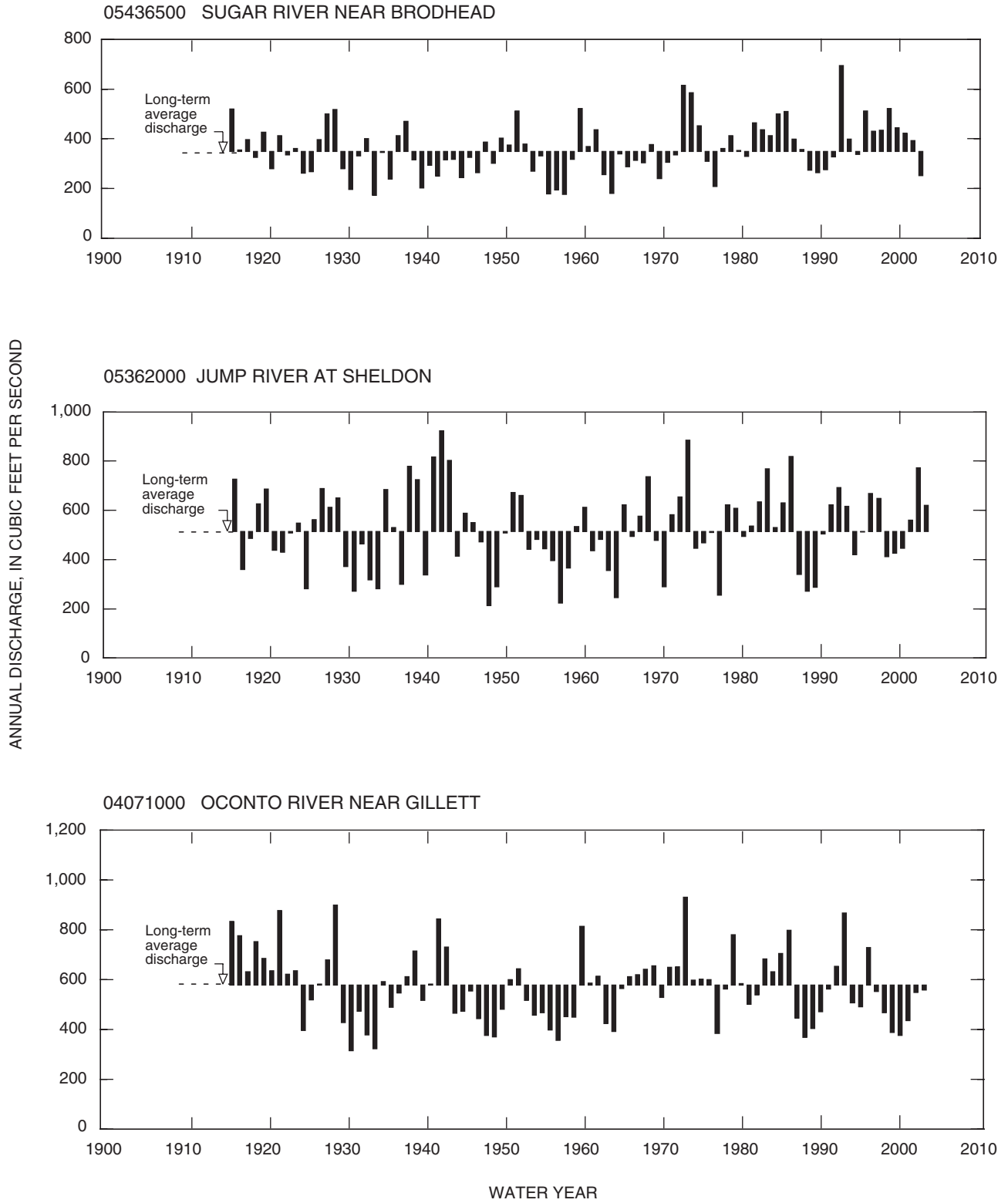


**Figure 1.** 2003 runoff as percentage of long-term average runoff.

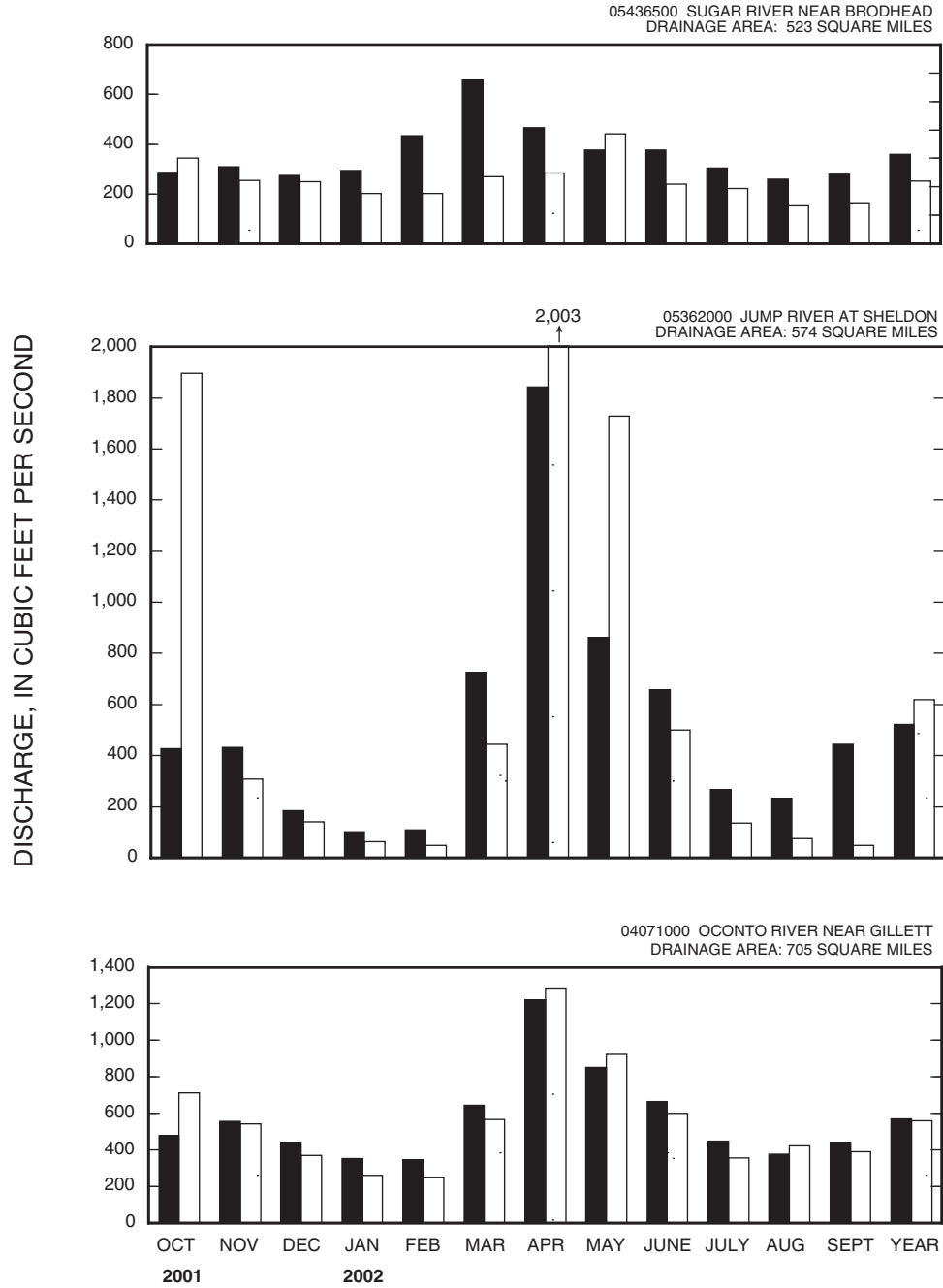
Annual discharges for the individual water years (1916-2003) at the Oconto River near Gillett, Jump River at Sheldon, and Sugar River near Brodhead are shown in Figure 2. Comparisons between the monthly and annual discharges for the 2003 water year and an 88-year period at the same three gaging stations are shown in Figure 3.

Water year 2003 was a dry year – it will be remembered more for low-flows than flooding. In mid-August, Governor Doyle declared a statewide emergency for farmers due to the dry conditions (Wisconsin State Journal, 8/20/03). Fifteen stations had annual minimum 7-consecutive day average flows (Q7) that equaled or exceeded their 10-year recurrence intervals. Several of them were the lowest on record, including the Root River near Franklin, which exceeded the 100-year recurrence interval. The Q7 values, the date of occurrence and the recurrence intervals for these stations are listed in table 1.

WATER RESOURCES DATA - WISCONSIN, 2003



**Figure 2.** Comparison of annual discharge at representative gaging stations to their long-term average discharge for water years 1916–2003 .



**Figure 3.** Comparison of discharge at representative gaging stations during 2003 water year with discharge for 1916–2003.

Table 1. Stations where the lowest mean discharge for 7 consecutive days (Q7) had recurrence intervals of 10 or more years

Station number	Station name	Years of Record	Date	Q7 (cfs)	Approximate recurrence interval (years)
04073462	White Cr. near Green Lake	13	Jan. 13	0.01*	40
04073468	Green Lake Inlet near Green Lake	16	Jan. 21	1.2*	40
04073500	Fox River at Berlin	106	Sep. 4	340	10
04074950	Wolf River at Langlade	37	Jan. 23	150	25
04077630	Red River at Morgan	12	Jan. 21	57*	15
04085200	Kewaunee River near Kewaunee	39	Jan. 19	6.1*	80
04087030	Menomonee River at Menomonee Falls	28	Feb. 9	1.1	25
04087120	Menomonee River at Wauwatosa	29	Sep. 1	5.7	15
04087220	Root River near Franklin	41	Sep. 6	0.99*	>100
04087240	Root River at Racine	41	Jan. 21	2.0	40
05365707	N. Fork Eau Claire River near Thorp	18	Sep. 5	0.18	30
05382325	La Crosse River at Sparta	12	Aug. 18	87*	20
05394500	Prairie River near Merrill	82	Jan. 18	55	50
05402000	Yellow River at Babcock	59	Sep. 5	3.3	10
05544200	Mukwonago River at Mukwonago	31	Sep. 5	8.3	15

\* indicates the lowest Q7 on record

Water year 2003 had only a few instances of minor localized flooding and none of the continuously gaged rivers in the state had record flood peaks. However, there were several sites that had peak discharges of note. Stations that recorded a peak discharge that equaled or exceeded the 5-year recurrence interval are listed in table 2.

Table 2. Stations that recorded a peak discharge that equaled or exceeded the 5-year recurrence interval

Station number	Station name	Drainage area (mi <sup>2</sup> )	Date	Instantaneous peak discharge (ft <sup>3</sup> /s)	Peak of record (y/n)	Approximate recurrence interval (years)
04026450	Bad River near Mellen	82.0	May 12	2,880	y	75**
04027000	Bad River near Odanah	597	May 12	20,600	n	50
04027200	Pearl Creek at Grandview	16.9	May 11	395	n	10
04027500	White River near Ashland	301	May 11	4,500	n	8
04029990	Montreal River at Saxon Falls	262	May 12	8,520*	n	75
04074850	Lily River near Lily	45.6	Apr. 21	127	n	5
0407809265	Middle Br. Embarrass River near Wittenberg	76.3	Apr. 17	693	n	7
05332500	Namekagon River near Trego	488	Oct. 8	1,950*	n	7
05341500	Apple River near Somerset	579	May 15	2,450	n	40
05356000	Chippewa River near Winter	790	May 12	5,560	n	9
05356500	Chippewa River near Bruce	1650	May 12	15,200	n	8
05360500	Flambeau River near Bruce	1860	May 13	17,400	n	20
05357225	Stevenson Cr-Boulder Jct	7.96	Jul. 3	29	n	40
05357245	Trout River near Boulder Jct	46.2	May 12	88	n	9
05365500	Chippewa River at Chippewa Falls	5650	May 13	54,500	n	6
05369500	Chippewa River at Durand	9010	May 14	64,400	n	6
05392150	Mishonagon Creek near Woodruff	17.6	May 12	99.3	n	20
05392350	Bearskin Creek near Harshaw	31.1	May 12	106	n	7

\* mean daily Q

\*\* recurrence interval statistics updated with data through water year 2002

#### References:

Hopkins, E., Wisconsin State Climatology Office, written communication, 2004, -- Wisconsin rainfall statistics for water year 2003.  
J.F. Walker and W.R. Krug, 2003, Flood-frequency Characteristics of Wisconsin Streams: U.S. Geological Survey Water Resources Investigations Report 03-4250, 185 p.

Walker, J.F. U.S. Geological Survey, written communication, 2003, -- updated flood-frequency characteristics of selected Wisconsin streams through 2002

Wisconsin Agricultural Statistics Service, 2002, Wisconsin Crop Weather – Review of the 2002 Crop Year: U.S. Department of Agriculture, Wisconsin Agricultural Statistics Service, Madison, Wis., 8 p.

Wisconsin Agricultural Statistics Service, 2003, Wisconsin Crop Weather – Review of the 2003 Crop Year: U.S. Department of Agriculture, Wisconsin Agricultural Statistics Service, Madison, Wis., 8 p.

Wisconsin State Journal, Doyle declares statewide emergency for farmers: Move will aid irrigating some fields: August 20, 2003.

#### Water Quality

Suspended-sediment yields from four watersheds in southern Wisconsin in water year 2003 ranged from 12 to 53 percent of normal, as indicated by loads measured at relatively long-term monitoring sites on these watersheds. Sediment yields at Grant River in southwestern Wisconsin were only 12 percent of normal. The low yields at Grant River likely were caused by the absence of large storm-runoff events and generally less than normal runoff, as annual discharge was 71 percent of normal. Yahara River at Windsor in south-central Wisconsin experienced a 23 percent of normal sediment yield, and corresponding annual discharge, which was 64 percent of normal. Sediment yield at Jackson Creek Tributary near Elkhorn in southeastern Wisconsin was 35 percent of normal and discharge was 45 percent of normal. At Green Lake Inlet (Silver Creek) near Green Lake sediment yield was 53 percent of normal, whereas, discharge was only 52 percent of normal.

Phosphorus yields in water year 2003 from three watershed in southern Wisconsin, on which there are long-term monitoring sites, were below normal. Yields at these sites ranged from 28 to 46 percent of normal. The phosphorus yield for Yahara River at Windsor was 33 percent of normal, the yield for Jackson Creek Tributary was 28 percent of normal, and the yield for Green Lake Inlet was 46 percent of normal.

#### Ground-Water Levels

In general, shallow ground-water levels during the 2003 water year were normal to above normal for most of the wells in the State. Wells in Door, Jackson, and Marquette Counties had below normal ground-water levels at the beginning of the water year, and these levels remained below normal for the entire water year. The large extent of normal and above-normal ground-water levels can be attributed to near normal rainfall during the 2003 water year and normal rainfall during the previous water year.

### SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the streamflow representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities. At 10 of these sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the affects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program can be found at <http://water.usgs.gov/hbn/>.

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations were operated in the Mississippi, Columbia, Colorado, and Rio Grande. From 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program can be found at <http://water.usgs.gov/nasqan/>.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 225 precipitation chemistry monitoring sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as all data from the individual sites, can be found at <http://bqs.usgs.gov/acidrain/>.

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 59 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key federal, State, and local water resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program can be found at [http://water.usgs.gov/nawqa/nawqa\\_home.html](http://water.usgs.gov/nawqa/nawqa_home.html).

#### EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are from the 2003 water year that began October 1, 2002, and ended September 30, 2003. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data; stage and content data for lakes and reservoirs; precipitation data; surface and ground water; and ground-water-level data. Figure 4 shows major surface-water drainage basins and an index of hydrologic records. The locations of the stations and wells where the data were collected are shown in basin location maps and figure 5.

The following sections of introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

##### Station Identification Numbers

In this report each data station, whether streamsite or well, is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream order number" is used for most surface-water stations on streams and a unique 15-digit number is used for lakes, wells, and precipitation monitoring sites.

##### Downstream Order and Station Number

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. No station-number distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight- to ten-digit number for each station, such as 04087000, 054310157, or 0407809265, which appears just to the left of the station name, includes the two-digit Part number "04" or "05" plus the six- to eight-digit downstream-order number ("087000", "4310157", or "07809265"). The Part number designates the major river basin; for example, records in this report are in Part 04 (St. Lawrence River basin) or Part 05 (Upper Mississippi River basin).

In some special cases, stations on streams may be identified with the numbering system used for ground-water and lake-data sites described in the following paragraph. This is generally done only for special purpose short-term stations where station density precludes convenient assignment of downstream order numbers.

##### Numbering System for Ground-Water, Lake, and Precipitation Data Sites

Wells, springs, sites on lakes, and precipitation gages where data are collected are identified by a unique 15-digit number that is a concatenation of the site's latitude, longitude, and a two-digit sequence number. The sequence number is used to distinguish between sites located at the same latitude-longitude designation. The site identification number is permanently assigned to the site; actual latitude and longitude of the site are subject to update and are stored separately. Each ground-water site is also identified by a local number based on the cadastral-survey system of the U.S. Government. The number consists of an abbreviation of the county name, the township, range and section, and a four-digit number assigned to the well.

##### Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained from a continuous stage-recording device by which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the



period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained from a continuous stage-recording device, but need not be. Because daily mean discharges are commonly published for such stations, they are referred to as "daily stations." By contrast, partial records consist of discrete measurements, without using a continuous stage-recording device. Two types of surface-water partial-record stations are operated: (1) crest-stage partial-record stations, for which maximum discharge is recorded; and (2) miscellaneous stations, for which periodic discharge measurements and/or limited water-quality analyses are made. Each type of station is presented separately in this report.

#### Data Collection and Computation

The basic data collected at complete-record gaging stations include stage and discharge measurements of streams, and stage, surface area, and content measurements of lakes and reservoirs. Factors affecting stage-discharge relationships, weather records, and other information supplement the basic data used to determine daily flow. Records of stage are obtained by reading a non-recording gage, from a continuous graph, from a tape punched at selected intervals on a water-stage recorder, or from electronic data logger. Measurements of discharge are made with a current meter by using methods described in "U.S. Geological Survey Techniques of Water Resources Investigations" listed in "Publications on techniques of water-resources investigations."

Rating tables of stream stage and corresponding discharges are prepared from stage-discharge relationship curves. Extended-rating curves, based on step-backwater techniques, velocity-area studies, logarithmic plotting, and indirect measurements of peak discharge are used to estimate discharges greater than those measured. Daily mean discharges are computed from gage heights and rating tables, and the monthly and yearly means are computed from the daily figures. If the stage-discharge relationship varies due to changes in the control, such as aquatic growth, debris, or scour and fill, daily mean discharge is computed by a shifting-control method in which correction factors, based on individual discharge measurements and notes by observers, are used when the gage heights are applied to the rating tables.

The slope method is used to compute discharge at stream-gaging stations where backwater from lakes or reservoirs, tributary streams, or other sources affect the stage-discharge relationship. Acoustic velocity meters have also been installed at some locations where aforementioned problems occur. The rate of change of stage is used to compute discharge at stations where the stage-discharge relationship is affected by rapid changes in stage. When ice conditions at stream-gaging stations affect the stage-discharge relationship, gage-height records, winter discharge measurements, temperature and precipitation data, and comparable records of discharge for nearby stations are used to compute discharge. At gaging stations where gage-height records are faulty or non-existent for some periods, the daily discharges are estimated based on the recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for nearby stations.

Descriptions of the stations and tabulations of data are included in this report. A table showing daily, monthly, and yearly discharges is given for each gaging station on a stream or canal. A table showing the monthly summary of stage is given for gaging stations on lakes.

#### Data Presentation

Streamflow data in this report are presented in a format that is considerably different from the format in data reports prior to the 1992 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or stations manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consists of four parts: the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration.

#### Station manuscripts

The manuscript provides, under various headings, descriptive information such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments that follow clarify information presented under the various headings of the station description.

**LOCATION.**--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages were provided by the U.S. Army Corps of Engineers or other agencies.

**DRAINAGE AREA.**--Drainage areas are measured using the most accurate maps available. Because the type of map available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

**PERIOD OF RECORD.**--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation when the present station was not, and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

**REVISED RECORDS.**--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. All the reports in which revisions have been published for the station and the water years to which the revisions apply are listed under this heading. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to sea level (see definition of terms), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations, or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a remarks statement is used to identify an estimated record, this information will be presented as the first entry of the paragraph. The paragraph is also used to present information about the accuracy of the records, special methods of computation, conditions that affect natural flow at the station and any other pertinent items.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.--Information concerning major floods or unusually low flows that occurred outside the stated period of record is included here. The information may or may not have been obtained by the U.S. Geological Survey.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although it is rare, occasionally the records of a discontinued gaging station may need revision. Because there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations, who obtained the record from previously published data reports, may wish to contact the District office to determine if the published records were ever revised after the station was discontinued. If the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

The data presented for most gaging stations on lakes include a description of the station and a monthly summary table of stage.

Headings for AVERAGE DISCHARGE, EXTREMES FOR PERIOD OF RECORD, AND EXTREMES FOR CURRENT YEAR have been deleted and the information contained in these paragraphs, except for the listing of secondary instantaneous peak discharges in the EXTREMES FOR CURRENT YEAR paragraph, is now presented in the tabular summaries following the discharge table or in the REMARKS paragraph, as appropriate. The RATING TABLE heading has also been deleted. No changes have been made to the data presentation of lake contents.

#### Data table of daily mean values

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month is usually also expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, or if the drainage area includes large noncontributing areas.

#### Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS \_\_\_\_\_ - \_\_\_\_\_, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

#### Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period as appropriate. The designated period selected, "WATER YEARS \_\_\_\_\_ - \_\_\_\_\_," will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the "ANNUAL" 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to follow clarify information presented under the various line headings of the summary statistics table.

**ANNUAL TOTAL.**--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

**ANNUAL MEAN.**--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

**HIGHEST ANNUAL MEAN.**--The maximum annual mean discharge occurring for the designated period.

**LOWEST ANNUAL MEAN.**--The minimum annual mean discharge occurring for the designated period.

**HIGHEST DAILY MEAN.**--The maximum daily mean discharge for the year or for the designated period.

**LOWEST DAILY MEAN.**--The minimum daily mean discharge for the year or for the designated period.

**ANNUAL 7-DAY MINIMUM.**--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

**MAXIMUM PEAK FLOW.**--The maximum instantaneous discharge occurring for the water year or for the designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

**MAXIMUM PEAK STAGE.**--The maximum instantaneous stage occurring for the water year or for the designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

**INSTANTANEOUS LOW FLOW.**--The minimum instantaneous discharge occurring for the water year or for the designated period.

**ANNUAL RUNOFF.**--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile area drained, assuming the runoff is distributed uniformly in time and area.

Inches (INCHES) indicates the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

**10 PERCENT EXCEEDS.**--The discharge that is exceeded 10 percent of the time for the designated period.

**50 PERCENT EXCEEDS.**--The discharge that is exceeded 50 percent of the time for the designated period.

**90 PERCENT EXCEEDS.**--The discharge that is exceeded 90 percent of the time for the designated period.

Data collected at crest-stage partial-record stations are given in a table of annual maximum stages and discharges that follows the information for continuous-record sites. The crest-stage partial-record stations table is followed by a list of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for special reasons are called measurements at miscellaneous sites.

#### Identifying Estimated Daily Discharge

Estimated daily-discharge values are identified by listing the dates of the estimated record in the REMARKS paragraph of the station description.

#### Accuracy of the Records

The accuracy of streamflow records depends primarily on: (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true value; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft<sup>3</sup>/s; to the nearest tenth between 1.0 and 10 ft<sup>3</sup>/s; to the nearest whole number between 10 and 1,000 ft<sup>3</sup>/s; and to 3 significant figures for more than 1,000 ft<sup>3</sup>/s.

The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, or changes in contents or reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents.

#### Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables are on file in the Wisconsin District office. Also, most of the daily mean discharges are in computer-readable form and have been statistically analyzed. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the District office.

#### Records of Surface-Water Quality

Records of stream-water quality ordinarily are obtained at or near streamgaging stations, because interpretation of records of stream-water quality nearly always requires corresponding stream discharge data. The stream discharge shown with a water-quality analysis is the instantaneous value corresponding to the time of sample collection ("Streamflow, Instantaneous") whenever possible. When an instantaneous discharge value is not available, the daily mean discharge ("Discharge, in Cubic Feet per Second") is given if available. Water samples from lakes are collected at locations identified by latitude and longitude; the depth at which the sample was collected is given with each analysis. Records of surface-water quality in this report include a variety of types of data and measurement frequencies.

#### Classification and Arrangement of Records

The water-quality data collected at surface-water sites fall into two general classifications. Continuous-record stations are sites where data are collected on a regularly scheduled basis as part of a monitoring program or interpretive investigation. Water-quality records for these stations accompany stream-discharge or lake-stage records, where available, in the Surface Water Records section of this report. More limited water-quality data are collected at gaging stations and other sites on streams. These data include measurements of water temperature and specific conductance made at gaging stations and water-quality analyses of samples collected at gaging stations and other sites on streams for reconnaissance and other special purposes. These data are presented separately at the end of the Surface-Water Records section.

#### On-site Measurements and Sample Collection

In obtaining water-quality data, care is taken to assure that the data obtained represent the quality of the water at the time of sampling. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen concentration, are made on site when the samples are taken. To assure that measurements made in the laboratory also reflect the original quality of the water, prescribed procedures are followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are detailed in the TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These references are listed in the PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS section of this report. These methods are consistent with ASTM standards and generally follow ISO standards.

One sample can adequately define the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections using depth-integrating samplers to obtain a representative sample needed for an accurate mean concentration and for use in calculating the discharge of suspended and dissolved materials. Water quality in lakes may differ with depth and laterally at a particular depth depending on thermal stratification and other physical and biological factors.

Water-quality data published in this report are considered to be representative values for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis.

For chemical-quality stations equipped with digital monitors, daily maximum, minimum, and mean values for each constituent or property are computed and reported herein. Records of recorded values used in the computations are on file at the U.S. Geological Survey (USGS) Wisconsin District Office.

#### Transport of suspended and dissolved materials

Samples used for computing discharge of suspended and dissolved materials (suspended sediment, suspended solids, phosphorus, and nitrogen) are collected using a number of sampling methods. Sample types include flow-integrated samples collected using a depth-integrating sampler at multiple locations in a stream cross section (equal-width increment or EWI samples), samples collected using depth-integrating sampler at a single location in a cross section, or point samples collected by an automated sampler from a single point in a cross section. Coefficients are used to compensate for concentration differences between flow-integrated samples and samples collected at single points or single locations.

Samples are collected more frequently during periods of rapidly-changing stream discharge than during stable periods. Discharges of suspended and dissolved materials for days of rapidly-changing stream discharge are computed by the subdivided day (time-discharge weighted average) method. Methods used in the computation of sediment records are described in the TWRI Book 3, Chapters C1 and C3 listed in PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS. These methods are consistent with ASTM standards and generally follow ISO standards. For periods when no samples were collected, discharges of suspended and dissolved material are estimated from stream discharge and constituent concentrations from adjacent time periods and periods with similar stream discharges. Suspended-sediment and suspended-solids discharges of less than 0.005 tons/day are reported as 0.00 tons/day, and phosphorus and nitrogen discharges of less than 0.005 pounds per day (lb/day) are reported as 0.00 lb/day.

In addition to the records of suspended-sediment discharge and concentration, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

#### Laboratory Measurements

Samples for suspended-sediment concentration and particle-size determination are analyzed by the USGS Iowa District Sediment Laboratory. Chemical analyses, other than field measurements, are done by the USGS National Water Quality Laboratory unless indicated otherwise in the descriptive heading for the station. Methods used by USGS laboratories to analyze water and sediment samples and to compute sediment records are described in the TWRI Book 5, Chapter C1. Methods used by the U.S. Geological Survey laboratories are given in the TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, A4, and A5. These methods are consistent with ASTM standards and generally follow ISO standards.

In March 1989, the USGS National Water-Quality Laboratory discovered a bias in their turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and July 1989. The magnitude of the bias differs among stations.

A problem has been identified with total phosphorus and total Kjeldahl nitrogen analyses done by the USGS National Water Quality Laboratory prior to Oct. 1, 1991. Some time after 1975, an error was introduced during a rewrite of the laboratory method for digestion of samples for total phosphorus or total Kjeldahl nitrogen analyses. The error resulted in incomplete digestion of samples causing a negative bias in the total phosphorus and total Kjeldahl nitrogen concentrations reported for many samples. The amount of bias is variable, but it generally increases with increasing concentrations of particulate phosphorus, suspended sediment, or organic carbon in the sample. In the absence of split-sample data, there is no scientifically defensible way to correct for the bias. Total phosphorus loads calculated using concentration data for samples analyzed prior to October 1991 may also have a sizeable negative bias. A new digestion procedure was implemented effective Oct. 1, 1991, that eliminated the bias.

#### Dissolved Trace-Element Concentrations

Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ( $\mu\text{g/L}$ ) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the  $\mu\text{g/L}$  level should be reviewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994. Full implementation of the protocols took place during the 1995 water year.

#### Sampling Method Codes

Water-quality analyses stored in USGS computer files (WATSTORE) contains codes that identify the sampling method used to collect the sample. Codes in use for Wisconsin data are as follows:

<u>Method</u>	<u>Method Code</u>
Equal Width Increment (EWI)	10
Equal Discharge Increment (EDI)	20
Single Vertical	30
Multiple Vertical	40
Point Sample	50
Weighted Bottle	60
Grab Sample	70
Van Dorn Sampler	100
Submersible Pump	4040
Peristaltic Pump	4080

#### Collecting and Analyzing Agencies

All water-quality analyses stored in USGS computer files (WATSTORE) contain codes that identify the agencies that collected the sample (collecting agency) and analyzed it (analyzing agency). Codes in use for Wisconsin data are as follows:

<u>Agency</u>	<u>Agency Code</u>
U.S. Geological Survey	1028
U.S. Geological Survey, National Water- Quality Laboratory	80020
Wisconsin State Laboratory of Hygiene	85543
Wisconsin Department of Natural Resources	85545

#### Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, laboratories (if other than USGS), cooperation, and extremes for daily discharges of suspended and dissolved materials. For each station, tables of data collected at less-than-daily frequency are presented first followed by tables of daily values.

The concentrations of some constituents are given as less than a particular value (see "Remark Codes"); that value is the detection for the analytical method used for the analysis. Occasionally these values differ, or an actual concentration is given that is less than a higher detection limit indicated for the constituent in another analysis. These differences are due to differences in analytical methods.

The five-digit numbers in parentheses in column headings in many of the water-quality tables are codes that identify the constituent or property in USGS computer files (WATSTORE).

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of constituents or properties measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for each constituent or property.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor, temperature recorder, automated sediment sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records. Laboratories other than USGS laboratories are identified.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximum and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of USGS water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates or check with the District Office to determine if updates were made.

The surface-water-quality records for water-quality partial-record stations are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its station number and name in the regular downstream-order sequence.

#### Remark Codes

The following remark codes may appear with the water-quality data in this report:

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
E, e	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
M	Presence of material verified but not quantified
U	Material specifically analyzed but not detected
V	Analyte was detected in both the environmental and the associated blanks

### Records of Ground-Water Levels

Water-level data for 40 wells are given in this report. The locations of these wells are shown in figure 5. These wells are part of a national network of observation wells, and the water-level data are intended to provide a sampling and historical record of water-level changes in the Nation's most important aquifers.

Data in this report represent natural water-table and artesian conditions in the principal aquifers of the State, except in the sandstone aquifer in southeastern Wisconsin where heavy municipal and industrial pumping is causing a continual decline in the water level. Water in this aquifer is under artesian pressure where confined by the overlying Maquoketa Shale.

Although records of water levels for 40 wells are presented in this report, water-level data are currently being collected for a total of 116 wells in Wisconsin through a cooperative program with the Wisconsin Geological and Natural History Survey (WG&NHS). Wells not published in this report are listed after figure 5. Many federal, state, county and local agencies, as well as interested area residents, assist in this program by measuring and reporting water levels. All water level data are placed in computer storage. Data can be accessed from the web site: <http://water.usgs.gov> and clicking on ground water. Reports containing hydrographs, showing water-level changes in all of these wells, are periodically published by the WG&NHS.

The amplitude of water-level changes is typified by seven well hydrographs in this report that show annual maximum and minimum water levels for the period of record.

### Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are consistently accurate and reliable.

Tables of water-level data are presented by county arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that appears in the heading. It is followed by the secondary identification number (the local number), that consists of a two-letter abbreviation of the county name, the township-range-section location of the well, and a four-digit identification number that is unique within the county.

Water-level records are obtained from direct measurements with a steel tape or from a continuous water-level recorder. The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. The altitude of the lsd above sea level and the distance of the measuring point (MP) above or below the lsd is given in each well description. Water levels are normally reported to a hundredth of a foot. The absolute value of the depth to water may be in error by a few tenths of a foot, but the error in determining the net change in water level between successive measurements is normally only a hundredth or a few hundredths of a foot.

### Data Presentation

Each well record consists of two parts, the station description and the data table of water levels observed during the water year. The description of the well precedes the tabular data. The comments below clarify information presented under the various headings.

**LOCATION.**--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); the hydrologic-unit number; and the land owner's name.

**AQUIFER.**--This entry designates by name the primary aquifer(s) open to the well.

**WELL CHARACTERISTICS.**--This entry describes the well in terms of depth, diameter, casing depth and/or screened interval, method of construction, and use.

**INSTRUMENTATION.**--This paragraph provides information on both the frequency of measurement and the collection method.

**DATUM.**--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of casing, top of breather pipe, hole in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) sea level; it is reported with a precision dependent on the method of determination.

**REMARKS.**--This entry describes factors that may influence the water level in a well or the measurement of the water level.

**PERIOD OF RECORD.**--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year.

**EXTREMES FOR PERIOD OF RECORD.**--This entry contains the highest and lowest water levels of the period of published record, with respect to land-surface datum, and the dates of their occurrence.

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum and all taped measurements of water level are listed. For wells equipped with recorders, only abbreviated tables are published; daily lows are listed for every fifth day and at the end of the month (eom). For these wells the highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the abbreviated table. Because all values are not published for these wells, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of the water level.

## ACCESS TO U.S. GEOLOGICAL SURVEY WATER DATA

The U.S. Geological Survey provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

<http://water.usgs.gov>

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division's District offices. (See address on the back of the title page.)

## DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Definitions of common terms such as algae, water level, and precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (SI) Units. Other glossaries that also define water-related terms are accessible from <http://water.usgs.gov/glossaries.html>.

**Acid neutralizing capacity** (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

**Acre-foot** (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also "Annual runoff")

**Adenosine triphosphate** (ATP) is an organic, phosphate-rich compound important in the transfer of energy in organisms. Its central role in living cells makes ATP an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

**Adjusted discharge** is discharge data that have been mathematically adjusted (for example, to remove the effects of a daily tide cycle or reservoir storage).

**Algal growth potential** (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample. (See also "Biomass" and "Dry weight")

**Alkalinity** is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "filtered" sample.

**Annual runoff** is the total quantity of water that is discharged ("runs off") from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

**Annual 7-day minimum** is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

**Aroclor** is the registered trademark for a group of poly-chlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

**Artificial substrate** is a device that is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is collected. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection. (See also "Substrate")

**Ash mass** is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter ( $\text{g}/\text{m}^3$ ), and periphyton and benthic organisms in grams per square meter ( $\text{g}/\text{m}^2$ ). (See also "Biomass" and "Dry mass")

**Aspect** is the direction toward which a slope faces with respect to the compass.

**Bacteria** are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.



**Bankfull stage**, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

**Base discharge** (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also "Peak flow")

**Base flow** is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

**Bedload** is material in transport that is supported primarily by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to an elevation equal to the top of the bedload sampler nozzle (ranging from 0.25 to 0.5 foot) that are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

**Bedload discharge** (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also "Bedload," "Dry weight," "Sediment," and "Suspended-sediment discharge")

**Bed material** is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also "Bedload" and "Sediment")

**Benthic organisms** are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

**Biochemical oxygen demand (BOD)** is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

**Biomass** is the amount of living matter present at any given time, expressed as mass per unit area or volume of habitat.

**Biomass pigment ratio** is an indicator of the total proportion of periphyton that are autotrophic (plants). This is also called the Autotrophic Index.

**Blue-green algae** (*Cyanophyta*) are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample. (See also "Phytoplankton")

**Bottom material** (See "Bed material")

**Bulk electrical conductivity** is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved solids content of the pore water and lithology and porosity of the rock.

**Canadian Geodetic Vertical Datum 1928** is a geodetic datum derived from a general adjustment of Canada's first order level network in 1928.

**Cells/volume** refers to the number of cells of any organism that is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample volume, and are generally reported as cells or units per milliliter (mL) or liter (L).

**Cells volume** (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume ( $\mu\text{m}^3$ ) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } \frac{4}{3} \pi r^3 \quad \text{cone } \frac{1}{3} \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

pi ( $\pi$ ) is the ratio of the circumference to the diameter of a circle;  $\pi = 3.14159\dots$

From cell volume, total algal biomass expressed as biovolume ( $\mu\text{m}^3/\text{mL}$ ) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

**Cfs-day** (See "Cubic foot per second-day")

**Channel bars**, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

**Chemical oxygen demand (COD)** is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also "Biochemical oxygen demand (BOD)"]

***Clostridium perfringens*** (*C. perfringens*) is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and presence of microorganisms that are resistant to disinfection and environmental stresses. (See also “Bacteria”)

**Coliphages** are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

**Color unit** is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

**Confined aquifer** is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

**Contents** is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

**Continuous-record station** is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

**Control** designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

**Control structure**, as used in this report, is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of saltwater.

**Cubic foot per second** (CFS, ft<sup>3</sup>/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term “second-foot” sometimes is used synonymously with “cubic foot per second” but is now obsolete.

**Cubic foot per second-day** (CFS-DAY, Cfs-day, [(ft<sup>3</sup>/s)/d]) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables are numerically equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

**Cubic foot per second per square mile** [CFSM, (ft<sup>3</sup>/s)/mi<sup>2</sup>] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also “Annual runoff”)

**Daily mean suspended-sediment concentration** is the time-weighted concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also “Sediment” and “Suspended-sediment concentration”)

**Daily-record station** is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to periodic sample or data collection on a daily or near-daily basis.

**Data collection platform** (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

**Data logger** is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data are usually downloaded from onsite data loggers for entry into office data systems.

**Datum** is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or UTM coordinates. (See also “Gage datum,” “Land-surface datum,” “National Geodetic Vertical Datum of 1929,” and “North American Vertical Datum of 1988”)

**Diatoms** (*Bacillariophyta*) are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample. (See also “Phytoplankton”)

**Diel** is of or pertaining to a 24-hour period of time; a regular daily cycle.

**Discharge**, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, etc., within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

**Dissolved** refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of “dissolved” constituent concentrations are made on sample water that has been filtered.

**Dissolved oxygen** (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

**Dissolved-solids concentration** in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the “residue-on-evaporation” method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L CaCO<sub>3</sub>) can be converted to carbonate concentration by multiplying by 0.60.

**Diversity index** (H) (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n_i}{n},$$

where  $n_i$  is the number of individuals per taxon,  $n$  is the total number of individuals, and  $s$  is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

**Drainage area** of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

**Drainage basin** is a part of the Earth’s surface that contains a drainage system with a common outlet for its surface runoff. (See “Drainage area”)

**Dry mass** refers to the mass of residue present after drying in an oven at 105 °C, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass. (See also “Ash mass,” “Biomass,” and “Wet mass”)

**Dry weight** refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also “Wet weight”)

**Embeddedness** is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also “Substrate embeddedness class”)

**Enterococcus bacteria** are commonly found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus fecalis*, *Streptococcus feacium*, *Streptococcus avium*, and their variants. (See also “Bacteria”)

**EPT Index** is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that are generally considered pollution sensitive; the index usually decreases with pollution.

**Escherichia coli** (*E. coli*) are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

**Estimated (E) concentration value** is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an ‘E’ code will be reported with the value. If the analyte is qualitatively identified as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an ‘E’ code even though the measured value is greater than the MDL. A value reported with an ‘E’ code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<).

**Euglenoids** (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also “Phytoplankton”)

**Extractable organic halides** (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

**Fecal coliform bacteria** are present in the intestines or feces of warmblooded animals. They often are used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

**Fecal streptococcal bacteria** are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

**Fire algae** (*Pyrrophyta*) are free-swimming unicells characterized by a red pigment spot. (See also “Phytoplankton”)

**Flow-duration percentiles** are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

**Gage datum** is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum itself is not an actual physical object, the datum usually is defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

**Gage height** (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term “stage,” although gage height is more appropriate when used in reference to a reading on a gage.

**Gage values** are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

**Gaging station** is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained.

**Gas chromatography/flame ionization detector** (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

**Geomorphic channel units**, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

**Green algae** have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating “moss” in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample. (See also “Phytoplankton”)

**Habitat**, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat are typically made over a wider geographic scale than are measurements of species distribution.

**Habitat quality index** is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

**Hardness** of water is a physical-chemical characteristic that commonly is recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate (CaCO<sub>3</sub>).

**High tide** is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. See NOAA web site: <http://www.co-ops.nos.noaa.gov/tideglos.html>

**Hilsenhoff’s Biotic Index** (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = \frac{\sum (n)(a)}{N},$$

where  $n$  is the number of individuals of each taxon,  $a$  is the tolerance value of each taxon, and  $N$  is the total number of organisms in the sample.

**Horizontal datum** (See “Datum”)

**Hydrologic index stations** referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

**Hydrologic unit** is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

**Inch** (IN., in.), as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were uniformly distributed on it. (See also “Annual runoff”)

**Instantaneous discharge** is the discharge at a particular instant of time. (See also “Discharge”)

**International Boundary commission Survey Datum** refers to a geodetic datum established at numerous monuments along the United States-Canada boundary by the International Boundary Commission.

**Island**, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year on average, and remains stable except during large flood events.

**Laboratory reporting level (LRL)** is generally equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a “less than” (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. [Note: In several previous NWQL documents (NWQL Technical Memorandum 98.07, 1998), the LRL was called the nondetection value or NDV—a term that is no longer used.]

**Land-surface datum (lsd)** is a datum plane that is approximately at land surface at each ground-water observation well.

**Latent heat flux** (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

**Light-attenuation coefficient**, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L} ,$$

where  $I_o$  is the source light intensity,  $I$  is the light intensity at length  $L$  (in meters) from the source,  $\lambda$  is the light-attenuation coefficient, and  $e$  is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L} \log_e \frac{I}{I_o} .$$

**Lipid** is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

**Long-term method detection level (LT-MDL)** is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

**Low tide** is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. See NOAA web site: <http://www.co-ops.nos.noaa.gov/tideglos.html>

**Macrophytes** are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

**Mean concentration of suspended sediment** (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also “Daily mean suspended-sediment concentration” and “Suspended-sediment concentration”)

**Mean discharge (MEAN)** is the arithmetic mean of individual daily mean discharges during a specific period. (See also “Discharge”)

**Mean high or low tide** is the average of all high or low tides, respectively, over a specific period.

**Mean sea level** is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also “Datum”)

**Measuring point (MP)** is an arbitrary permanent reference point from which the distance to water surface in a well is measured to obtain water level.

**Megahertz** is a unit of frequency. One megahertz equals one million cycles per second.

**Membrane filter** is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

**Metamorphic stage** refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

**Method detection limit (MDL)** is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

**Method of Cubatures** is a method of computing discharge in tidal estuaries based on the conservation of mass equation.

**Methylene blue active substances (MBAS)** are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

**Micrograms per gram (UG/G,  $\mu\text{g/g}$ )** is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

**Micrograms per kilogram (UG/KG,  $\mu\text{g/kg}$ )** is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

**Micrograms per liter (UG/L,  $\mu\text{g/L}$ )** is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

**Microsiemens per centimeter (US/CM,  $\mu\text{S/cm}$ )** is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

**Milligrams per liter (MG/L,  $\text{mg/L}$ )** is a unit for expressing the concentration of chemical constituents in water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

**Minimum reporting level (MRL)** is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

**Miscellaneous site**, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

**Most probable number (MPN)** is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

**Multiple-plate samplers** are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

**Nanograms per liter (NG/L,  $\text{ng/L}$ )** is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

**National Geodetic Vertical Datum of 1929 (NGVD of 1929)** is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It was formerly called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea level at any particular place. See NOAA web site: <http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88> (See "North American Vertical Datum of 1988")

**Natural substrate** refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also "Substrate")

**Nekton** are the consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility.

**Nephelometric turbidity unit (NTU)** is the measurement for reporting turbidity that is based on use of a standard suspension of formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

**North American Datum of 1927 (NAD 27)** is the horizontal control datum for the United States that was defined by a location and azimuth on the Clarke spheroid of 1866.

**North American Datum of 1983 (NAD 83)** is the horizontal control datum for the United States, Canada, Mexico, and Central America that is based on the adjustment of 250,000 points including 600 satellite Doppler stations that constrain the system to a geocentric origin. NAD 83 has been officially adopted as the legal horizontal datum for the United States by the Federal Government.

**North American Vertical Datum of 1988** (NAVD 1988) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and United States first-order terrestrial leveling networks.

**Open or screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

**Organic carbon** (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

**Organic mass** or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also "Ash mass," "Biomass," and "Dry mass")

**Organism count/area** refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m<sup>2</sup>), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

**Organism count/volume** refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

**Organochlorine compounds** are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

**Parameter code** is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

**Partial-record station** is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

**Particle size** is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method utilizes the principle of Stokes law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

**Particle-size classification**, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

**Peak flow (peak stage)** is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

**Percent composition** or **percent of total** is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, weight, mass, or volume.

**Percent shading** is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

**Periodic-record station** is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

**Periphyton** is the assemblage of microorganisms attached to and living upon submerged solid surfaces. Although primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

**Pesticides** are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

**pH** of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed "acidic," and solutions with a pH greater than 7.0 are termed "basic." Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

**Phytoplankton** is the plant part of the plankton. They are usually microscopic, and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and commonly are known as algae. (See also "Plankton")

**Picocurie (PC, pCi)** is one trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields  $3.7 \times 10^{10}$  radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

**Plankton** is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

**Polychlorinated biphenyls (PCBs)** are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

**Polychlorinated naphthalenes (PCNs)** are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

**Pool**, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

**Primary productivity** is a measure of the rate at which new organic matter is formed and accumulated through photo-synthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated (carbon method) by the plants.

**Primary productivity (carbon method)** is expressed as milligrams of carbon per area per unit time [ $\text{mg C}/(\text{m}^2/\text{time})$ ] for periphyton and macrophytes or per volume [ $\text{mg C}/(\text{m}^3/\text{time})$ ] for phytoplankton. The carbon method defines the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

**Primary productivity (oxygen method)** is expressed as milligrams of oxygen per area per unit time [ $\text{mg O}/(\text{m}^2/\text{time})$ ] for periphyton and macrophytes or per volume [ $\text{mg O}/(\text{m}^3/\text{time})$ ] for phytoplankton. The oxygen method defines production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

**Radioisotopes** are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

**Reach**, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

**Recoverable from bed (bottom) material** is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. (See also "Bed material")

**Recurrence interval**, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between



occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ( $7Q_{10}$ ) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the  $7Q_{10}$  occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the  $7Q_{10}$ .

**Replicate samples** are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

**Return period** (See "Recurrence interval")

**Riffle**, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

**River mileage** is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

**Run**, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

**Runoff** is the quantity of water that is discharged ("runs off") from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also "Annual runoff")

**Sea level**, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

**Sediment** is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as "fluvial sediment." Sediment includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of pre-cipitation.

**Sensible heat flux** (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

**Seven-day, 10-year low flow** ( $7Q_{10}$ ) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the  $7Q_{10}$  is 10 years; the chance that the annual 7-day minimum flow will be less than the  $7Q_{10}$  is 10 percent in any given year. (See also "Annual 7-day minimum" and "Recurrence interval")

**Shelves**, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

**Sodium adsorption ratio** (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

**Soil heat flux** (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

**Soil-water content** is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

**Specific electrical conductance (conductivity)** is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

**Stable isotope ratio** (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

**Stage** (See "Gage height")

**Stage-discharge relation** is the relation between the water-surface elevation, termed stage (gage height), and the volume of water flowing in a channel per unit time.

**Streamflow** is the discharge that occurs in a natural channel. Although the term “discharge” can be applied to the flow of a canal, the word “streamflow” uniquely describes the discharge in a surface stream course. The term “streamflow” is more general than “runoff” as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

**Substrate** is the physical surface upon which an organism lives.

**Substrate embeddedness class** is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0 no gravel or larger substrate	3 26-50 percent
1 > 75 percent	4 5-25 percent
2 51-75 percent	5 < 5 percent

**Surface area of a lake** is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

**Surficial bed material** is the upper surface (0.1 to 0.2 foot) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

**Surrogate** is an analyte that behaves similarly to a target analyte, but that is highly unlikely to occur in a sample. A surrogate is added to a sample in known amounts before extraction and is measured with the same laboratory procedures used to measure the target analyte. Its purpose is to monitor method performance for an individual sample.

**Suspended** (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is defined operationally as the material retained on a 0.45-micrometer filter.

**Suspended, recoverable** is the amount of a given constituent that is in solution after the part of a representative suspended water-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the “total” amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of “suspended, recoverable” constituents are made either by directly analyzing the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also “Suspended”)

**Suspended sediment** is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also “Sediment”)

**Suspended-sediment concentration** is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also “Sediment” and “Suspended sediment”)

**Suspended-sediment discharge** (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft<sup>3</sup>/s) x 0.0027. (See also “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

**Suspended-sediment load** is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also “Sediment”)

**Suspended, total** is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as “suspended, total.” Determinations of “suspended, total” constituents are made either by directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also “Suspended”)

**Suspended solids, total residue at 105 °C concentration** is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

**Synoptic studies** are short-term investigations of specific water-quality conditions during selected seasonal or hydro-logic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

**Taxa (Species) richness** is the number of species (taxa) present in a defined area or sampling unit.

**Taxonomy** is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata*, is the following:

Kingdom:	Animal
Phylum:	Arthropoda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	<i>Hexagenia</i>
Species:	<i>Hexagenia limbata</i>

**Thalweg** is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

**Thermograph** is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table descriptions and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

**Time-weighted average** is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

**Tons per acre-foot** (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

**Tons per day** (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

**Total** is the amount of a given constituent in a representative whole-water (unfiltered) sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined at least 95 percent of the constituent in the sample.)

**Total coliform bacteria** are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters of sample. (See also "Bacteria")

**Total discharge** is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

**Total in bottom material** is the amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

**Total length** (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

**Total load** refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

**Total organism count** is the number of organisms collected and enumerated in any particular sample. (See also "Organism count/volume")

**Total recoverable** is the amount of a given constituent in a whole-water sample after a sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

**Total sediment discharge** is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also “Bedload,” “Bedload discharge,” “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

**Total sediment load** or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also “Sediment,” “Suspended-sediment load,” and “Total load”)

**Transect**, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

**Turbidity** is the reduction in the transparency of a solution due to the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to U.S. EPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values.

**Ultraviolet (UV) absorbance (absorption)** at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of pathlength of UV light through a sample.

**Unconfined aquifer** is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See “Water-table aquifer”)

**Vertical datum** (See “Datum”)

**Volatile organic compounds (VOCs)** are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens.

**Water table** is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

**Water-table aquifer** is an unconfined aquifer within which the water table is found.

**Water year** in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2002, is called the “2002 water year.”

**WDR** is used as an abbreviation for “Water-Data Report” in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports. (WRD was used as an abbreviation for “Water-Resources Data” in reports published prior to 1976.)

**Weighted average** is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

**Wet mass** is the mass of living matter plus contained water. (See also “Biomass” and “Dry mass”)

**Wet weight** refers to the weight of animal tissue or other substance including its contained water. (See also “Dry weight”)

**WSP** is used as an acronym for “Water-Supply Paper” in reference to previously published reports.

**Zooplankton** is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and often are large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers. (See also “Plankton”)

**TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY**

The USGS publishes a series of manuals titled the "Techniques of Water-Resources Investigations" that describe procedures for planning and conducting specialized work in water-resources investigations. The material in these manuals is grouped under major subject headings called books and is further divided into sections and chapters. For example, section A of book 3 (Applications of Hydraulics) pertains to surface water. Each chapter then is limited to a narrow field of the section subject matter. This publication format permits flexibility when revision or printing is required.

Manuals in the Techniques of Water-Resources Investigations series, which are listed below, are available online at <http://water.usgs.gov/pubs/twri/>. Printed copies are available for sale from the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (an authorized agent of the Superintendent of Documents, Government Printing Office). Please telephone "1-888-ASK-USGS" for current prices, and refer to the title, book number, section number, chapter number, and mention the "U.S. Geological Survey Techniques of Water-Resources Investigations." Other products can be viewed online at <http://www.usgs.gov/sales.html>, or ordered by telephone or by FAX to (303)236-4693. Order forms for FAX requests are available online at <http://mac.usgs.gov/isb/pubs/forms/>. Prepayment by major credit card or by a check or money order payable to the "U.S. Geological Survey" is required.

**Book 1. Collection of Water Data by Direct Measurement****Section D. Water Quality**

- 1-D1. *Water temperature—Influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS-TWRI book 1, chap. D1. 1975. 65 p.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS-TWRI book 1, chap. D2. 1976. 24 p.

**Book 2. Collection of Environmental Data****Section D. Surface Geophysical Methods**

- 2-D1. *Application of surface geophysics to ground-water investigations*, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS-TWRI book 2, chap. D1. 1974. 116 p.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS-TWRI book 2, chap. D2. 1988. 86 p.

**Section E. Subsurface Geophysical Methods**

- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W.S. Keys and L.M. MacCary: USGS-TWRI book 2, chap. E1. 1971. 126 p.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS-TWRI book 2, chap. E2. 1990. 150 p.

**Section F. Drilling and Sampling Methods**

- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W.E. Teasdale: USGS-TWRI book 2, chap. F1. 1989. 97 p.

**Book 3. Applications of Hydraulics****Section A. Surface-Water Techniques**

- 3-A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS-TWRI book 3, chap. A1. 1967. 30 p.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS-TWRI book 3, chap. A2. 1967. 12 p.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS-TWRI book 3, chap. A3. 1968. 60 p.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS-TWRI book 3, chap. A4. 1967. 44 p.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS-TWRI book 3, chap. A5. 1967. 29 p.
- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS-TWRI book 3, chap. A6. 1968. 13 p.

- 3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS-TWRI book 3, chap. A7. 1968. 28 p.
- 3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS-TWRI book 3, chap. A8. 1969. 65 p.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS-TWRI book 3, chap. A9. 1989. 27 p.
- 3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS-TWRI book 3, chap. A10. 1984. 59 p.
- 3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS-TWRI book 3, chap. A11. 1969. 22 p.
- 3-A12. *Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS-TWRI book 3, chap. A12. 1986. 34 p.
- 3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS-TWRI book 3, chap. A13. 1983. 53 p.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS-TWRI book 3, chap. A14. 1983. 46 p.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS-TWRI book 3, chap. A15. 1984. 48 p.
- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS-TWRI book 3, chap. A16. 1985. 52 p.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS-TWRI book 3, chap. A17. 1985. 38 p.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS-TWRI book 3, chap. A18. 1989. 52 p.
- 3-A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS-TWRI book 3, chap. A19. 1990. 31 p.
- 3-A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS-TWRI book 3, chap. A20. 1993. 38 p.
- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS-TWRI book 3, chap. A21. 1995. 56 p.

### **Section B. Ground-Water Techniques**

- 3-B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS-TWRI book 3, chap. B1. 1971. 26 p.
- 3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction*, by G.D. Bennett: USGS-TWRI book 3, chap. B2. 1976. 172 p.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS-TWRI book 3, chap. B3. 1980. 106 p.
- 3-B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS-TWRI book 3, chap. B4. 1990. 232 p.
- 3-B4. *Supplement 1. Regression modeling of ground-water flow—Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R.L. Cooley: USGS-TWRI book 3, chap. B4. 1993. 8 p.
- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS-TWRI book 3, chap. B5. 1987. 15 p.
- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS-TWRI book 3, chap. B6. 1987. 28 p.
- 3-B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E.J. Wexler: USGS-TWRI book 3, chap. B7. 1992. 190 p.
- 3-B8. *System and boundary conceptualization in ground-water flow simulation*, by T.E. Reilly: USGS-TWRI book 3, chap. B8. 2001. 29 p.

### **Section C. Sedimentation and Erosion Techniques**

- 3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS-TWRI book 3, chap. C1. 1970. 55 p.

3–C2. *Field methods for measurement of fluvial sediment*, by T.K. Edwards and G.D. Glysson: USGS–TWRI book 3, chap. C2. 1999. 89 p.

3–C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI book 3, chap. C3. 1972. 66 p.

#### **Book 4. Hydrologic Analysis and Interpretation**

##### **Section A. Statistical Analysis**

4–A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI book 4, chap. A1. 1968. 39 p.

4–A2. *Frequency curves*, by H.C. Riggs: USGS–TWRI book 4, chap. A2. 1968. 15 p.

4–A3. *Statistical methods in water resources*, by D.R. Helsel and R.M. Hirsch: USGS–TWRI book 4, chap. A3. 1991. Available only online at <http://water.usgs.gov/pubs/twri/twri4a3/>. (Accessed August 30, 2002.)

##### **Section B. Surface Water**

4–B1. *Low-flow investigations*, by H.C. Riggs: USGS–TWRI book 4, chap. B1. 1972. 18 p.

4–B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS–TWRI book 4, chap. B2. 1973. 20 p.

4–B3. *Regional analyses of streamflow characteristics*, by H.C. Riggs: USGS–TWRI book 4, chap. B3. 1973. 15 p.

##### **Section D. Interrelated Phases of the Hydrologic Cycle**

4–D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI book 4, chap. D1. 1970. 17 p.

#### **Book 5. Laboratory Analysis**

##### **Section A. Water Analysis**

5–A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI book 5, chap. A1. 1989. 545 p.

5–A2. *Determination of minor elements in water by emission spectroscopy*, by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI book 5, chap. A2. 1971. 31 p.

5–A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI book 5, chap. A3. 1987. 80 p.

5–A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greeson, editors: USGS–TWRI book 5, chap. A4. 1989. 363 p.

5–A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS–TWRI book 5, chap. A5. 1977. 95 p.

5–A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L.C. Friedman and D.E. Erdmann: USGS–TWRI book 5, chap. A6. 1982. 181 p.

##### **Section C. Sediment Analysis**

5–C1. *Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI book 5, chap. C1. 1969. 58 p.

#### **Book 6. Modeling Techniques**

##### **Section A. Ground Water**

6–A1. *A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS–TWRI book 6, chap. A1. 1988. 586 p.

6–A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S.A. Leake and D.E. Prudic: USGS–TWRI book 6, chap. A2. 1991. 68 p.

6–A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L.J. Torak: USGS–TWRI book 6, chap. A3. 1993. 136 p.

6–A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R.L. Cooley: USGS–TWRI book 6, chap. A4. 1992. 108 p.

- 6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L.J. Torak: USGS-TWRI book 6, chap. A5. 1993. 243 p.
- 6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler: USGS-TWRI book 6, chap. A6. 1996. 125 p.
- 6-A7. *User's guide to SEAWAT: A computer program for simulation of three-dimensional variable-density ground-water flow*, by Weixing Guo and Christian D. Langevin: USGS-TWRI book 6, chap. A7. 2002. 77 p.

## **Book 7. Automated Data Processing and Computations**

### **Section C. Computer Programs**

- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS-TWRI book 7, chap. C1. 1976. 116 p.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS-TWRI book 7, chap. C2. 1978. 90 p.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS-TWRI book 7, chap. C3. 1981. 110 p.

## **Book 8. Instrumentation**

### **Section A. Instruments for Measurement of Water Level**

- 8-A1. *Methods of measuring water levels in deep wells*, by M.S. Garber and F.C. Koopman: USGS-TWRI book 8, chap. A1. 1968. 23 p.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS-TWRI book 8, chap. A2. 1983. 57 p.

### **Section B. Instruments for Measurement of Discharge**

- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G.F. Smoot and C.E. Novak: USGS-TWRI book 8, chap. B2. 1968. 15 p.

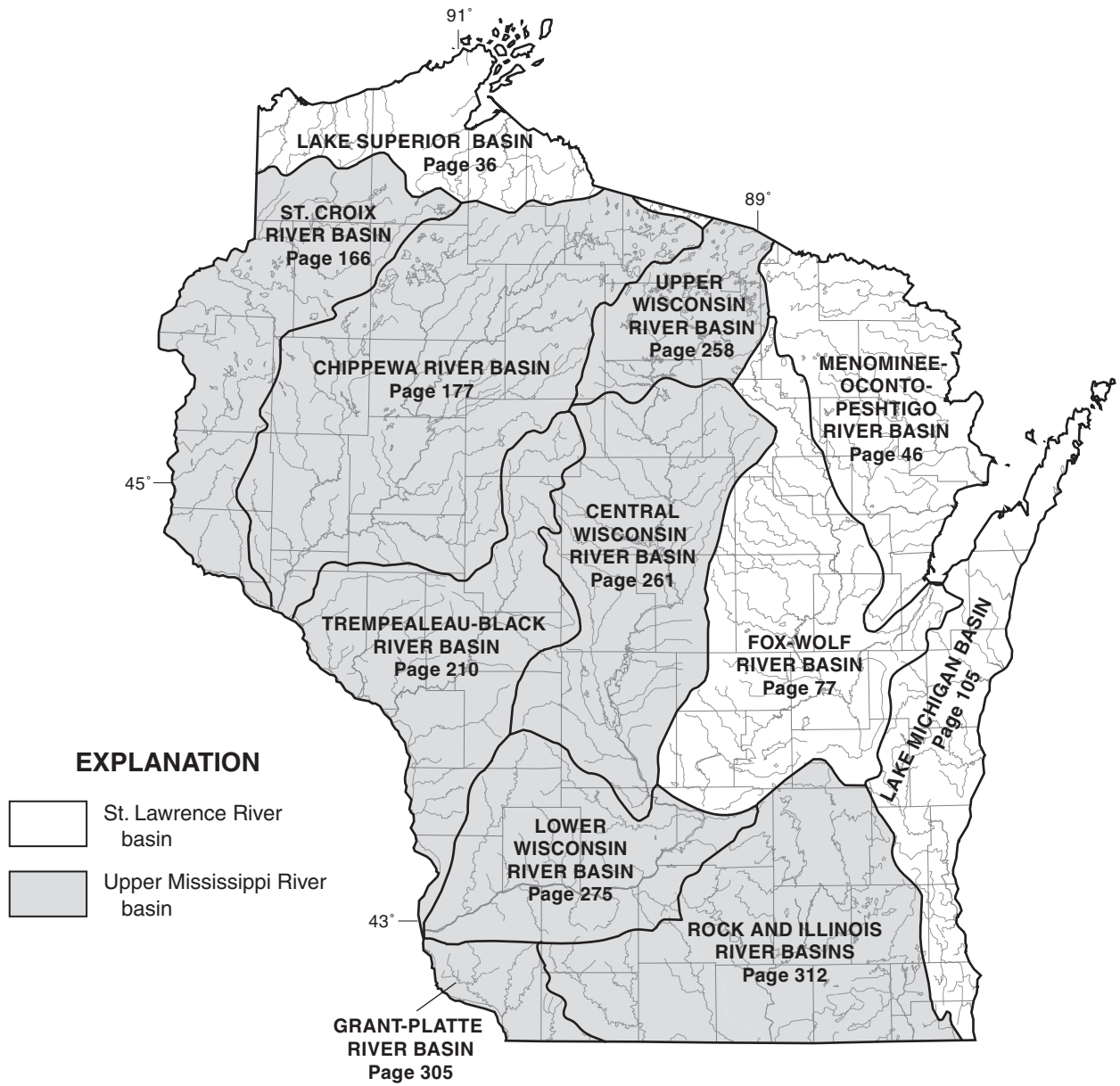
## **Book 9. Handbooks for Water-Resources Investigations**

### **Section A. National Field Manual for the Collection of Water-Quality Data**

- 9-A1. *National field manual for the collection of water-quality data: Preparations for water sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A1. 1998. 47 p.
- 9-A2. *National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A2. 1998. 94 p.
- 9-A3. *National field manual for the collection of water-quality data: Cleaning of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A3. 1998. 75 p.
- 9-A4. *National field manual for the collection of water-quality data: Collection of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A4. 1999. 156 p.
- 9-A5. *National field manual for the collection of water-quality data: Processing of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A5. 1999. 149 p.
- 9-A6. *National field manual for the collection of water-quality data: Field measurements*, edited by F.D. Wilde and D.B. Radtke: USGS-TWRI book 9, chap. A6. 1998. Variously paginated.
- 9-A7. *National field manual for the collection of water-quality data: Biological indicators*, edited by D.N. Myers and F.D. Wilde: USGS-TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.
- 9-A8. *National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS-TWRI book 9, chap. A8. 1998. 48 p.
- 9-A9. *National field manual for the collection of water-quality data: Safety in field activities*, by S.L. Lane and R.G. Fay: USGS-TWRI book 9, chap. A9. 1998. 60 p.

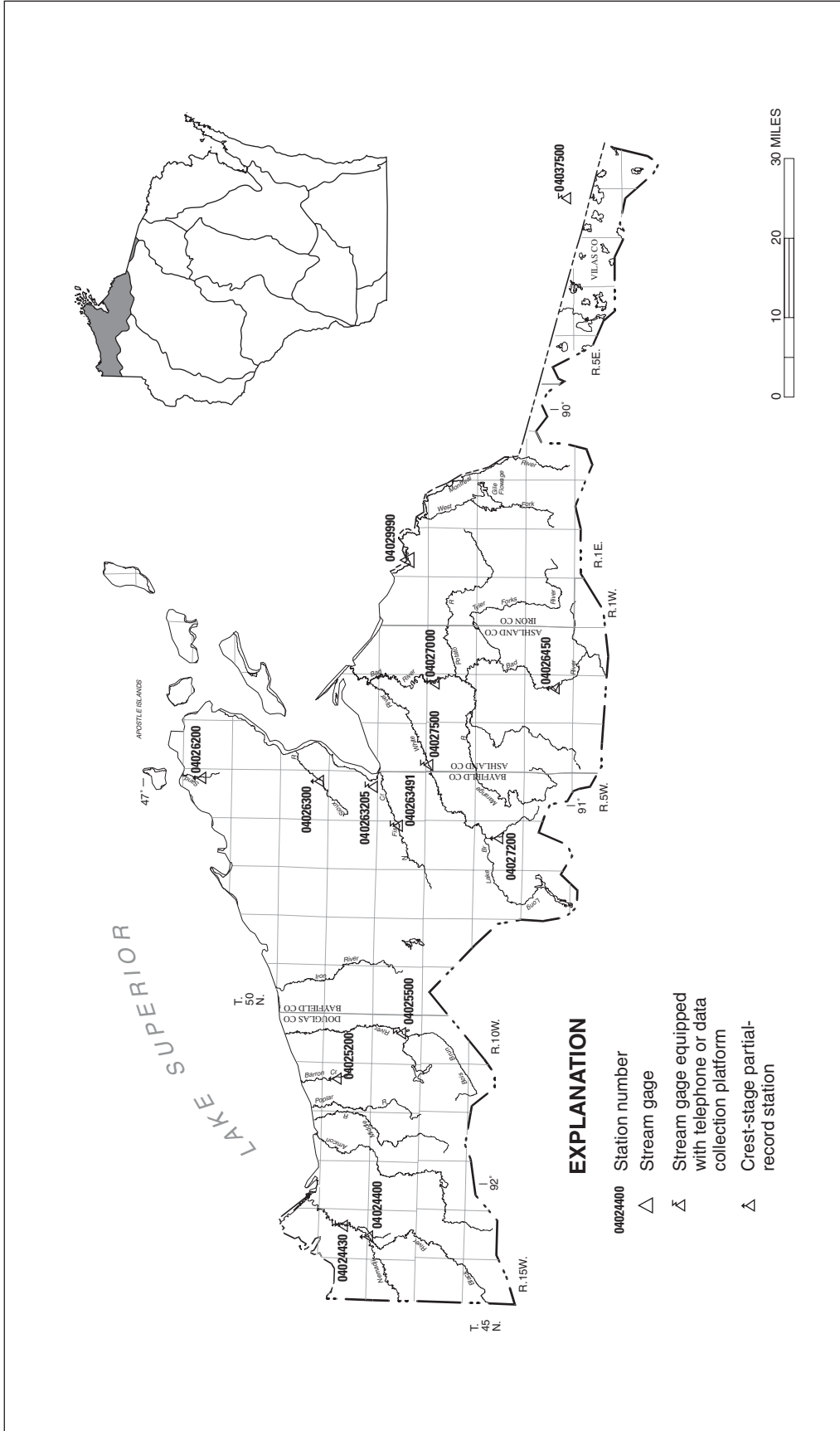






**Figure 4.** Major surface-water drainage basins and index of hydrologic records.

ST. LAWRENCE RIVER BASIN RECORDS



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

## LAKE SUPERIOR BASIN

04024430 NEMADJI RIVER NEAR SOUTH SUPERIOR, WI

LOCATION.--Lat 46°38'00", long 92°05'38", in SW ¼ sec.14, T.48 N., R.14 W., Douglas County, Hydrologic Unit 04010301, on right bank at downstream side of bridge on County Trunk Highway C, 2.0 mi south of South Superior and 7.8 mi downstream from Black River.

DRAINAGE AREA.--420 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1973 to current year.

REVISED RECORDS.--WDR WI-75-1: 1974(M). WDR WI-82-1: Drainage area and 1981.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 601.13 ft above NGVD of 1929.

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

EXTREMES OUTSIDE THE PERIOD OF RECORD.--A flood of Aug. 17, 1972, may have exceeded floods at this location since then.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	217	188	e70	e60	e60	e38	e220	317	317	517	131	45
2	205	177	e67	e60	e60	e39	e800	293	285	408	138	42
3	174	170	e62	e58	e60	e38	e700	270	257	495	240	41
4	673	164	e58	e57	e59	e38	e500	252	233	636	163	40
5	1,840	160	e59	e60	e52	e38	e400	391	212	429	131	40
6	1,100	159	e60	e64	e47	e38	e290	2,070	200	331	119	39
7	1,280	155	e61	e66	e44	e39	e300	1,340	220	314	105	39
8	840	151	e62	e66	e40	e40	e310	949	264	638	96	38
9	632	151	e62	e66	e40	e41	e460	1,610	245	420	89	38
10	505	152	e62	e62	e40	e41	e1,600	3,670	280	824	86	38
11	420	147	e64	e60	e39	e41	e2,200	2,370	1,000	1,710	99	37
12	411	141	e70	e59	e38	e42	e1,300	2,280	815	930	98	49
13	650	133	e74	e60	e38	e43	e900	1,710	578	602	86	107
14	474	e120	e80	e60	e38	e43	e700	1,280	454	469	78	93
15	373	e100	e82	e58	e37	e43	611	1,010	363	662	72	74
16	318	e90	e80	e55	e37	e58	491	818	293	677	67	66
17	274	e80	e76	e55	e37	e100	483	678	250	648	64	61
18	251	e77	e80	e54	e37	e140	437	579	230	512	61	58
19	254	e78	e85	e53	e38	e130	1,080	563	238	348	60	129
20	266	e80	e90	e52	e39	e120	1,540	1,760	211	431	63	236
21	252	e80	e85	e51	e40	e130	2,280	1,390	182	293	60	161
22	244	e77	e80	e50	e39	e200	1,450	989	161	233	58	132
23	239	e76	e75	e50	e39	e300	943	816	1,820	200	55	118
24	225	e75	e70	e50	e38	e330	735	702	3,200	177	55	107
25	210	e75	e66	e51	e37	e360	606	596	1,770	159	53	96
26	208	e75	e66	e52	e36	e300	513	513	1,640	148	51	88
27	211	e77	e62	e54	e36	e240	453	442	1,070	134	49	80
28	201	e82	e62	e54	e37	e180	431	403	746	123	48	75
29	193	e81	e64	e56	---	e140	392	368	732	126	49	70
30	191	e80	e65	e58	---	e200	349	338	671	127	48	67
31	195	---	e65	e59	---	e220	---	334	---	124	47	---
TOTAL	13,526	3,451	2,164	1,770	1,182	3,750	23,474	31,101	18,937	13,845	2,619	2,304
MEAN	436	115	69.8	57.1	42.2	121	782	1,003	631	447	84.5	76.8
MAX	1,840	188	90	66	60	360	2,280	3,670	3,200	1,710	240	236
MIN	174	75	58	50	36	38	220	252	161	123	47	37
CFSM	1.04	0.27	0.17	0.14	0.10	0.29	1.86	2.39	1.50	1.06	0.20	0.18
IN.	1.20	0.31	0.19	0.16	0.10	0.33	2.08	2.75	1.68	1.23	0.23	0.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

	1974	1975	1976	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			
MEAN	313	301	139	81.1	101	444	1,406	610	474	360	219	318																					
MAX	1,082	1,200	418	177	336	1,088	3,474	1,355	1,357	1,145	1,047	1,485																					
(WY)	(1983)	(1992)	(1992)	(1984)	(1984)	(1995)	(2001)	(1979)	(1993)	(1999)	(1999)	(1986)																					
MIN	41.0	33.9	28.2	27.3	29.8	96.6	244	119	82.9	46.6	40.6	34.4																					
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(2002)	(1987)	(1998)	(1988)	(1988)	(1976)	(1976)																					

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1974 - 2003
ANNUAL TOTAL	132,141	118,123	
ANNUAL MEAN	362	324	397
HIGHEST ANNUAL MEAN			786
LOWEST ANNUAL MEAN			200
HIGHEST DAILY MEAN	(a)5,400	Apr 13	3,670
LOWEST DAILY MEAN	(a)48	Feb 5,6	(a)36
ANNUAL SEVEN-DAY MINIMUM	(a)49	Feb 1	(a)37
MAXIMUM PEAK FLOW			4,150
MAXIMUM PEAK STAGE			18.12
ANNUAL RUNOFF (CFSM)	0.86	0.77	0.94
ANNUAL RUNOFF (INCHES)	11.70	10.46	12.83
10 PERCENT EXCEEDS	827	817	960
50 PERCENT EXCEEDS	144	130	150
90 PERCENT EXCEEDS	60	40	56

- (a) Ice affected
- (b) Gage height, 25.18 ft
- (c) Discharge 13,700 ft<sup>3</sup>/s, rating then in use
- (e) Estimated due to ice effect or missing record

STREAMS TRIBUTARY TO LAKE SUPERIOR  
04025500 BOIS BRULE RIVER AT BRULE, WI

LOCATION.--Lat 46°32'16", long 91°35'43", in NW ¼ SW ¼ sec.23, T.47 N., R.10 W., Douglas County, Hydrologic Unit 04010301, on right bank, 1.4 mi southwest of Brule Post Office, 1.4 mi downstream from Nebagamon Creek, and 1.7 mi upstream from Little Bois Brule River.

DRAINAGE AREA.--118 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1942 to September 1981, January 1984 to current year. Prior to January 1943, monthly discharge published in WSP 1307. January 1984 to September 1994, incorrectly published as "near Brule."

REVISED RECORDS.--WSP 1337: 1943(M), 1944, 1945-50(M). WDR WI-92-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 948.49 ft above NGVD of 1929. Prior to October 1964, nonrecording gage at same site and datum, supplemented by water-stage recorder part of 1959-62.

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	164	e140	e130	e140	e130	153	195	192	221	139	108
2	167	161	e140	127	e140	e130	166	191	186	206	138	108
3	162	159	e130	e130	e140	e130	164	187	180	221	137	107
4	235	157	e120	126	e130	e130	160	184	178	224	134	108
5	286	156	e130	127	e120	e120	156	204	173	208	132	107
6	292	156	e130	127	e120	e120	152	227	174	197	130	107
7	302	154	e130	126	e110	e130	152	224	176	190	128	107
8	273	154	e130	127	e120	e130	152	216	171	183	126	107
9	253	153	e130	129	e120	e120	164	287	166	177	124	108
10	239	158	e130	e130	e120	e110	205	370	190	182	123	108
11	227	157	e130	e130	e120	e120	243	438	214	200	123	108
12	223	155	132	e130	e120	e120	236	462	203	197	123	116
13	214	152	133	e120	e120	e120	218	395	194	184	121	120
14	204	151	132	e130	e120	124	214	361	179	177	120	118
15	194	149	131	e130	e120	131	212	332	168	186	119	114
16	191	147	130	e130	e120	144	210	306	161	188	118	113
17	187	146	130	e130	e120	143	209	285	158	186	117	113
18	186	145	138	e130	e130	136	211	266	157	175	116	113
19	192	147	142	e130	e130	134	248	287	153	166	115	158
20	187	145	139	e130	e130	145	275	352	148	168	115	147
21	185	145	137	e130	e140	152	300	324	143	167	114	136
22	184	145	135	e130	e130	169	277	308	140	158	113	128
23	180	144	e130	e130	e130	174	254	293	252	152	115	122
24	176	142	e130	e130	e130	195	236	270	280	148	118	119
25	175	140	130	e130	e120	188	224	250	293	144	115	117
26	176	e140	e130	e130	e120	174	216	236	323	142	115	117
27	174	e140	e130	e120	e130	163	213	226	277	140	113	125
28	172	139	129	e130	e130	161	210	220	259	137	112	131
29	170	140	129	e130	---	155	205	211	256	135	111	127
30	171	e140	130	e130	---	150	200	206	236	133	110	125
31	167	---	e130	e130	---	149	---	199	---	138	109	---
TOTAL	6,318	4,481	4,087	3,989	3,520	4,397	6,235	8,512	5,980	5,430	3,743	3,542
MEAN	204	149	132	129	126	142	208	275	199	175	121	118
MAX	302	164	142	130	140	195	300	462	323	224	139	158
MIN	162	139	120	120	110	110	152	184	140	133	109	107
CFSM	1.73	1.27	1.12	1.09	1.07	1.20	1.76	2.33	1.69	1.48	1.02	1.00
IN.	1.99	1.41	1.29	1.26	1.11	1.39	1.97	2.68	1.89	1.71	1.18	1.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2003, BY WATER YEAR (WY)

MEAN	158	161	143	133	133	155	282	234	193	168	149	156
MAX	259	295	205	164	187	265	611	495	416	345	289	297
(WY)	(1978)	(1972)	(1972)	(1984)	(1966)	(1945)	(2001)	(1950)	(1944)	(1952)	(1999)	(1951)
MIN	110	119	113	104	104	105	157	140	122	108	114	108
(WY)	(1949)	(1949)	(1948)	(1948)	(1948)	(1943)	(1959)	(1958)	(1948)	(1964)	(1948)	(1948)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1943 - 2003	
ANNUAL TOTAL	64,874		60,234			
ANNUAL MEAN	178		165		172	
HIGHEST ANNUAL MEAN					223	
LOWEST ANNUAL MEAN					133	
HIGHEST DAILY MEAN	890	Apr 14	462	May 12	1,700	Apr 23, 2001
LOWEST DAILY MEAN	112	(a)Jul 17	107	(a)Sep 3	74	Mar 23, 1943
ANNUAL SEVEN-DAY MINIMUM	114	Jul 14	107	Sep 2	89	Mar 23, 1943
MAXIMUM PEAK FLOW			(b)505	May 11	1,860	Apr 23, 2001
MAXIMUM PEAK STAGE			(c)4.33	Jan 22	7.24	Apr 23, 2001
INSTANTANEOUS LOW FLOW			106	(a)Sep 3	67	Mar 13, 1943
ANNUAL RUNOFF (CFSM)	1.51		1.40		1.46	
ANNUAL RUNOFF (INCHES)	20.45		18.99		19.79	
10 PERCENT EXCEEDS	249		237		254	
50 PERCENT EXCEEDS	150		144		147	
90 PERCENT EXCEEDS	130		118		120	

- (a) Also occurred additional days
- (b) Gage height, 3.23 ft
- (c) Ice affected
- (e) Estimated due to ice effect or missing record

040263205 WHITTLESEY CREEK NEAR ASHLAND, WI

LOCATION.--Lat 46°35'40", long 90°57'47", in SE ¼ NW ¼ sec.35, T.48 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, at Cherryville road, 3.7 mi west of courthouse in Ashland.

DRAINAGE AREA.--37.6 mi<sup>2</sup>, of which 30.2 mi<sup>2</sup> is noncontributing.

PERIOD OF RECORD.--April 1999 to current year.

REVISED RECORDS.--WDR WI-02-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 615 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	20	19	18	19	19	22	20	19	18	18	17
2	20	20	19	19	18	18	23	20	18	18	17	17
3	19	20	19	19	19	18	22	20	18	19	17	17
4	122	20	19	19	18	19	21	19	18	18	17	17
5	39	20	19	19	18	18	21	20	18	18	17	17
6	35	20	19	19	18	18	21	20	19	18	17	17
7	29	20	19	19	18	19	21	20	19	18	17	17
8	25	20	19	19	18	19	21	20	19	18	17	17
9	23	20	19	19	18	18	31	50	19	18	17	17
10	22	20	19	19	18	18	111	55	21	20	17	17
11	21	20	19	19	19	19	75	192	21	21	17	17
12	22	20	19	18	18	19	38	63	19	18	17	17
13	21	20	19	18	18	19	35	29	19	18	17	17
14	20	20	19	18	18	19	45	24	18	18	17	17
15	20	19	19	18	18	28	31	22	18	18	17	17
16	20	19	19	18	18	48	24	21	18	17	17	17
17	20	19	19	18	18	29	23	20	18	17	17	17
18	20	19	20	18	19	22	30	20	18	17	17	19
19	21	20	21	18	18	23	39	48	18	17	17	22
20	21	20	20	18	19	26	122	49	18	17	18	18
21	21	20	20	18	19	34	66	26	18	17	17	18
22	21	19	19	18	18	63	33	22	18	17	17	18
23	21	19	19	18	18	48	26	21	20	17	17	18
24	20	19	19	18	18	45	23	20	19	17	18	18
25	21	19	19	18	18	31	22	20	20	17	17	18
26	23	19	19	18	18	25	21	19	20	17	18	18
27	22	19	19	18	18	22	21	19	19	17	17	18
28	21	19	19	18	18	20	21	19	18	16	17	18
29	20	20	19	18	---	20	20	19	18	16	17	18
30	20	19	19	18	---	21	20	19	18	18	17	18
31	20	---	19	19	---	21	---	19	---	21	17	---
TOTAL	791	588	594	569	510	786	1,049	975	561	551	531	528
MEAN	25.5	19.6	19.2	18.4	18.2	25.4	35.0	31.5	18.7	17.8	17.1	17.6
MAX	122	20	21	19	19	63	122	192	21	21	18	22
MIN	19	19	19	18	18	18	20	19	18	16	17	17
CFSM	3.45	2.65	2.59	2.48	2.46	3.43	4.73	4.25	2.53	2.40	2.31	2.38
IN.	3.98	2.96	2.99	2.86	2.56	3.95	5.27	4.90	2.82	2.77	2.67	2.65

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	2001	2002	2000	2001	2001	2002	2001	2003	1999	2003	2001	2003
MEAN	20.9	20.6	18.9	18.0	18.8	21.6	41.9	24.1	19.8	22.5	19.7	19.9
MAX	25.5	25.1	19.8	18.4	21.4	25.4	76.5	31.5	22.6	36.6	22.8	22.4
(WY)	(2003)	(2001)	(2002)	(2003)	(2000)	(2003)	(2001)	(2003)	(1999)	(1999)	(1999)	(2002)
MIN	18.9	18.5	18.0	17.5	17.7	18.2	19.2	19.4	18.7	17.8	17.1	17.6
(WY)	(2001)	(2002)	(2000)	(2001)	(2001)	(2002)	(2000)	(1999)	(2003)	(2001)	(2003)	(2003)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	8,583		8,033			
ANNUAL MEAN	23.5		22.0		22.3	
HIGHEST ANNUAL MEAN					24.3	
LOWEST ANNUAL MEAN					19.8	
HIGHEST DAILY MEAN	262	Apr 11	192	May 11	370	Apr 23, 2001
LOWEST DAILY MEAN	17	(a)Jan 18	16	Jul 28,29	16	(b)Jul 26, 2001
ANNUAL SEVEN-DAY MINIMUM	17	Feb 4	17	(a)Jul 23	17	(a)Jul 23, 2003
MAXIMUM PEAK FLOW			432	May 11	777	Apr 23, 2001
MAXIMUM PEAK STAGE			4.86	May 11	(c)6.44	Apr 23, 2001
INSTANTANEOUS LOW FLOW			16	(a)Jul 16	16	(a)Jul 25, 2001
ANNUAL RUNOFF (CFSM)	3.18		2.97		3.01	
ANNUAL RUNOFF (INCHES)	43.15		40.38		40.86	
10 PERCENT EXCEEDS	24		24		24	
50 PERCENT EXCEEDS	19		19		19	
90 PERCENT EXCEEDS	18		17		18	

(a) Also occurred additional days

(b) Also occurred July 28, 29, 2003, and Feb. 17, 2000, estimated

(c) 7.18 ft, July 5, 1999, from crest-stage gage

## STREAMS TRIBUTARY TO LAKE SUPERIOR

## 040263491 NORTH FISH CREEK NEAR MOQUAH, WI

LOCATION.--Lat 46°32'56", long 91°03'43", in SW ¼ SE ¼ sec.13, T.47 N., R.6 W., Bayfield County, Hydrologic Unit 04010301, on left bank just downstream from bridge on old U.S. Highway 2, and 1.3 mi southeast of Moquah.

DRAINAGE AREA.--65.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1989 to September 1991, October 1994 to September 1997, July 2000 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 660 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	55	53	49	50	49	64	52	53	51	50	49
2	59	56	52	50	50	48	81	50	55	53	51	49
3	57	55	51	50	51	50	66	51	55	62	50	49
4	463	54	52	50	49	49	58	49	52	54	49	49
5	237	54	52	50	51	50	54	58	52	51	50	49
6	147	54	52	50	50	50	53	66	54	51	49	49
7	121	54	52	50	50	49	53	60	55	51	49	49
8	88	54	50	51	50	48	54	57	54	50	49	49
9	76	54	52	51	49	48	126	213	53	50	49	49
10	68	57	52	49	48	48	441	180	62	55	50	49
11	63	55	52	49	50	49	266	661	65	55	51	49
12	64	56	52	49	49	48	126	303	60	53	49	51
13	64	54	52	48	49	49	98	126	56	51	49	50
14	61	54	52	48	49	63	110	90	54	51	49	50
15	58	54	52	50	49	111	89	76	53	51	49	49
16	57	54	51	50	50	155	71	68	52	51	49	50
17	57	54	52	49	50	105	65	63	52	51	49	49
18	57	54	53	50	50	65	82	61	52	50	49	54
19	58	54	62	50	49	63	132	235	51	50	50	63
20	58	54	56	49	50	70	452	275	51	51	50	52
21	58	54	52	48	50	101	294	111	51	50	49	51
22	59	53	51	49	49	197	118	82	51	50	49	50
23	58	54	51	51	49	155	84	72	61	49	50	50
24	58	53	50	52	48	132	71	66	55	50	51	50
25	59	53	50	50	50	87	66	61	57	50	50	50
26	64	52	50	48	50	69	60	59	58	50	54	51
27	61	52	50	51	49	60	58	57	56	49	50	51
28	59	53	50	50	49	56	57	56	54	49	49	51
29	57	53	50	49	---	51	55	54	53	49	49	50
30	57	52	50	50	---	51	53	55	52	50	49	50
31	56	---	50	50	---	52	---	54	---	50	49	---
TOTAL	2,620	1,619	1,606	1,540	1,387	2,278	3,457	3,521	1,639	1,588	1,539	1,511
MEAN	84.5	54.0	51.8	49.7	49.5	73.5	115	114	54.6	51.2	49.6	50.4
MAX	463	57	62	52	51	197	452	661	65	62	54	63
MIN	56	52	50	48	48	48	53	49	51	49	49	49
CFSM	3.05	1.95	1.87	1.79	1.79	2.65	4.16	4.10	1.97	1.85	1.79	1.82
IN.	3.52	2.17	2.16	2.07	1.86	3.06	4.64	4.73	2.20	2.13	2.07	2.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	72.4	66.7	55.8	54.2	55.2	90.2	187	87.1	67.8	74.6	57.0	70.8		
MAX	110	102	68.6	63.7	64.1	141	374	114	97.6	155	74.4	135		
(WY)	(1991)	(1997)	(2002)	(1997)	(1997)	(1990)	(2001)	(2003)	(1991)	(1996)	(1990)	(1990)		
MIN	50.7	53.1	49.0	49.4	49.5	59.3	87.8	59.6	54.6	51.2	49.6	50.4		
(WY)	(1995)	(1995)	(2001)	(2001)	(2003)	(2001)	(1990)	(1990)	(2003)	(1995)	(2003)	(2003)		

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1990 - 2003	
	29,119	79.8	24,305	66.6	87.9	1996
ANNUAL TOTAL						
ANNUAL MEAN						
HIGHEST ANNUAL MEAN					87.9	1996
LOWEST ANNUAL MEAN					66.6	2003
HIGHEST DAILY MEAN	1,230	Apr 11	661	May 11	1,960	Apr 23, 2001
LOWEST DAILY MEAN	50	(a)Sep 22	48	(a)Jan 13	45	(b)Dec 10, 2000
ANNUAL SEVEN-DAY MINIMUM	50	Dec 24	48	Mar 7	48	(c)Dec 4, 2000
MAXIMUM PEAK FLOW			1,290	May 11	3,420	Apr 23, 2001
MAXIMUM PEAK STAGE			11.28	May 11	16.79	Apr 23, 2001
INSTANTANEOUS LOW FLOW			(d)36	(a)Feb 7	(d)35	(f)Dec 19, 1989
ANNUAL RUNOFF (CFSM)	1.22		1.02		1.20	
ANNUAL RUNOFF (INCHES)	16.56		13.82		16.34	
10 PERCENT EXCEEDS	83		81		100	
50 PERCENT EXCEEDS	56		52		57	
90 PERCENT EXCEEDS	52		49		50	

(a) Also occurred additional days

(b) Also occurred Jan. 2, 1995, estimated

(c) Also occurred Mar. 7, 2003, and Dec. 29, 1994, estimated

(d) Result of freezeup

(f) Also occurred Feb. 21, 2001



04027000 BAD RIVER NEAR ODANAH, WI

LOCATION.--Lat 46°29'15", long 90°41'45", in SE ¼ sec.2, T.46 N., R.3 W., Ashland County, Hydrologic Unit 04010302, Bad River Indian Reservation, on left bank just downstream from Elm Hoist bridge, 5.0 mi downstream from Potato River, 8.5 mi south of Odanah, and 23 mi from mouth.

DRAINAGE AREA.--597 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1914 to December 1922 (monthly discharge for some periods published in WSP 1307) May 1948 to current year.

REVISED RECORDS.--WSP 1337: 1922. WDR WI-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 668.30 ft above NGVD of 1929. May 17, 1948, to Nov. 6, 1959, and Oct. 19, 1960, to Nov. 23, 1961, water-stage recorder. Nov. 7, 1959, to Oct. 18, 1960, and Nov. 24, 1961, to July 12, 1962, nonrecording gage. Prior to Nov. 11, 1922, water-stage recorder at site 2 mi downstream at different datum.

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

EXTREMES OUTSIDE THE PERIOD OF RECORD.--Flood of June 24, 1946, reached a stage of at least 22.2 ft, top of former downstream bridge submerged, information from Indian Service.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	473	647	e230	e180	e150	e120	e620	722	413	264	238	106
2	455	578	e230	e180	e150	e120	e860	655	374	254	263	104
3	390	524	e230	e190	e150	e120	e700	590	338	301	222	101
4	1,790	484	e220	e180	e140	e120	e680	546	313	380	194	100
5	4,650	456	e220	e180	e140	e110	e840	512	287	334	179	99
6	3,830	430	e230	e190	e140	e110	e700	572	271	280	163	100
7	4,560	403	e240	e190	e140	e120	e600	621	281	236	151	100
8	3,380	398	e250	e190	e140	e120	e520	592	293	206	142	100
9	2,420	394	e250	e200	e140	e120	679	625	292	185	134	100
10	1,720	416	e240	e190	e140	e120	1,830	1,220	329	190	129	98
11	1,270	500	e250	e180	e130	e130	3,380	4,590	754	294	129	93
12	1,040	490	e270	e170	e120	e130	3,270	18,800	699	311	125	94
13	1,070	451	e270	e170	e120	e130	2,740	12,700	550	262	120	102
14	926	418	e270	e170	e120	e130	2,820	6,460	439	219	116	108
15	787	e380	e270	e170	e120	e140	3,060	3,200	360	205	112	111
16	679	e370	e260	e170	e120	e300	2,540	2,060	309	202	109	109
17	597	e340	e260	e170	e120	e900	2,040	1,520	281	205	104	103
18	547	e330	e270	e170	e120	e700	1,810	1,190	261	187	99	95
19	625	e340	e340	e160	e130	e620	2,110	1,060	241	172	103	141
20	785	e320	e550	e150	e130	e580	2,930	3,500	223	176	126	217
21	733	e320	e500	e140	e140	e540	6,300	2,560	213	190	135	229
22	793	e310	e430	e140	e130	e700	5,070	1,800	202	200	128	200
23	762	e300	e390	e140	e120	e1,000	3,240	1,320	217	191	122	173
24	685	e290	e370	e140	e120	e2,000	2,220	1,030	250	175	124	156
25	645	e280	e330	e140	e120	e2,700	1,700	838	262	160	125	145
26	700	e230	e300	e140	e120	e2,300	1,380	712	317	154	137	139
27	748	e230	e260	e130	e120	e1,200	1,170	613	338	171	135	146
28	705	e250	e250	e140	e120	e900	1,030	553	299	148	123	177
29	665	e300	e240	e140	---	e800	912	511	281	136	119	233
30	668	e270	e240	e140	---	e700	809	476	284	132	113	228
31	707	---	e240	e150	---	e600	---	451	---	145	109	---
TOTAL	39,805	11,449	8,900	5,090	3,650	18,380	58,560	72,599	9,971	6,665	4,328	4,007
MEAN	1,284	382	287	164	130	593	1,952	2,342	332	215	140	134
MAX	4,650	647	550	200	150	2,700	6,300	18,800	754	380	263	233
MIN	390	230	220	130	120	110	520	451	202	132	99	93
CFSM	2.15	0.64	0.48	0.28	0.22	0.99	3.27	3.92	0.56	0.36	0.23	0.22
IN.	2.48	0.71	0.55	0.32	0.23	1.15	3.65	4.52	0.62	0.42	0.27	0.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

MEAN	473	515	294	190	199	671	2,225	1,066	637	481	300	346
MAX	1,861	2,151	638	410	713	2,494	4,320	2,752	2,054	2,311	1,565	1,775
(WY)	(1986)	(1992)	(1992)	(1992)	(1984)	(1973)	(2001)	(1950)	(1951)	(1949)	(1972)	(1977)
MIN	67.1	95.2	107	95.0	69.3	113	513	202	121	77.9	68.2	74.3
(WY)	(1949)	(1949)	(1977)	(1917)	(1964)	(1917)	(1987)	(1998)	(1948)	(1964)	(1948)	(1976)

STREAMS TRIBUTARY TO LAKE SUPERIOR  
04027000 BAD RIVER NEAR ODANAH, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1914 - 2003	
ANNUAL TOTAL	285,342		243,404			
ANNUAL MEAN	782		667		619	
HIGHEST ANNUAL MEAN					942 1983	
LOWEST ANNUAL MEAN					346 1990	
HIGHEST DAILY MEAN	14,200	Apr 16	18,800	May 12	22,000	Apr 24, 1960
LOWEST DAILY MEAN	123	Aug 15	93	Sep 11	52	(a)Oct 1, 1948
ANNUAL SEVEN-DAY MINIMUM	136	Aug 10	98	Sep 6	54	Feb 19, 1964
MAXIMUM PEAK FLOW			20,600	May 12	(b)27,700	Apr 24, 1960
MAXIMUM PEAK STAGE			18.67	May 12	(c)21.70	Apr 24, 1960
INSTANTANEOUS LOW FLOW			89	Sep 11	(d)34	Nov 8, 1976
ANNUAL RUNOFF (CFSM)	1.31		1.12		1.04	
ANNUAL RUNOFF (INCHES)	17.78		15.17		14.08	
10 PERCENT EXCEEDS	1,100		1,440		1,430	
50 PERCENT EXCEEDS	313		260		275	
90 PERCENT EXCEEDS	170		120		120	

(a) Also occurred Aug. 6, 7, 1964

(b) From rating curve extended above 12,000 ft<sup>3</sup>/s and a comparison with contracted-opening measurement of peak flow 45,600 ft<sup>3</sup>/s at Odanah, drainage area, 990 mi<sup>2</sup>

(c) From floodmarks

(d) Result of freezeup

(e) Estimated due to ice effect or missing record

04027500 WHITE RIVER NEAR ASHLAND, WI

LOCATION.--Lat 46°29'54", long 90°54'11"(revised), in NE ¼ NE ¼ sec.6, T.46 N., R.4 W., Ashland County, Hydrologic Unit 04010302, at downstream end of powerplant of Lake Superior District Power Co., 0.3 mi downstream from bridge on State Highway 112 over dam, and 4.5 mi south of Ashland city limits.

DRAINAGE AREA.--301 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1948 to current year.

REVISED RECORDS.--WDR WI-82-1: Drainage area. WDR WI-92-1: 1952-53(M), 1960(M), 1967(M), 1972(M), and 1978(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 660.15 ft above NGVD of 1929 (Lake Superior District Power Co. bench mark). Prior to May 20, 1976, nonrecording gage at same site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	236	217	151	119	e180	e190	225	240	221	203	184	159
2	222	213	126	132	e180	e190	342	213	214	197	184	159
3	241	204	99	162	e180	e180	323	211	209	202	184	159
4	1,080	196	128	175	e180	e140	256	207	208	233	183	159
5	742	194	142	193	e170	e170	220	204	209	230	183	159
6	829	193	188	193	e130	e160	239	218	216	205	183	163
7	906	202	214	192	e140	e170	221	275	233	193	184	162
8	798	200	171	191	e160	e170	203	260	273	189	173	162
9	682	202	172	192	e170	e180	267	436	262	188	172	163
10	535	194	152	175	e180	e170	1,040	542	267	187	176	162
11	401	199	189	106	e180	e180	877	2,070	389	199	181	158
12	355	143	202	95	e180	e180	765	1,380	430	221	184	164
13	315	174	209	e160	e170	e190	669	1,360	392	207	184	165
14	292	152	206	e160	e170	e190	579	1,160	310	193	184	168
15	236	132	193	e170	e180	e230	452	820	257	188	178	167
16	224	139	189	e170	e170	e320	434	532	230	190	172	163
17	221	140	187	e170	e160	370	327	376	218	189	166	162
18	213	140	189	e170	e170	291	357	321	213	187	165	158
19	213	149	226	e170	e180	273	528	332	208	186	174	184
20	219	146	209	e170	e180	267	1,300	835	200	186	171	219
21	225	183	217	e160	e180	251	1,210	604	198	186	181	235
22	223	172	188	e160	e180	392	966	658	196	188	170	213
23	228	194	169	e150	e170	666	880	547	195	189	165	187
24	226	191	146	e160	e150	707	642	374	231	187	167	180
25	227	177	161	e160	e160	560	441	319	249	187	168	179
26	250	135	172	e170	e160	400	364	271	261	187	174	177
27	256	125	174	e160	e180	329	317	237	262	187	172	177
28	262	155	194	e160	e190	255	296	239	242	187	164	177
29	248	208	201	e170	---	218	271	229	221	187	165	177
30	221	184	201	e170	---	210	238	223	214	172	168	173
31	218	---	174	e170	---	210	---	221	---	185	163	---
TOTAL	11,544	5,253	5,539	5,055	4,780	8,409	15,249	15,914	7,428	6,015	5,422	5,190
MEAN	372	175	179	163	171	271	508	513	248	194	175	173
MAX	1,080	217	226	193	190	707	1,300	2,070	430	233	184	235
MIN	213	125	99	95	130	140	203	204	195	172	163	158
CFSM	1.24	0.58	0.59	0.54	0.57	0.90	1.69	1.71	0.82	0.64	0.58	0.57
IN.	1.43	0.65	0.68	0.62	0.59	1.04	1.88	1.97	0.92	0.74	0.67	0.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
	236	445	(1983)	152	(1949)
	247	509	(1992)	160	(1977)
	203	311	(2002)	150	(1964)
	186	248	(1952)	146	(1991)
	194	318	(1984)	136	(1968)
	306	666	(1973)	178	(1965)
	594	1,330	(2001)	231	(2000)
	361	867	(1950)	175	(1998)
	282	707	(1952)	140	(1948)
	266	697	(1953)	142	(1988)
	227	744	(1972)	147	(1948)
	235	635	(1960)	146	(1948)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1948 - 2003
ANNUAL TOTAL	111,871	95,798	
ANNUAL MEAN	306	262	279
HIGHEST ANNUAL MEAN			426
LOWEST ANNUAL MEAN			210
HIGHEST DAILY MEAN	3,050	2,070	4,100
LOWEST DAILY MEAN	99	95	61
ANNUAL SEVEN-DAY MINIMUM	143	143	68
MAXIMUM PEAK FLOW		4,500	(a)8,100
MAXIMUM PEAK STAGE		5.84	7.90
ANNUAL RUNOFF (CFSM)	1.02	0.87	0.93
ANNUAL RUNOFF (INCHES)	13.83	11.84	12.58
10 PERCENT EXCEEDS	393	432	463
50 PERCENT EXCEEDS	203	191	209
90 PERCENT EXCEEDS	165	160	160

(a) From rating curve extended above 3,000 ft<sup>3</sup>/s

(e) Estimated due to ice effect or missing record

## STREAMS TRIBUTARY TO LAKE SUPERIOR

## 04029990 MONTREAL RIVER AT SAXON FALLS NEAR SAXON, WI

LOCATION.--Lat 46°32'13", long 90°22'47", in SW ¼ NW ¼ sec.21, T.47 N., R.1 E., Iron County, Hydrologic Unit 04010302, at Saxon Falls powerhouse, 3.4 mi northeast of Saxon, and 3.8 mi upstream from mouth.

DRAINAGE AREA.--262 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1938 to September 1970, October 1986 to current year. Published as "Montreal River near Saxon" (04030000), September 1938 to September 1970.

REVISED RECORDS.--WSP 894: 1938-39. WSP 924: 1939-40. WSP 1307: 1948(M). WSP 1627: 1958.

GAGE.--Headwater and tailwater gages read by Northern States Power Company. September 1938 to September 1970, water-stage recorder at site 1.8 mi downstream at elevation of 760 ft above NGVD of 1929 (from Power Company data).

REMARKS.--Diurnal fluctuation caused by Saxon Falls powerplant. Flow regulated by Gile Reservoir on West Branch Montreal River (capacity 1,290,000,000 ft<sup>3</sup>/s) since April 1941.

COOPERATION.--Records were provided by Northern States Power Company and reviewed by the Geological Survey.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255	350	195	200	161	77	415	290	220	225	240	95
2	290	290	200	185	161	77	470	255	205	198	125	100
3	230	290	195	175	155	71	420	225	190	220	125	94
4	200	225	205	185	131	71	345	225	190	220	111	20
5	1,920	210	205	175	119	71	305	200	190	195	130	47
6	1,920	190	216	220	95	66	305	220	205	195	115	53
7	1,920	205	215	210	107	71	318	220	225	166	115	53
8	1,540	225	215	210	115	64	325	220	225	158	115	65
9	1,140	215	195	210	115	64	298	220	225	160	115	59
10	788	215	210	200	105	66	470	420	225	129	115	47
11	560	310	205	185	105	71	1,300	420	290	340	115	53
12	425	275	220	185	105	71	1,940	8,520	250	190	115	53
13	425	240	210	185	105	71	1,940	7,360	215	190	115	76
14	380	245	210	185	89	71	1,680	4,400	225	160	115	53
15	335	235	210	185	83	89	2,180	2,040	225	119	115	28
16	270	209	200	185	83	89	1,800	1,700	200	107	115	59
17	250	209	200	185	83	235	1,220	1,040	205	119	115	53
18	210	200	210	200	60	288	1,220	1,040	210	119	105	47
19	225	200	250	200	64	335	950	475	205	109	100	59
20	225	200	335	200	75	480	950	1,220	210	109	105	76
21	440	205	265	205	75	495	3,920	1,220	225	138	105	76
22	425	205	265	195	70	455	3,850	910	225	94	105	47
23	405	205	260	195	70	455	2,840	655	225	94	105	59
24	380	205	260	185	64	950	1,580	480	225	77	105	59
25	315	195	260	195	71	1,760	2,260	480	255	113	115	53
26	331	185	210	195	66	1,510	905	480	240	113	115	59
27	331	195	210	185	71	1,260	905	270	325	113	115	63
28	360	195	220	185	71	795	585	200	210	105	105	63
29	335	195	220	190	---	470	470	255	210	107	109	130
30	330	195	220	185	---	470	330	220	235	115	100	94
31	397	---	200	167	---	470	---	220	---	115	100	---
TOTAL	17,557	6,718	6,891	5,947	2,674	11,588	36,496	36,100	6,710	4,612	3,600	1,893
MEAN	566	224	222	192	95.5	374	1,217	1,165	224	149	116	63.1
MAX	1,920	350	335	220	161	1,760	3,920	8,520	325	340	240	130
MIN	200	185	195	167	60	64	298	200	190	77	100	20
CFSM	2.16	0.85	0.85	0.73	0.36	1.43	4.64	4.44	0.85	0.57	0.44	0.24
IN.	2.49	0.95	0.98	0.84	0.38	1.65	5.18	5.13	0.95	0.65	0.51	0.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

	202	244	178	161	159	316	1,014	532	359	285	193	189
MEAN	202	244	178	161	159	316	1,014	532	359	285	193	189
MAX	566	800	391	295	321	888	2,388	1,180	1,172	1,068	432	894
(WY)	(2003)	(1992)	(1952)	(1969)	(1969)	(1945)	(2002)	(1954)	(1939)	(1992)	(1953)	(1941)
MIN	38.2	34.2	38.1	27.8	21.0	55.4	213	127	101	74.1	36.1	33.6
(WY)	(1949)	(1949)	(1949)	(1949)	(1949)	(1940)	(1987)	(1941)	(1987)	(1987)	(1987)	(1939)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL TOTAL	166,666		140,786			
ANNUAL MEAN	457		386		319	
HIGHEST ANNUAL MEAN					487	
LOWEST ANNUAL MEAN					85.7	
HIGHEST DAILY MEAN	8,840	Apr 16,17	8,520	May 12	9,880	Jul 3, 1992
LOWEST DAILY MEAN	100	Sep 18,19	20	Sep 4	7.2	Oct 24, 1948
ANNUAL SEVEN-DAY MINIMUM	109	Sep 13	49	Sep 4	7.7	Oct 29, 1948
ANNUAL RUNOFF (CFSM)	1.74		1.47		1.22	
ANNUAL RUNOFF (INCHES)	23.66		19.99		16.53	
10 PERCENT EXCEEDS	570		839		642	
50 PERCENT EXCEEDS	210		205		191	
90 PERCENT EXCEEDS	143		71		85	

04037500 CISCO BRANCH ONTONAGON RIVER AT CISCO LAKE OUTLET, MI

LOCATION.--Lat 46°15'12", long 89°27'05", in NE 1/4 sec.32, T.45 N., R.41 W., Gogebic County, Hydrologic Unit 04020102, on left bank 80 ft downstream from Cisco Lake Dam, 2.5 mi upstream from Langford Creek, 5.0 mi upstream from U.S. Highway 2, and 13 mi west of Watersmeet.

DRAINAGE AREA.--50.7 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1944 to current year.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,672.69 ft above NGVD of 1929. Prior to Oct. 1, 1968, nonrecording gage at same site and at datum 4.00 ft higher.

REMARKS.--Records good except for discharges below 3.0 ft<sup>3</sup>/s, which are poor (see page 11). Flow regulated by Cisco Lake (station 04037400). Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	2.4	34	7.1	33	31	102	14	63	0.66	75	0.28
2	66	2.2	34	7.1	33	32	91	14	40	0.67	22	0.26
3	66	2.1	34	7.1	34	33	79	14	7.9	0.78	22	0.26
4	86	2.1	34	7.1	35	33	68	14	2.1	0.80	21	0.24
5	141	19	34	7.1	35	45	69	32	1.6	0.82	17	0.24
6	164	54	34	23	34	57	69	48	1.1	0.85	12	0.24
7	169	75	33	52	35	32	67	61	0.95	0.80	11	0.24
8	167	76	33	62	34	11	67	68	0.90	0.75	11	0.24
9	162	59	34	61	34	11	54	e70	10	0.72	11	0.24
10	158	58	33	60	34	22	46	e70	58	0.79	10	0.27
11	97	58	37	59	35	57	46	137	91	0.80	6.4	0.24
12	62	49	41	58	36	73	48	232	90	0.77	0.58	0.26
13	61	27	41	36	35	58	49	239	46	0.76	0.44	0.28
14	63	9.4	41	9.0	35	32	77	235	13	8.2	0.44	0.30
15	58	2.6	40	3.0	35	20	136	230	13	20	0.41	14
16	58	2.6	40	2.8	34	21	169	224	6.7	20	0.36	36
17	30	2.6	39	2.6	26	22	172	218	1.6	19	0.34	65
18	12	2.6	40	2.6	15	22	171	213	1.4	18	0.34	62
19	12	2.6	41	2.6	15	23	169	206	1.3	18	0.30	29
20	13	25	41	6.3	15	24	179	201	1.3	18	16	9.6
21	13	54	41	12	12	52	180	203	1.0	13	25	9.7
22	30	64	41	12	7.1	105	178	197	0.71	6.2	5.0	9.3
23	56	64	40	13	7.2	119	177	190	0.72	0.90	0.49	4.9
24	78	62	40	13	7.6	92	174	181	0.62	0.75	0.37	0.30
25	88	51	40	13	8.0	59	168	176	3.4	8.6	0.30	0.25
26	85	42	36	13	9.4	46	140	169	3.1	21	0.33	0.24
27	84	37	26	26	20	33	118	163	2.3	19	0.30	0.24
28	57	33	15	44	29	59	75	110	0.90	19	5.3	0.24
29	8.3	33	15	43	---	97	38	66	0.69	19	4.5	0.24
30	2.9	33	11	42	---	95	26	66	0.66	45	0.42	24
31	2.6	---	7.0	38	---	109	---	64	---	103	0.36	---
TOTAL	2,216.8	1,004.2	1,050.0	744.4	722.3	1,525	3,202	4,125	464.95	386.62	279.98	268.60
MEAN	71.5	33.5	33.9	24.0	25.8	49.2	107	133	15.5	12.5	9.03	8.95
MAX	169	76	41	62	62	119	180	239	91	103	75	65
MIN	2.6	2.1	7.0	2.6	7.1	11	26	14	0.62	0.66	0.30	0.24
CFSM	1.41	0.66	0.67	0.47	0.51	0.97	2.11	2.62	0.31	0.25	0.18	0.18
IN.	1.63	0.74	0.77	0.55	0.53	1.12	2.35	3.03	0.34	0.28	0.21	0.20

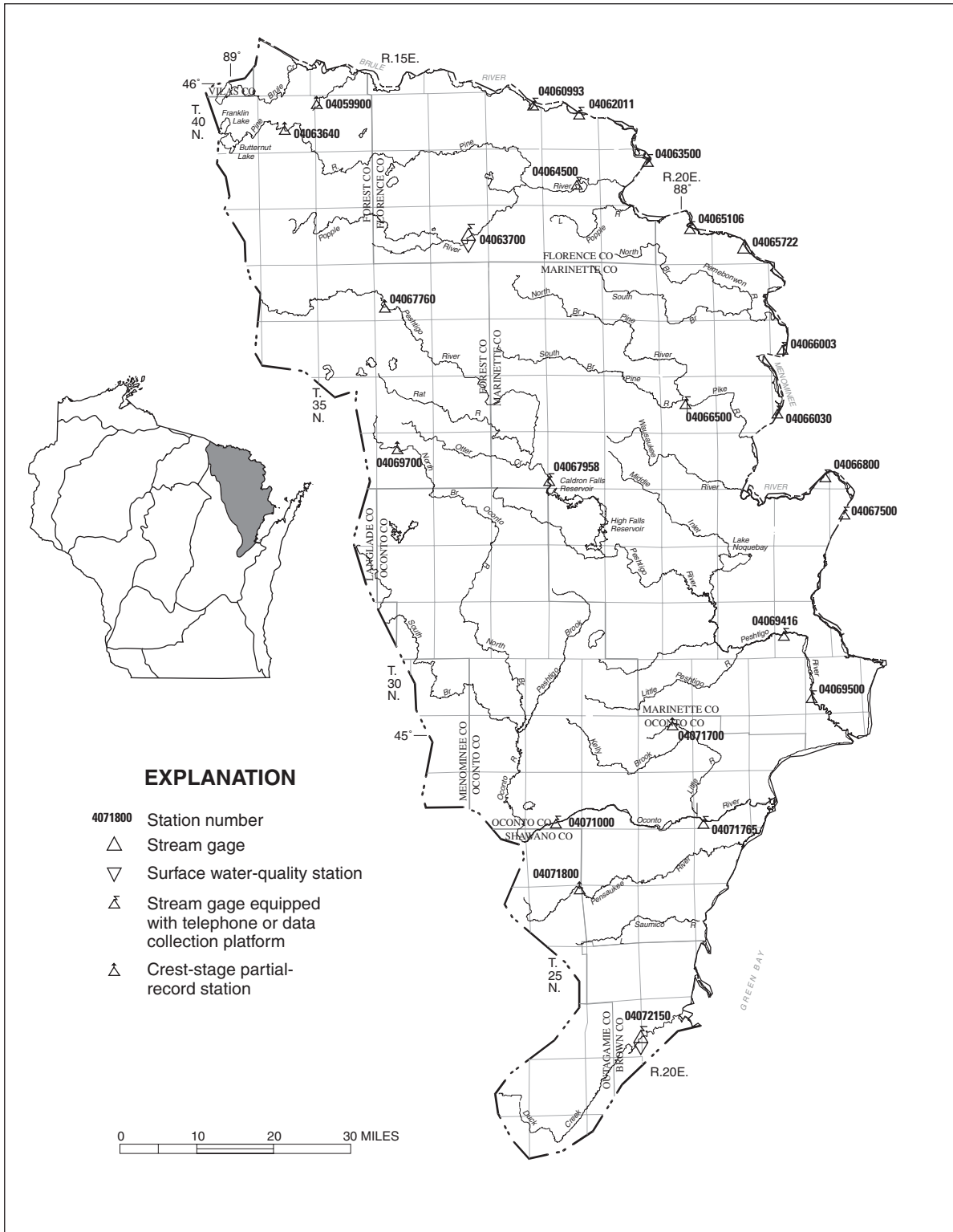
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
	66.9	151	(1986)	13.1	(1958)
	65.3	116	(1968)	14.5	(1945)
	47.0	84.1	(1961)	23.5	(1990)
	38.6	62.6	(1983)	23.1	(1959)
	34.9	81.0	(1945)	20.6	(1950)
	44.0	92.1	(1973)	24.1	(1956)
	63.6	156	(2002)	2.02	(1948)
	49.1	160	(1996)	0.17	(1977)
	44.6	123	(1953)	0.11	(1977)
	32.0	113	(1953)	0.25	(1977)
	25.1	99.7	(1978)	0.15	(1970)
	36.1	104	(1977)	0.23	(1976)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1945 - 2003
ANNUAL TOTAL	20,526.11	15,989.85	
ANNUAL MEAN	56.2	43.8	45.6
HIGHEST ANNUAL MEAN			65.9
LOWEST ANNUAL MEAN			25.2
HIGHEST DAILY MEAN	242	239	288
LOWEST DAILY MEAN	0.63	0.24	0.08
ANNUAL SEVEN-DAY MINIMUM	0.98	0.24	0.09
MAXIMUM PEAK FLOW		243	288
MAXIMUM PEAK STAGE		5.86	(a)6.10
ANNUAL RUNOFF (CFSM)	1.11	0.86	0.90
ANNUAL RUNOFF (INCHES)	15.06	11.73	12.22
10 PERCENT EXCEEDS	169	118	103
50 PERCENT EXCEEDS	40	30	36
90 PERCENT EXCEEDS	2.6	0.64	0.90

(a) Present datum  
(e) Estimated



## MENOMINEE-OCONTO-PESHTIGO BASIN



## STREAMS TRIBUTARY TO LAKE MICHIGAN

04062011 BRULE RIVER NEAR COMMONWEALTH, WI

LOCATION.--Lat 45°56'51" long 88°12'55", in NW ¼ sec.14, T.40 N., R.18 E., Wisconsin Meridian, Florence County, Hydrologic Unit 04030106, on right bank 900 ft downstream from Brule Island Dam, 1.5 mi upstream from confluence with Michigamme River, and 2.8 mi north of Commonwealth, WI.

DRAINAGE AREA.--1,020 mi<sup>2</sup>.

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

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,130 ft above NGVD of 1929, from topographic map.

REMARKS.--Records excellent (see page 11). Flow regulated by powerplant 900 ft upstream and by Lower Paint Dam 8.2 mi upstream. Records not adjusted for diversion to Michigamme River by Paint River Diversion Canal. Gage-height telemeter at station.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	940	644	437	455	467	479	774	871	770	460	482	485
2	834	645	452	527	475	484	785	822	692	458	499	482
3	689	591	472	460	485	462	700	822	697	455	612	465
4	895	569	489	460	516	459	685	814	674	488	827	445
5	1,010	638	560	466	498	462	555	808	611	506	705	501
6	1,030	618	548	555	503	463	725	868	655	449	521	488
7	1,580	576	498	501	517	457	785	972	707	476	582	458
8	1,940	574	533	534	517	459	680	921	692	416	551	480
9	1,920	614	482	529	497	482	709	864	773	461	528	478
10	1,820	682	490	517	508	482	737	926	877	454	528	434
11	1,250	717	569	449	495	463	1,030	1,040	982	489	483	455
12	1,070	701	580	467	518	454	1,460	2,340	874	455	481	490
13	1,040	632	563	435	500	452	1,220	4,580	800	496	508	584
14	980	666	498	507	495	482	1,140	4,310	726	454	515	681
15	834	594	584	432	498	475	1,420	2,620	664	443	485	689
16	668	643	526	499	502	522	1,520	2,020	622	446	477	647
17	564	590	492	445	509	899	1,400	1,940	588	484	452	496
18	656	540	567	457	484	974	1,270	1,820	535	414	473	485
19	681	612	617	481	509	868	1,240	1,590	521	451	473	512
20	669	650	606	496	502	747	1,490	1,220	598	437	472	491
21	696	550	594	463	509	787	2,720	963	621	471	489	496
22	695	552	564	455	477	850	3,240	842	551	523	490	526
23	691	552	498	453	475	882	2,920	877	528	479	491	570
24	622	649	501	457	502	920	2,180	781	524	444	476	552
25	656	547	539	455	499	909	2,090	773	522	445	466	555
26	731	483	514	452	490	734	2,210	719	526	468	501	495
27	728	535	496	472	484	690	1,810	740	530	467	566	540
28	733	533	503	465	482	685	1,350	719	534	470	486	543
29	740	575	521	431	---	619	977	702	531	471	496	520
30	579	619	525	486	---	586	895	722	513	468	493	518
31	668	---	534	505	---	647	---	816	---	469	490	---
TOTAL	28,609	18,091	16,352	14,766	13,913	19,334	40,717	40,822	19,438	14,367	16,098	15,561
MEAN	923	603	527	476	497	624	1,357	1,317	648	463	519	519
MAX	1,940	717	617	555	518	974	3,240	4,580	982	523	827	689
MIN	564	483	437	431	467	452	555	702	513	414	452	434

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

MEAN	443	407	368	347	354	444	1,165	889	511	468	394	386
MAX	923	603	545	476	497	634	3,128	2,757	818	887	680	569
(WY)	(2003)	(2003)	(2002)	(2003)	(2003)	(1998)	(2002)	(1996)	(2002)	(1999)	(2002)	(2002)
MIN	276	307	270	259	270	327	322	355	334	272	296	285
(WY)	(1990)	(1990)	(1990)	(1991)	(1991)	(2001)	(1990)	(1998)	(1992)	(1990)	(1990)	(1998)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1990 - 2003
ANNUAL TOTAL	317,873	258,068	
ANNUAL MEAN	871	707	515
HIGHEST ANNUAL MEAN			810
LOWEST ANNUAL MEAN			325
HIGHEST DAILY MEAN	10,500	Apr 17	10,500
LOWEST DAILY MEAN	357	Jan 18	182
ANNUAL SEVEN-DAY MINIMUM	410	Mar 3	202
MAXIMUM PEAK FLOW			5,030
MAXIMUM PEAK STAGE			11.34
10 PERCENT EXCEEDS	1,410		15.67
50 PERCENT EXCEEDS	569		736
90 PERCENT EXCEEDS	434		384
			285





## STREAMS TRIBUTARY TO LAKE MICHIGAN

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

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

DRAINAGE AREA.--139 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	128	56	41	22	e26	62	210	133	49	68	30
2	152	119	55	40	22	e27	71	191	124	46	89	28
3	144	112	51	39	23	e27	82	175	116	45	99	27
4	208	107	48	39	23	e27	62	162	108	44	115	27
5	302	104	47	39	22	e27	57	156	102	42	99	30
6	376	103	47	39	22	e27	54	201	98	40	79	32
7	395	100	46	40	21	e27	49	221	117	41	75	29
8	393	98	46	43	23	e27	45	222	156	43	70	27
9	369	98	45	44	22	e27	43	218	194	40	61	26
10	341	110	44	44	23	e27	70	227	221	39	55	26
11	309	140	44	45	23	e28	165	325	262	42	73	26
12	287	139	44	45	23	e29	261	423	257	43	67	27
13	270	130	45	45	24	e34	253	455	226	41	55	41
14	240	121	48	44	24	e34	266	460	189	37	47	62
15	209	113	51	44	24	e33	316	436	155	36	43	73
16	179	108	50	43	24	e33	e350	405	131	36	41	60
17	155	107	48	41	23	e33	383	367	117	36	37	49
18	139	92	48	41	e22	e37	390	326	108	35	35	42
19	134	90	54	40	e22	e62	401	287	97	34	33	38
20	134	86	57	39	e22	e160	469	277	87	33	36	36
21	130	84	57	38	e22	e280	506	272	78	43	40	35
22	128	82	54	37	e22	e310	510	246	71	44	37	47
23	128	79	50	37	e23	e280	487	220	66	41	33	63
24	127	77	47	34	e23	e240	462	191	64	38	32	59
25	127	77	45	32	e23	198	429	169	63	34	35	55
26	146	74	44	30	e23	144	393	153	59	33	35	51
27	162	69	43	29	e23	122	352	138	56	33	33	55
28	165	65	42	27	e25	79	312	129	54	32	32	57
29	156	62	42	25	---	76	275	126	54	31	34	54
30	149	61	42	24	---	85	234	123	52	32	33	52
31	138	---	42	23	---	71	---	133	---	39	31	---
TOTAL	6,422	2,935	1,482	1,171	638	2,637	7,809	7,644	3,615	1,202	1,652	1,264
MEAN	207	97.8	47.8	37.8	22.8	85.1	260	247	120	38.8	53.3	42.1
MAX	395	140	57	45	25	310	510	460	262	49	115	73
MIN	127	61	42	23	21	26	43	123	52	31	31	26
CFSM	1.49	0.70	0.34	0.27	0.16	0.61	1.87	1.77	0.87	0.28	0.38	0.30
IN.	1.72	0.79	0.40	0.31	0.17	0.71	2.09	2.05	0.97	0.32	0.44	0.34

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

	115	109	65.0	47.4	46.5	85.9	309	217	142	80.8	65.3	103
MAX	265	220	116	86.6	107	356	613	617	345	260	147	356
(WY)	(1972)	(1986)	(1992)	(1969)	(1984)	(1973)	(1979)	(1965)	(1993)	(1999)	(1978)	(1980)
MIN	25.0	30.9	23.9	24.6	22.8	30.5	54.6	52.0	21.2	17.5	23.1	16.4
(WY)	(1990)	(1977)	(1990)	(1977)	(2003)	(1964)	(1990)	(1998)	(1988)	(1988)	(1989)	(1989)

## 04063700 POPPLE RIVER NEAR FENCE, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	51,155		38,471		115	
ANNUAL MEAN	140		105		175	
HIGHEST ANNUAL MEAN					1973	
LOWEST ANNUAL MEAN					1988	
HIGHEST DAILY MEAN	1,500	Apr 19	510	Apr 22	1,610	Apr 25, 1979
LOWEST DAILY MEAN	(a)26	Feb 12,16-18	21	Feb 7	10	Aug 12, 1989
ANNUAL SEVEN-DAY MINIMUM	(a)26	Feb 12	22	Feb 1	12	(b)Jul 3, 1988
MAXIMUM PEAK FLOW			(c)512	Apr 21	(d)1,640	Apr 25, 1979
MAXIMUM PEAK STAGE			(a)3.23	Apr 16	4.81	Apr 19, 2002
INSTANTANEOUS LOW FLOW			21	Feb 5	(f)5.9	Oct 28, 1976
ANNUAL RUNOFF (CFSM)	1.01		0.76		0.83	
ANNUAL RUNOFF (INCHES)	13.69		10.30		11.29	
10 PERCENT EXCEEDS	348		273		251	
50 PERCENT EXCEEDS	65		55		70	
90 PERCENT EXCEEDS	32		27		33	

(a) Ice affected

(b) Also occurred Sept. 20, 1989

(c) Gage height, 2.85 ft

(d) Gage height, 4.52 ft

(e) Estimated due to ice effect or missing record

(f) Result of temporary storage from beaver dam

## STREAMS TRIBUTARY TO LAKE MICHIGAN

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

## WATER-QUALITY RECORDS

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

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 2002 to current year.

SPECIFIC CONDUCTANCE: June 2002 to current year.

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

REMARKS.--Records represent water temperature at sensor within 0.5°C. Records for water temperature were faulty Jan. 12 to May 29, June 24 to July 1, and Aug. 1-19. Records for specific conductance were faulty Jan. 12 to May 29, June 22 to July 1, and Aug. 1-19.

## EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum, 27.0°C, July 5 and Aug. 19 (partial day), 2003; minimum, 0.0°C, many days in 2003.

SPECIFIC CONDUCTANCE: Maximum, 244 mS/cm, July 11, 2002; minimum, 86 mS/cm, Oct. 10 and 11, 2002.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 27.0°C, July 5 and Aug. 19 (partial day), 2003; minimum, 0.0°C, many days.

SPECIFIC CONDUCTANCE: Maximum, 292 mS/cm, Jan. 11; minimum, 86 mS/cm, Oct. 10 and 11.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	16.5	13.0	14.5	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
2	15.0	12.5	14.0	2.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
3	13.0	11.0	12.0	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
4	12.5	12.0	12.0	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
5	12.0	10.0	11.0	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
6	11.0	9.5	10.5	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
7	9.5	8.0	9.0	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
8	9.0	7.5	8.5	3.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
9	9.5	8.0	8.5	4.0	2.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0
10	9.0	7.5	8.0	4.5	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
11	10.5	8.5	9.5	4.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
12	10.0	9.0	10.0	2.0	1.0	1.5	0.0	0.0	0.0	---	---	---
13	9.0	6.5	7.5	1.5	0.5	1.5	0.0	0.0	0.0	---	---	---
14	7.0	5.0	6.0	1.5	0.5	1.0	0.0	0.0	0.0	---	---	---
15	7.0	5.5	6.0	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
16	6.0	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
17	5.0	3.5	4.0	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
18	4.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
19	4.5	3.0	3.5	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
20	4.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
21	3.0	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
22	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
23	3.0	1.0	2.0	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
24	4.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
25	4.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
26	4.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
27	4.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
28	4.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
29	4.0	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
30	3.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
31	3.5	1.5	2.5	---	---	---	0.0	0.0	0.0	---	---	---
MONTH	16.5	1.0	6.4	4.5	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0

04063700 POPPLE RIVER NEAR FENCE, WI--Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	16.5	13.0	15.0
31	---	---	---	---	---	---	---	---	---	15.5	11.0	13.0
MONTH	---	---	---	---	---	---	---	---	---	16.5	11.0	14.0
	JUNE			JULY			AUGUST			SEPTEMBER		
1	16.0	11.5	13.5	---	---	---	---	---	---	20.0	15.5	18.0
2	17.0	13.0	15.0	24.5	19.0	21.5	---	---	---	21.0	16.5	19.0
3	19.0	13.5	16.0	25.5	21.0	23.0	---	---	---	20.0	17.5	18.5
4	19.5	14.0	17.0	25.5	21.0	23.5	---	---	---	19.5	15.5	17.5
5	19.0	15.0	17.0	27.0	20.5	23.5	---	---	---	19.5	14.0	17.0
6	17.5	15.0	16.5	25.5	21.0	23.0	---	---	---	20.5	15.5	18.0
7	15.5	14.0	14.5	26.5	20.5	23.0	---	---	---	20.5	17.0	19.0
8	14.0	12.5	13.0	24.0	20.0	22.0	---	---	---	22.5	18.0	20.5
9	15.5	12.0	13.5	22.5	18.5	20.5	---	---	---	23.0	19.5	21.5
10	15.0	12.5	13.5	21.0	18.0	19.5	---	---	---	23.0	19.5	21.5
11	15.5	11.5	13.5	19.0	16.5	17.5	---	---	---	22.5	19.0	21.0
12	18.0	13.5	15.5	23.0	16.0	19.0	---	---	---	21.5	19.0	19.5
13	19.0	15.0	17.0	23.0	18.0	21.0	---	---	---	19.0	18.0	18.5
14	21.0	16.5	18.5	22.5	19.0	21.0	---	---	---	18.5	15.5	17.0
15	21.5	17.0	19.5	22.5	20.0	21.0	---	---	---	17.0	14.0	15.5
16	23.0	17.5	20.5	24.5	17.5	21.0	---	---	---	17.5	12.5	15.0
17	23.0	18.5	21.0	25.0	20.5	23.0	---	---	---	19.0	14.0	16.5
18	23.0	19.0	21.0	24.0	18.5	21.5	---	---	---	20.0	15.5	18.0
19	22.5	17.0	20.0	24.5	19.0	21.5	---	---	---	18.5	14.5	16.5
20	23.0	16.0	19.5	25.0	20.5	23.0	26.0	23.0	24.0	16.5	12.0	14.5
21	24.0	17.0	20.5	23.5	20.0	21.0	26.0	22.5	24.0	16.0	12.0	14.5
22	25.0	18.0	21.5	20.5	17.5	19.0	24.5	20.0	22.5	15.0	13.5	14.0
23	25.0	19.0	22.0	22.5	16.5	19.5	22.5	18.5	20.5	14.5	11.5	13.0
24	---	---	---	23.0	17.5	20.5	24.0	18.5	21.0	13.0	11.5	12.0
25	---	---	---	23.0	18.5	21.0	25.0	21.0	23.0	12.5	9.0	11.0
26	---	---	---	24.5	21.0	22.5	25.5	21.0	23.5	11.0	9.5	10.5
27	---	---	---	25.0	22.0	23.5	23.5	19.5	21.5	10.5	9.5	10.0
28	---	---	---	24.5	19.0	22.0	21.0	17.5	19.0	10.5	9.0	9.5
29	---	---	---	24.0	20.0	22.0	20.0	17.5	19.0	9.5	7.0	8.0
30	---	---	---	23.0	20.0	21.5	19.5	15.0	17.5	8.5	6.5	7.5
31	---	---	---	22.0	19.5	21.0	19.5	15.0	17.5	---	---	---
MONTH	25.0	11.5	17.4	27.0	16.0	21.4	26.0	15.0	21.1	23.0	6.5	15.8

STREAMS TRIBUTARY TO LAKE MICHIGAN

04063700 POPPLE RIVER NEAR FENCE, WI--Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	153	139	144	133	129	130	204	198	202	255	248	252
2	146	109	127	135	131	133	208	203	206	262	254	258
3	157	129	146	143	135	138	215	208	212	285	260	268
4	155	87	136	145	141	143	218	214	217	272	263	270
5	130	109	116	148	145	146	221	218	220	271	260	268
6	119	96	105	150	147	149	223	220	222	265	258	262
7	105	91	95	153	149	151	224	220	222	261	242	258
8	102	88	92	155	152	154	226	218	224	258	243	254
9	99	88	91	157	153	155	232	217	225	253	235	249
10	92	86	88	154	145	150	233	226	231	259	235	249
11	94	86	89	145	135	140	235	224	233	292	259	270
12	93	88	90	145	132	135	233	224	230	---	---	---
13	95	91	92	148	130	132	230	218	227	---	---	---
14	96	93	94	143	130	133	226	217	223	---	---	---
15	112	95	99	140	132	135	224	214	222	---	---	---
16	108	100	104	165	120	139	229	219	226	---	---	---
17	112	104	108	234	115	150	231	222	229	---	---	---
18	120	110	114	194	151	158	232	215	227	---	---	---
19	126	117	121	172	154	160	221	212	216	---	---	---
20	126	122	123	179	162	168	218	207	214	---	---	---
21	128	122	124	174	162	166	219	212	217	---	---	---
22	126	121	123	174	163	168	223	212	220	---	---	---
23	133	124	127	174	166	169	232	214	225	---	---	---
24	135	127	130	178	168	172	238	225	234	---	---	---
25	135	127	129	183	172	177	240	229	236	---	---	---
26	138	127	130	230	178	184	246	237	241	---	---	---
27	132	120	125	198	187	190	250	235	245	---	---	---
28	122	117	119	195	191	193	249	241	246	---	---	---
29	125	117	120	196	190	193	250	239	248	---	---	---
30	128	123	125	198	190	193	248	244	247	---	---	---
31	130	126	128	---	---	---	250	240	246	---	---	---
MONTH	157	86	115	234	115	157	250	198	227	292	235	260
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
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11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	160	131	137
31	---	---	---	---	---	---	---	---	---	150	134	138
MONTH	---	---	---	---	---	---	---	---	---	160	131	138

04063700 POPPLE RIVER NEAR FENCE, WI--Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	JUNE			JULY			AUGUST			SEPTEMBER		
										MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	145	132	135	---	---	---	---	---	---	243	240	242									
2	141	133	135	208	204	206	---	---	---	245	241	243									
3	146	136	140	212	208	210	---	---	---	247	244	246									
4	156	142	147	215	212	213	---	---	---	248	245	246									
5	160	148	152	220	215	217	---	---	---	248	246	247									
6	164	156	159	221	217	220	---	---	---	250	238	246									
7	161	150	156	223	220	222	---	---	---	250	246	248									
8	150	132	141	224	222	223	---	---	---	253	248	251									
9	134	117	125	226	223	225	---	---	---	254	250	253									
10	137	106	119	225	223	225	---	---	---	254	249	252									
11	129	105	113	226	221	225	---	---	---	252	248	251									
12	138	102	115	228	226	227	---	---	---	251	235	246									
13	122	99	107	231	227	229	---	---	---	235	232	234									
14	136	108	123	233	230	231	---	---	---	232	218	222									
15	136	114	121	234	230	232	---	---	---	221	218	219									
16	132	120	125	235	231	233	---	---	---	228	219	223									
17	141	128	135	238	235	237	---	---	---	234	228	232									
18	161	139	149	238	233	237	---	---	---	238	233	235									
19	162	149	153	240	237	239	---	---	---	239	236	238									
20	177	156	165	240	231	238	241	232	236	240	237	239									
21	201	167	175	231	229	230	238	230	235	241	238	240									
22	---	---	---	232	229	231	236	233	235	240	228	233									
23	---	---	---	237	231	234	239	235	238	230	220	225									
24	---	---	---	237	233	236	242	236	240	223	220	222									
25	---	---	---	239	237	238	243	238	241	225	222	224									
26	---	---	---	240	238	240	243	239	242	226	221	224									
27	---	---	---	242	240	241	245	242	244	224	220	222									
28	---	---	---	244	240	242	245	235	242	222	219	221									
29	---	---	---	245	238	242	243	206	240	223	219	222									
30	---	---	---	242	232	241	240	237	239	225	223	224									
31	---	---	---	243	227	238	243	237	241	---	---	---									
MONTH	201	99	138	245	204	230	245	206	239	254	218	236									

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfiltered, uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat fltr inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat fltr incrm. titr., mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
OCT 15...	1015	209	10	721	10.6	7.9	95	6.0	37	45	1.40	3.5	1.0
NOV 12...	1010	141	10	725	12.2	7.7	134	1.0	62	76	1.81	4.7	0.59
DEC 03...	1030	50	10	761	12.6	7.8	210	-0.1	108	132	1.87	6.8	0.41
JAN 08...	1115	41	20	708	10.2	7.6	253	-0.1	122	149	1.35	7.9	0.22
FEB 05...	1215	24	20	723	7.0	7.4	291	-0.2	133	162	1.93	8.5	0.33
MAR 12...	1230	29	20	722	9.8	7.4	271	-0.2	126	153	1.52	8.2	0.29
APR 09...	0940	42	10	734	12.8	7.9	208	0.1	93	113	--	--	0.40
MAY 05...	1000	151	10	713	9.7	7.6	106	9.5	47	57	1.46	4.9	0.75
JUN 04...	0945	108	10	724	8.6	7.2	139	15.0	63	77	1.15	4.6	0.52
JUL 01...	1000	49	10	726	7.5	7.7	204	18.5	96	118	1.58	5.4	0.47
AUG 05...	0940	102	10	722	7.5	7.6	178	18.0	81	99	1.25	6.4	0.66
SEP 03...	1010	27	10	722	7.8	7.6	251	17.5	111	135	1.97	6.2	0.35

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04063700 POPPLE RIVER NEAR FENCE, WI--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Partic- ulate nitro- gen, susp, water, mg/L (49570)	Phos- phorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor- ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Suspnd. sedi- ment, sieve diametr percent <.063mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)
OCT 15...	<0.04	E.04	E.006	<0.02	0.03	0.028	0.3	<0.1	0.3	38.9	33	2
NOV 12...	<0.04	0.13	E.005	<0.02	0.07	0.018	0.5	<0.1	0.5	20.0	50	2
DEC 03...	<0.04	0.14	E.004	<0.02	0.03	0.011	0.1	<0.1	0.1	10.4	50	2
JAN 08...	0.04	0.17	<0.008	<0.02	0.03	0.010	0.2	<0.1	0.2	4.4	80	3
FEB 05...	0.11	0.21	<0.008	<0.02	0.03	0.011	0.3	<0.1	0.3	2.4	100	2
MAR 12...	0.14	0.23	<0.008	<0.02	0.03	0.013	0.3	<0.1	0.3	2.1	100	1
APR 09...	0.11	0.22	E.005	<0.02	<0.02	0.014	0.1	<0.1	0.1	5.4	83	22
MAY 05...	<0.04	E.03	<0.008	<0.02	0.07	0.023	0.4	<0.1	0.4	15.0	62	5
JUN 04...	<0.04	E.06	<0.008	<0.02	0.04	0.021	0.3	<0.1	0.3	14.4	--	29
JUL 01...	<0.04	0.11	<0.008	<0.02	0.04	0.027	0.4	<0.1	0.4	9.1	--	28
AUG 05...	<0.04	<0.06	<0.008	<0.02	0.08	0.026	0.5	<0.1	0.5	14.6	--	34
SEP 03...	<0.04	<0.06	<0.008	<0.02	0.05	0.017	0.4	<0.1	0.4	5.4	--	21



04064500 PINE RIVER BELOW PINE RIVER POWERPLANT NEAR FLORENCE, WI

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

DRAINAGE AREA.--533 mi<sup>2</sup>.

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

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	817	451	e210	e230	e140	e150	358	630	510	232	245	148
2	830	448	e190	e220	e130	e150	382	584	488	204	280	154
3	726	410	e180	e200	e160	e180	345	550	447	239	381	150
4	891	378	e200	e200	e130	e170	307	504	389	245	522	124
5	1,170	410	e240	e170	e160	e150	257	534	389	198	489	136
6	1,310	375	e240	e200	e170	e150	355	660	356	207	388	144
7	1,410	380	e260	e200	e180	e160	398	704	420	170	331	157
8	1,350	375	e240	e190	e170	e180	318	702	538	187	317	118
9	1,260	388	e220	e210	e180	e170	340	692	693	203	302	134
10	1,100	454	e230	e230	e170	e170	407	728	808	168	282	137
11	1,000	532	e240	e220	e180	e160	665	921	972	201	316	114
12	879	525	e250	e190	e170	e170	921	1,470	920	204	292	133
13	855	494	e260	e190	e170	e150	878	1,540	783	199	253	199
14	738	453	e260	e160	e180	e170	875	1,560	684	169	199	348
15	689	416	e270	e180	e180	e170	1,010	1,370	587	194	234	370
16	615	370	e240	e140	e160	e190	1,350	1,210	485	163	167	354
17	552	283	e230	e150	e160	e310	1,430	1,080	433	176	198	261
18	501	312	e250	e140	e170	e500	1,340	952	387	171	174	252
19	502	373	e280	e130	e160	e560	1,350	874	376	166	154	203
20	507	361	e260	e140	e160	e560	1,630	855	318	147	173	182
21	507	346	e290	e140	e160	e560	1,730	862	314	209	204	183
22	487	372	e260	e120	e170	563	1,650	807	279	203	190	216
23	513	326	e260	e92	e170	521	1,500	748	276	164	174	255
24	479	319	e250	e99	e180	582	1,330	650	267	205	168	259
25	499	e250	e230	e97	e180	569	1,220	577	257	197	163	225
26	554	e220	e230	e92	e180	467	1,060	535	272	155	178	237
27	613	e260	e220	e120	e180	432	968	489	235	162	200	253
28	593	e250	e220	e110	e140	346	868	455	241	161	154	248
29	552	e280	e230	e120	---	318	804	467	234	167	190	297
30	535	e270	e190	e110	---	362	683	491	218	146	164	251
31	527	---	e230	e130	---	356	---	524	---	168	145	---
TOTAL	23,561	11,081	7,360	4,920	4,640	9,646	26,729	24,725	13,576	5,780	7,627	6,242
MEAN	760	369	237	159	166	311	891	798	453	186	246	208
MAX	1,410	532	290	230	180	582	1,730	1,560	972	245	522	370
MIN	479	220	180	92	130	150	257	455	218	146	145	114
CFSM	1.43	0.69	0.45	0.30	0.31	0.58	1.67	1.50	0.85	0.35	0.46	0.39
IN.	1.64	0.77	0.51	0.34	0.32	0.67	1.87	1.73	0.95	0.40	0.53	0.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2003, BY WATER YEAR (WY)

MEAN	376	385	259	216	197	315	954	799	543	381	301	360
MAX	1,017	694	433	473	351	1,188	1,882	2,127	1,424	1,000	760	1,115
(WY)	(1929)	(1946)	(2002)	(1939)	(1969)	(1973)	(1967)	(1965)	(1939)	(1999)	(1938)	(1928)
MIN	100	185	139	120	80.7	74.5	325	209	190	117	80.3	108
(WY)	(1949)	(1964)	(1964)	(1964)	(1964)	(1964)	(1931)	(1998)	(1948)	(1934)	(1933)	(1998)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1924 - 2003	
ANNUAL TOTAL	186,565		145,887			
ANNUAL MEAN	511		400		424	
HIGHEST ANNUAL MEAN					658	
LOWEST ANNUAL MEAN					210	
HIGHEST DAILY MEAN	4,440	Apr 19	1,730	Apr 21	4,440	Apr 19, 2002
LOWEST DAILY MEAN	(a)180	(b)Feb 7,10	(a)92	Jan 23,26	0.00	(c)Jan 20, 1924
ANNUAL SEVEN-DAY MINIMUM	(a)191	Feb 4	(a)104	Jan 22	41	Aug 4, 1936
MAXIMUM PEAK FLOW			2,070	May 13	(d)4,850	Apr 19, 2002
MAXIMUM PEAK STAGE			6.11	May 13	9.37	Apr 19, 2002
ANNUAL RUNOFF (CFSM)	0.96		0.75		0.80	
ANNUAL RUNOFF (INCHES)	13.02		10.18		10.81	
10 PERCENT EXCEEDS	1,110		870		878	
50 PERCENT EXCEEDS	271		260		297	
90 PERCENT EXCEEDS	200		150		150	

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

## STREAMS TRIBUTARY TO LAKE MICHIGAN

## 04065106 MENOMINEE RIVER AT NIAGARA, WI

LOCATION.--Lat 45°46'04", long 87°58'50", in NE ¼ NE ¼ sec.15, T.38 N., R.20 E., Marinette County, Hydrologic Unit 04030108, on right bank 0.7 mi downstream from Little Quinnesec Falls Dam, at Niagara.

DRAINAGE AREA.--2,470 mi<sup>2</sup>.

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,910	2,820	e1,600	e1,400	e1,500	e1,600	2,170	4,070	2,550	1,390	1,420	1,100
2	3,460	2,350	e1,500	e1,500	e1,400	e1,800	2,040	3,640	2,930	1,160	1,500	1,020
3	3,330	1,890	e1,100	e1,400	e1,500	e1,800	1,830	3,190	2,840	1,280	1,930	918
4	3,440	1,920	e1,400	e1,400	e1,600	e1,700	1,760	3,250	2,420	1,240	2,850	944
5	3,640	1,830	e1,500	e1,400	e1,600	e1,700	1,700	3,120	3,150	1,190	2,310	1,010
6	4,300	2,290	e1,500	e1,500	e1,700	e1,700	2,110	3,340	3,140	1,290	2,210	1,020
7	5,700	2,260	e1,500	e1,400	e1,600	e1,700	2,020	3,420	3,140	1,250	1,820	1,430
8	6,200	2,340	e1,500	e1,500	e1,700	e1,700	1,760	3,390	3,260	1,190	1,650	1,030
9	5,700	2,050	e1,400	e1,500	e1,700	e1,700	1,680	3,350	3,130	1,190	1,280	968
10	5,480	1,990	e1,300	e1,600	e1,600	e1,700	1,750	3,370	3,270	1,230	1,440	864
11	4,690	2,470	e1,400	e1,600	e1,700	e1,500	2,040	4,030	3,720	1,150	1,400	826
12	4,210	2,510	e1,400	e1,600	e1,700	e1,500	3,210	5,790	3,300	1,130	1,360	841
13	4,460	2,570	e1,500	e1,500	e1,800	e1,600	3,220	9,230	3,140	1,080	1,340	1,120
14	4,080	2,540	e1,600	e1,500	e1,700	e1,600	2,680	9,730	2,680	1,070	1,290	1,610
15	3,560	2,540	e1,600	e1,500	e1,700	e1,700	2,960	7,790	2,270	1,250	1,500	1,630
16	3,410	2,560	e1,500	e1,400	e1,600	e1,700	4,040	6,480	2,220	1,150	1,530	1,690
17	3,520	2,420	e1,500	e1,500	e1,700	e1,900	4,840	6,050	1,940	1,120	1,230	1,500
18	3,450	2,200	e1,600	e1,500	e1,700	e2,600	5,310	5,270	2,020	1,120	1,140	1,280
19	3,400	2,210	e1,700	e1,500	e1,700	e2,600	5,420	5,460	1,860	1,120	1,120	1,290
20	3,010	2,160	e1,700	e1,500	e1,700	2,390	5,810	5,020	1,660	1,110	1,130	1,180
21	3,120	2,140	e1,600	e1,500	e1,600	2,350	6,800	4,320	1,630	1,110	1,130	1,100
22	3,040	2,280	e1,700	e1,500	e1,600	2,290	7,640	4,070	1,610	1,250	1,070	1,130
23	2,570	2,080	e1,700	e1,500	e1,700	2,290	7,370	3,860	1,510	1,180	1,000	1,190
24	2,610	1,860	e1,600	e1,500	e1,600	2,350	6,430	3,540	1,560	1,160	1,070	1,360
25	2,620	1,780	e1,700	e1,400	e1,700	2,340	5,680	3,160	1,610	1,280	1,140	1,220
26	2,570	1,840	e1,700	e1,400	e1,700	2,150	6,180	3,030	1,450	1,190	1,130	1,140
27	2,870	1,830	e1,600	e1,400	e1,700	2,210	5,440	2,910	1,500	1,190	1,200	1,210
28	3,400	1,710	e1,500	e1,500	e1,700	2,070	5,100	2,800	1,450	1,060	1,280	1,220
29	3,490	e1,600	e1,400	e1,500	---	2,200	4,050	2,850	1,490	1,140	1,280	1,350
30	3,270	e1,700	e1,400	e1,500	---	2,260	4,280	2,340	1,510	1,100	1,220	1,210
31	2,860	---	e1,300	e1,500	---	2,280	---	2,620	---	1,100	1,160	---
TOTAL	114,370	64,740	47,000	45,900	46,200	60,980	117,320	134,490	69,960	36,470	44,130	35,401
MEAN	3,689	2,158	1,516	1,481	1,650	1,967	3,911	4,338	2,332	1,176	1,424	1,180
MAX	6,200	2,820	1,700	1,600	1,800	2,600	7,640	9,730	3,720	1,390	2,850	1,690
MIN	2,570	1,600	1,100	1,400	1,400	1,500	1,680	2,340	1,450	1,060	1,000	826

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

MEAN	1,824	1,732	1,716	1,711	1,856	2,072	3,880	3,690	2,512	2,047	1,662	1,603
MAX	3,689	2,531	2,458	2,258	2,286	2,800	7,476	7,555	4,184	3,547	2,290	2,225
(WY)	(2003)	(1993)	(1993)	(1993)	(1997)	(2000)	(2002)	(1996)	(1993)	(1999)	(1996)	(1994)
MIN	1,151	1,245	1,161	1,369	1,391	1,553	1,953	1,175	1,587	1,176	1,080	1,180
(WY)	(2001)	(2001)	(2001)	(1995)	(1995)	(2001)	(1994)	(1998)	(1998)	(2003)	(1998)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1993 - 2003

ANNUAL TOTAL	1,022,980	816,961		
ANNUAL MEAN	2,803	2,238		2,192
HIGHEST ANNUAL MEAN				3,135
LOWEST ANNUAL MEAN				1,707
HIGHEST DAILY MEAN	18,400	Apr 19	9,730	May 14
LOWEST DAILY MEAN	(a)1,100	Dec 3	826	Sep 11
ANNUAL SEVEN-DAY MINIMUM	1,390	Aug 27	997	Sep 6
MAXIMUM PEAK FLOW			10,800	May 13
MAXIMUM PEAK STAGE			12.62	May 13
10 PERCENT EXCEEDS	4,890		4,030	3,470
50 PERCENT EXCEEDS	1,950		1,700	1,800
90 PERCENT EXCEEDS	1,580		1,140	1,200

(a) Ice affected

(e) Estimated due to ice effect or missing record

04065722 MENOMINEE RIVER NEAR VULCAN, MI

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

DRAINAGE AREA.--2,900 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 820 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good (see page 11). Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft, on Michigamme River, and by smaller reservoirs upstream from station. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,210	3,510	2,040	1,720	1,790	1,930	3,000	4,960	3,210	1,480	1,410	1,150
2	4,270	3,010	1,910	1,770	1,720	2,050	2,740	4,560	3,610	1,280	1,540	1,030
3	4,140	2,420	1,380	1,690	1,740	2,180	2,470	3,870	3,610	1,230	1,940	928
4	4,310	2,340	1,670	1,630	1,890	1,980	2,300	3,980	2,940	1,290	3,280	918
5	4,810	2,270	1,790	1,660	1,910	2,050	2,130	3,750	3,660	1,190	2,650	966
6	5,580	2,750	1,780	1,810	2,020	2,050	2,510	4,020	3,680	1,330	2,620	1,030
7	7,230	2,710	1,760	1,720	1,890	2,040	2,670	4,220	3,680	1,310	2,190	1,430
8	7,770	2,680	1,860	1,770	1,970	1,950	2,190	4,190	3,850	1,230	1,950	1,080
9	7,300	2,520	1,810	1,730	2,070	2,100	2,090	4,200	3,830	1,400	1,460	985
10	7,040	2,510	1,580	1,930	1,980	1,990	2,260	4,020	4,020	1,250	1,580	960
11	5,950	3,040	1,740	1,920	2,040	1,820	2,620	5,000	4,890	1,210	1,520	927
12	5,340	3,130	1,730	1,910	2,110	1,800	4,240	6,650	4,410	1,170	1,440	884
13	5,520	3,250	1,740	1,900	2,150	1,860	4,460	9,960	4,250	1,160	1,510	990
14	5,160	3,240	1,910	1,780	2,060	1,920	4,010	11,100	3,630	1,140	1,470	1,860
15	4,350	3,010	1,970	1,850	2,070	1,920	4,180	9,280	3,080	1,270	1,590	1,780
16	4,120	3,100	1,910	1,650	2,000	1,940	5,280	7,780	3,040	1,390	1,610	1,960
17	4,180	2,860	1,800	1,810	2,070	2,220	6,530	7,170	2,440	971	1,290	1,750
18	4,140	2,590	1,950	1,820	2,120	2,980	6,870	6,300	2,520	1,220	1,150	1,420
19	3,980	2,660	2,090	1,760	2,020	3,150	6,880	6,410	2,290	1,110	1,180	1,330
20	3,650	2,590	2,170	1,790	2,110	3,050	7,370	6,000	2,050	1,150	1,140	1,260
21	3,600	2,480	1,950	1,910	2,020	3,080	8,660	5,400	1,930	1,190	1,110	1,140
22	3,870	2,670	2,050	1,760	1,870	3,380	9,740	5,030	1,850	1,180	1,110	1,280
23	3,170	2,530	2,030	1,860	2,070	3,520	9,450	4,660	1,810	1,300	976	1,270
24	3,250	2,110	1,920	1,790	1,960	3,680	8,350	4,460	1,700	1,200	1,090	1,510
25	3,280	2,100	1,990	1,680	2,060	3,650	7,140	3,840	1,840	1,310	1,060	1,370
26	3,250	2,130	2,090	1,750	2,030	3,320	7,480	3,650	1,750	1,260	1,190	1,250
27	3,510	2,110	2,010	1,760	2,000	3,150	6,760	3,460	1,750	1,220	1,200	1,270
28	4,140	2,090	1,790	1,740	2,030	3,000	6,300	3,550	1,700	1,040	1,360	1,460
29	4,200	1,880	1,710	1,790	---	3,170	5,080	3,350	1,700	1,190	1,310	1,430
30	4,010	1,970	1,740	1,730	---	3,220	4,980	2,850	1,710	1,050	1,270	1,340
31	3,450	---	1,620	1,760	---	3,110	---	3,320	---	1,120	1,190	---
TOTAL	141,780	78,260	57,490	55,150	55,770	79,260	150,740	160,990	86,430	37,841	47,386	37,958
MEAN	4,574	2,609	1,855	1,779	1,992	2,557	5,025	5,193	2,881	1,221	1,529	1,265
MAX	7,770	3,510	2,170	1,930	2,150	3,680	9,740	11,100	4,890	1,480	3,280	1,960
MIN	3,170	1,880	1,380	1,630	1,720	1,800	2,090	2,850	1,700	971	976	884

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2003, BY WATER YEAR (WY)

MEAN	2,050	2,182	2,091	1,976	2,036	2,509	4,624	3,950	2,858	2,160	1,713	1,799
MAX	4,574	4,412	3,008	2,533	2,548	3,701	9,292	8,850	4,832	4,196	2,598	2,456
(WY)	(2003)	(1989)	(1989)	(1993)	(1997)	(2000)	(2002)	(1996)	(1993)	(1999)	(1996)	(1994)
MIN	1,081	1,382	1,376	1,489	1,442	1,855	1,356	1,344	1,062	1,100	1,184	1,223
(WY)	(1990)	(1990)	(2001)	(1995)	(1995)	(2001)	(1990)	(1998)	(1988)	(1988)	(1998)	(1989)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1988 - 2003

ANNUAL TOTAL	1,222,430	989,055	2,532
ANNUAL MEAN	3,349	2,710	3,781
HIGHEST ANNUAL MEAN			1,996
LOWEST ANNUAL MEAN			1,864
HIGHEST DAILY MEAN	22,800	Apr 19	22,800
LOWEST DAILY MEAN	1,300	Aug 31	846
ANNUAL SEVEN-DAY MINIMUM	1,480	Aug 27	932
MAXIMUM PEAK FLOW			23,000
MAXIMUM PEAK STAGE			17.72
INSTANTANEOUS LOW FLOW			603
10 PERCENT EXCEEDS	6,250	4,970	4,180
50 PERCENT EXCEEDS	2,260	2,030	2,050
90 PERCENT EXCEEDS	1,790	1,200	1,320

## 04066003 MENOMINEE RIVER BELOW PEMENE CREEK NEAR PEMBINE, WI

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

DRAINAGE AREA.--3,140 mi<sup>2</sup>.

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,000	3,760	e2,100	e1,900	e1,900	e2,200	e3,300	5,470	3,500	1,680	1,300	1,280
2	4,310	3,390	e2,000	e1,900	e1,900	e2,300	e3,000	4,950	3,770	1,540	1,710	1,240
3	4,230	2,660	e1,600	e1,800	e1,900	e2,300	e2,700	4,380	3,980	1,300	1,890	1,140
4	4,520	2,590	e1,700	e1,800	e2,100	e2,200	e2,500	4,170	3,200	1,360	3,360	1,040
5	5,390	2,500	e1,900	e1,900	e2,100	e2,200	e2,400	4,180	3,660	1,380	2,900	1,070
6	5,780	2,920	e1,900	e1,900	e2,200	e2,200	2,610	4,410	3,890	1,340	2,980	1,160
7	7,540	2,930	e1,900	e1,900	e2,100	e2,200	2,960	4,620	3,890	1,460	2,410	1,490
8	8,320	2,820	e1,900	e1,900	e2,100	e2,200	2,430	4,630	4,010	1,390	2,220	1,250
9	7,940	2,740	e1,800	e2,000	e2,200	e2,200	2,250	4,660	4,160	1,520	1,890	1,120
10	7,650	2,800	e1,800	e2,100	e2,200	e2,200	2,460	4,440	4,200	1,330	1,670	1,120
11	6,480	3,270	e1,900	e2,100	e2,200	e2,200	2,870	5,420	5,150	1,390	1,740	1,090
12	5,630	3,400	e1,900	e2,000	e2,300	e2,200	4,330	6,810	4,860	1,260	1,740	1,070
13	5,900	3,450	e1,900	e2,000	e2,300	e2,100	4,970	10,100	4,630	1,300	1,680	1,070
14	5,540	3,530	e2,000	e1,900	e2,200	e2,000	4,640	11,900	4,110	1,250	1,710	1,940
15	4,650	3,230	e2,100	e1,900	e2,200	e2,000	4,430	10,400	3,210	1,260	1,650	1,940
16	4,330	3,280	e2,000	e1,800	e2,200	e2,100	5,730	8,650	3,150	1,480	1,790	2,220
17	4,440	3,080	e1,900	e2,000	e2,200	e2,500	7,270	7,740	2,680	1,280	1,740	1,980
18	4,220	2,800	e2,100	e2,000	e2,300	e3,000	7,440	6,840	2,590	1,180	1,320	1,770
19	4,240	2,850	e2,200	e1,900	e2,200	e3,600	7,570	6,720	2,510	1,210	1,210	1,510
20	3,980	2,780	e2,300	e1,900	e2,300	e3,500	8,120	6,600	2,250	1,290	1,290	1,510
21	3,710	2,670	e2,200	e2,000	e2,200	e3,500	9,360	6,060	2,070	1,270	1,300	1,410
22	4,230	2,770	e2,200	e2,000	e2,000	e3,800	10,600	5,420	2,020	1,320	1,200	1,450
23	3,460	2,790	e2,100	e2,000	e2,200	e3,900	10,300	5,240	2,020	1,410	1,170	1,500
24	3,470	2,290	e2,000	e2,000	e2,200	e4,100	9,010	4,990	1,750	1,270	1,210	1,640
25	3,660	2,250	e2,100	e1,900	e2,200	e4,100	7,770	4,190	2,030	1,310	1,210	1,740
26	3,590	2,220	e2,200	e1,900	e2,200	e3,800	7,950	3,970	1,860	1,430	1,330	1,560
27	3,640	2,250	e2,200	e1,900	e2,200	e3,400	7,420	3,820	1,780	1,320	1,330	1,610
28	4,420	2,250	e2,100	e1,900	e2,200	e3,400	6,660	3,910	1,850	1,330	1,410	1,810
29	4,480	2,060	e1,900	e1,900	---	e3,500	5,590	3,420	1,790	1,220	1,430	1,620
30	4,390	e2,000	e2,000	e1,900	---	e3,500	5,240	3,480	1,840	1,280	1,450	1,660
31	3,700	---	e1,700	e1,900	---	e3,400	---	3,490	---	1,240	1,330	---
TOTAL	150,840	84,330	61,600	59,900	60,500	87,800	163,880	175,080	92,410	41,600	52,570	44,010
MEAN	4,866	2,811	1,987	1,932	2,161	2,832	5,463	5,648	3,080	1,342	1,696	1,467
MAX	8,320	3,760	2,300	2,100	2,300	4,100	10,600	11,900	5,150	1,680	3,360	2,220
MIN	3,000	2,000	1,600	1,800	1,900	2,000	2,250	3,420	1,750	1,180	1,170	1,040

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

MEAN	2,471	2,573	2,272	2,111	2,104	2,628	5,600	4,788	3,351	2,514	2,075	2,265
MAX	5,660	5,766	3,939	3,035	3,810	7,461	10,000	12,100	6,118	6,523	3,505	5,335
(WY)	(1986)	(1986)	(1986)	(1986)	(1984)	(1973)	(1967)	(1960)	(1953)	(1953)	(1952)	(1968)
MIN	1,028	1,043	1,167	1,080	1,201	1,461	1,432	1,341	1,152	1,201	1,003	1,009
(WY)	(1977)	(1977)	(1977)	(1977)	(1964)	(1964)	(1990)	(1987)	(1988)	(1988)	(1977)	(1976)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1950 - 2003
ANNUAL TOTAL	1,286,590	1,074,520	
ANNUAL MEAN	3,525	2,944	2,896
HIGHEST ANNUAL MEAN			4,318
LOWEST ANNUAL MEAN			1,778
HIGHEST DAILY MEAN	22,100	Apr 19	11,900
LOWEST DAILY MEAN	1,280	Sep 1	1,040
ANNUAL SEVEN-DAY MINIMUM	1,460	Aug 27	1,170
MAXIMUM PEAK FLOW			(a)12,400
MAXIMUM PEAK STAGE			(c)14.49
10 PERCENT EXCEEDS	6,580		5,400
50 PERCENT EXCEEDS	2,380		2,200
90 PERCENT EXCEEDS	1,880		1,320

(a) Gage height, 12.80 ft

(b) Gage height, 13.90 ft, site and datum then in use

(c) Ice affected

(e) Estimated due to ice effect or missing record

## 04066030 MENOMINEE RIVER AT WHITE RAPIDS DAM NEAR BANAT, MI

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

DRAINAGE AREA.--3,190 mi<sup>2</sup>.

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,130	3,630	2,030	1,700	1,940	2,230	3,450	5,470	3,590	1,790	1,280	1,230
2	4,430	3,410	2,020	1,890	1,920	2,330	3,320	4,890	3,410	1,550	1,630	1,240
3	4,460	2,740	1,630	1,900	2,010	2,370	3,130	4,190	4,090	1,510	2,060	1,170
4	4,550	2,520	1,770	1,870	1,990	2,310	2,710	4,020	3,210	1,310	3,360	1,140
5	5,340	2,820	1,990	1,880	e1,900	2,340	2,340	4,240	3,330	1,310	3,130	980
6	6,190	2,840	1,950	1,880	e1,600	2,240	2,870	4,360	3,810	1,400	2,840	954
7	7,230	3,110	1,930	1,920	e2,200	2,250	2,920	4,550	3,740	1,470	2,600	1,430
8	8,320	2,840	1,910	1,930	e2,000	2,300	2,860	4,630	3,980	1,420	2,520	1,460
9	7,780	2,830	1,880	2,000	e2,100	2,290	2,400	4,480	4,190	1,360	1,730	1,070
10	7,410	2,860	1,860	1,970	e2,100	2,300	2,280	4,590	4,240	1,590	1,690	1,080
11	6,590	3,350	1,920	1,820	e2,100	2,310	3,180	5,220	5,230	1,390	1,910	1,060
12	5,770	3,650	1,910	1,880	e2,100	2,210	4,450	6,900	5,130	1,370	1,860	1,050
13	5,730	3,320	1,880	2,050	e2,100	2,090	5,360	9,110	4,510	1,320	1,720	1,090
14	5,460	3,490	2,060	1,790	e2,200	2,060	4,890	11,500	4,550	1,320	1,690	1,910
15	4,730	3,400	2,150	1,940	e2,200	1,960	4,320	9,880	3,390	1,330	1,780	2,280
16	4,490	3,310	2,320	1,930	e2,200	2,210	6,110	8,100	3,230	1,460	1,820	2,200
17	4,320	3,290	2,110	1,740	e2,100	2,560	7,610	7,310	2,750	1,480	1,800	2,180
18	4,230	2,920	2,050	1,750	2,090	3,060	7,360	6,740	2,300	1,310	1,470	1,620
19	4,210	2,790	2,340	1,750	2,370	3,870	7,720	6,040	2,850	1,200	1,200	1,600
20	4,170	2,900	2,320	1,910	2,160	3,660	8,050	6,350	2,270	1,200	1,280	1,420
21	3,690	2,780	2,390	1,890	2,400	3,570	9,380	5,730	2,030	1,300	1,310	1,350
22	4,120	2,780	2,390	1,880	2,210	4,080	10,300	5,170	2,140	1,360	1,310	1,600
23	3,960	2,770	2,090	1,530	e2,000	4,480	10,100	5,180	1,870	1,590	1,250	1,500
24	3,200	2,520	1,960	1,910	e2,300	4,530	9,020	4,720	2,090	1,410	1,170	1,590
25	3,740	2,500	2,240	1,960	e2,200	4,480	7,710	3,970	1,960	1,380	1,170	1,960
26	3,770	2,220	2,330	1,580	e2,200	4,120	7,730	3,850	2,140	1,290	1,220	1,460
27	3,790	2,300	2,260	e1,500	e2,200	3,380	7,300	3,450	1,820	1,510	1,510	1,590
28	4,320	2,240	2,080	e1,500	2,160	3,820	6,530	3,940	1,780	1,330	1,420	1,910
29	4,640	2,200	1,970	e1,600	---	3,830	5,800	3,400	2,030	1,310	1,360	1,800
30	4,470	2,140	1,990	e1,800	---	3,900	5,200	3,300	1,830	1,370	1,500	1,780
31	3,950	---	1,710	1,890	---	3,780	---	3,090	---	1,310	1,390	---
TOTAL	152,190	86,470	63,440	56,540	59,050	92,920	166,400	168,370	93,490	43,250	53,980	44,704
MEAN	4,909	2,882	2,046	1,824	2,109	2,997	5,547	5,431	3,116	1,395	1,741	1,490
MAX	8,320	3,650	2,390	2,050	2,400	4,530	10,300	11,500	5,230	1,790	3,360	2,280
MIN	3,130	2,140	1,630	1,500	1,600	1,960	2,280	3,090	1,780	1,200	1,170	954

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

MEAN	2,197	1,948	1,870	1,912	2,195	2,884	5,464	4,471	2,994	2,525	2,022	1,770
MAX	4,909	2,882	2,619	2,068	2,345	4,118	9,373	6,120	3,850	4,584	2,674	2,237
(WY)	(2003)	(2003)	(2002)	(2002)	(1999)	(2000)	(2002)	(2002)	(2002)	(1999)	(2002)	(2000)
MIN	1,417	1,659	1,493	1,774	2,061	2,065	3,147	2,156	2,087	1,395	1,436	1,410
(WY)	(2001)	(1999)	(2001)	(1999)	(2002)	(2001)	(2000)	(2000)	(2000)	(2003)	(2001)	(2001)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1999 - 2003

ANNUAL TOTAL	1,306,080	1,080,804		
ANNUAL MEAN	3,578	2,961		2,688
HIGHEST ANNUAL MEAN				3,244
LOWEST ANNUAL MEAN				2,253
HIGHEST DAILY MEAN	20,800	Apr 19	11,500	May 14
LOWEST DAILY MEAN	1,450	Sep 2	954	Sep 6
ANNUAL SEVEN-DAY MINIMUM	1,600	Aug 27	1,150	Sep 5
MAXIMUM PEAK FLOW			11,900	May 14
MAXIMUM PEAK STAGE			11.81	May 14
10 PERCENT EXCEEDS	6,610		5,270	4,470
50 PERCENT EXCEEDS	2,510		2,220	2,100
90 PERCENT EXCEEDS	1,910		1,360	1,370

(e) Estimated due to ice effect or missing record

## STREAMS TRIBUTARY TO LAKE MICHIGAN

## 04066500 PIKE RIVER AT AMBERG, MI

LOCATION.--Lat 45°30'00", long 88°00'00", in SE ¼ SE ¼, sec.16, T. 35 N., R.20 E., Meridian 4, Marinette County, MI, Hydrologic Unit 04030108, on right bank 35 ft upstream from bridge on County Trunk Highway V, 0.4 mi southwest of Amberg.

DRAINAGE AREA.--255 mi<sup>2</sup>.

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

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

GAGE.--Water-stage recorder. Elevation of gage is 860 ft above NGVD of 1929, from topographic map. Oct. 7, 1946 to Sept. 30, 1970, water-stage recorder at site 0.5 mi downstream at elevation 865 ft above mean NGVD of 1929 (from survey level line along railroad). See WSP 1727 for history of changes prior to Oct. 7, 1946.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	247	253	e170	e110	e92	e110	e270	314	249	129	129	93
2	264	240	e170	e110	e92	e100	e310	301	228	125	141	94
3	248	228	e160	e110	e92	e94	e300	285	213	122	197	90
4	357	220	e150	e110	e90	e92	e240	272	201	119	269	87
5	498	219	e140	e120	e88	e92	e210	274	191	115	243	87
6	595	222	e130	e120	e86	e94	e220	342	184	111	204	85
7	627	221	e130	e120	e86	e96	e210	391	213	110	226	85
8	596	217	e130	e130	e86	e98	e210	384	277	108	222	85
9	520	217	e120	e130	e86	e96	209	365	329	106	189	85
10	440	239	e130	e120	e86	e96	244	382	364	110	168	85
11	375	286	e130	e110	e86	e96	392	453	483	117	263	84
12	330	286	e140	e100	e88	e96	514	591	486	116	275	85
13	331	261	e140	e100	e86	e98	517	624	391	111	217	110
14	316	243	e140	e94	e88	e100	486	545	304	107	172	180
15	290	232	e140	e88	e88	e120	501	445	255	106	151	233
16	265	220	e140	e88	e88	e160	686	367	225	102	141	217
17	241	e190	e140	e88	e90	e200	848	330	203	100	129	170
18	241	e190	e150	e86	e96	e260	875	311	187	97	120	140
19	249	e200	e160	e84	e100	e330	725	297	171	95	114	126
20	254	e190	e160	e80	e110	e410	756	324	165	96	113	118
21	249	190	e150	e78	e110	e540	831	347	158	131	113	114
22	257	190	e140	e78	e110	e560	786	325	150	136	107	138
23	276	188	e130	e78	e100	e500	636	293	146	121	102	174
24	277	187	e130	e78	e96	e460	516	270	145	110	104	186
25	281	180	e120	e78	e90	e360	446	251	147	103	109	210
26	306	181	e120	e76	e90	e290	391	236	144	107	105	203
27	339	e180	e120	e78	e98	e260	367	226	133	112	99	214
28	338	e180	e120	e80	e110	e270	350	219	129	106	97	219
29	314	e170	e120	e84	---	e320	342	217	132	103	101	205
30	288	e170	e120	e88	---	e290	323	218	133	107	98	200
31	269	---	e110	e92	---	e270	---	243	---	110	95	---
TOTAL	10,478	6,390	4,250	2,986	2,608	6,958	13,711	10,442	6,736	3,448	4,813	4,202
MEAN	338	213	137	96.3	93.1	224	457	337	225	111	155	140
MAX	627	286	170	130	110	560	875	624	486	136	275	233
MIN	241	170	110	76	86	92	209	217	129	95	95	84
CFSM	1.33	0.84	0.54	0.38	0.37	0.88	1.79	1.32	0.88	0.44	0.61	0.55
IN.	1.53	0.93	0.62	0.44	0.38	1.02	2.00	1.52	0.98	0.50	0.70	0.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

MEAN	179	206	158	132	123	211	462	340	268	180	155	171
MAX	454	422	296	215	194	503	1,016	820	699	525	365	452
(WY)	(1942)	(1920)	(1929)	(1939)	(1942)	(1921)	(1922)	(1960)	(1916)	(1914)	(1914)	(1941)
MIN	83.2	119	93.5	82.7	78.1	98.8	188	181	111	90.2	80.3	89.1
(WY)	(1949)	(1954)	(1918)	(1964)	(1948)	(1964)	(1931)	(1925)	(1948)	(1948)	(1934)	(1948)

STREAMS TRIBUTARY TO LAKE MICHIGAN

04066500 PIKE RIVER AT AMBERG, MI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1914 - 2003	
ANNUAL TOTAL	88,734		77,022			
ANNUAL MEAN	243		211		215	
HIGHEST ANNUAL MEAN					344	
LOWEST ANNUAL MEAN					133	
HIGHEST DAILY MEAN	1,000	Apr 14	875	Apr 18	2,620	Apr 11, 1922
LOWEST DAILY MEAN	(a)90	Jan 18	(a)76	Jan 26	26	Dec 27, 1925
ANNUAL SEVEN-DAY MINIMUM	(a)97	(b)Jan 14	(a)78	Jan 21	(a)53	Mar 5, 1928
MAXIMUM PEAK FLOW			923		(c)2,800	
MAXIMUM PEAK STAGE			5.79		(d)(f)7.80	
INSTANTANEOUS LOW FLOW			(a)		26	
ANNUAL RUNOFF (CFSM)	0.95		0.83		0.84	
ANNUAL RUNOFF (INCHES)	12.94		11.24		11.44	
10 PERCENT EXCEEDS	514		387		396	
50 PERCENT EXCEEDS	176		165		160	
90 PERCENT EXCEEDS	100		88		100	

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

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04066800 MENOMINEE RIVER AT KOSS, MI

LOCATION.--Lat 45°23'14", long 87°42'07", in NE 1/4, sec.36, T. 35 N., R.28 W., Michigan Meridian, Menominee County, MI, Hydrologic Unit 04030108, on left upstream bank 30 ft from river and 18 ft west of County Trunk JJ (Koss) bridge, 0.3 mi southeast of Koss and 3.4 mi upstream of Grand Rapids Dam.

DRAINAGE AREA.--3,700 mi<sup>2</sup>.

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

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,660	4,240	e1,600	e1,900	e1,900	e2,100	4,320	6,470	3,940	1,810	1,530	1,410
2	4,260	3,960	e2,000	e2,100	e1,900	e2,200	4,310	6,090	3,820	1,710	1,600	1,410
3	4,850	3,470	e1,900	e2,200	e1,900	e2,200	4,070	5,360	4,130	1,570	1,870	1,320
4	4,990	2,590	e1,800	e2,000	e1,900	e2,200	4,070	4,750	4,050	1,550	2,620	1,300
5	5,850	2,830	e2,100	e2,000	e1,900	e2,200	3,600	4,880	3,350	1,420	4,200	1,330
6	6,700	2,780	e2,100	e2,000	e1,800	e2,200	3,420	5,060	4,000	1,460	3,170	1,070
7	7,740	3,470	e2,100	e2,000	e1,800	e2,100	3,590	5,490	4,260	1,600	3,350	1,210
8	8,800	3,060	e2,100	e2,000	e2,100	e2,200	3,570	5,650	4,360	1,590	2,610	1,770
9	9,410	2,930	e2,000	e2,000	e2,000	e2,100	3,310	5,450	4,730	1,510	2,300	1,300
10	8,900	2,970	e2,100	e1,900	e2,100	e2,100	2,870	5,640	4,870	1,600	1,810	1,340
11	8,320	3,370	e2,100	e1,800	e2,100	e2,100	3,220	5,730	5,690	1,570	1,900	1,310
12	7,160	4,310	e2,000	e1,800	e2,100	e2,200	4,620	7,160	6,420	1,580	2,180	1,340
13	6,480	4,160	e1,900	e1,900	e2,000	e2,100	6,170	9,150	5,760	1,540	2,020	1,350
14	6,590	3,730	e1,900	e2,000	e2,100	e2,000	6,290	11,600	5,290	1,500	1,800	1,540
15	5,790	3,990	e2,100	e1,800	e2,200	e2,000	5,500	12,800	4,640	1,460	1,680	2,710
16	5,100	3,800	e2,200	e1,900	e2,200	e2,000	6,620	11,200	3,710	1,520	1,710	2,180
17	4,980	3,820	e2,400	e1,800	e2,100	e2,400	9,030	9,260	3,310	1,520	1,700	2,370
18	4,830	3,710	e2,200	e1,600	e2,100	e2,900	9,840	8,670	2,350	1,540	1,680	1,980
19	4,710	3,110	e2,400	e1,600	e2,000	e3,600	9,960	7,250	2,810	1,360	1,370	1,650
20	4,710	3,320	e2,600	e1,800	e2,100	e4,200	10,200	7,380	2,500	1,340	1,370	1,620
21	4,450	3,090	e2,600	e1,900	e2,200	e4,500	11,000	6,930	2,120	1,220	1,300	1,460
22	4,440	3,130	e2,700	e1,900	e2,200	e4,700	12,200	6,390	2,020	1,480	1,370	1,540
23	4,790	3,120	e2,500	e1,700	e1,900	e5,000	12,900	5,970	1,930	1,580	1,390	1,690
24	4,110	2,930	e2,100	e1,700	e2,000	e5,400	12,300	5,700	1,980	1,630	1,290	1,620
25	3,980	2,820	e2,100	e1,900	e2,200	e5,400	10,800	5,040	1,780	1,520	1,280	1,770
26	4,430	2,670	e2,300	e1,800	e2,100	e5,400	9,260	4,340	2,070	1,490	1,420	1,910
27	4,470	e2,500	e2,500	e1,400	e2,100	e5,000	9,150	4,050	1,960	1,490	1,540	1,620
28	4,660	e2,600	e2,300	e1,600	e2,100	e5,000	8,280	4,010	1,880	1,540	1,650	1,850
29	5,250	e2,300	e2,100	e1,600	---	e5,200	7,600	4,170	1,840	1,480	1,530	2,030
30	5,220	e2,300	e2,100	e1,700	---	e5,200	6,310	3,700	1,970	1,490	1,560	1,690
31	4,850	---	e2,000	e1,900	---	e4,800	---	3,500	---	1,550	1,590	---
TOTAL	173,480	97,080	66,900	57,200	57,100	102,700	208,380	198,840	103,540	47,220	58,390	48,690
MEAN	5,596	3,236	2,158	1,845	2,039	3,313	6,946	6,414	3,451	1,523	1,884	1,623
MAX	9,410	4,310	2,700	2,200	2,200	5,400	12,900	12,800	6,420	1,810	4,200	2,710
MIN	2,660	2,300	1,600	1,400	1,800	2,000	2,870	3,500	1,780	1,220	1,280	1,070

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2003, BY WATER YEAR (WY)

	2002	2003	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	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
MEAN	2,567	2,802	2,198	1,985	1,892	2,725	6,638	5,712	3,862	2,743	2,154	2,405																																																																																	
MAX	6,178	5,597	3,588	3,174	3,176	7,973	13,650	13,180	10,780	6,159	3,800	5,538																																																																																	
(WY)	(1929)	(1917)	(1919)	(1969)	(1969)	(1973)	(1916)	(1960)	(1916)	(1953)	(1972)	(1928)																																																																																	
MIN	1,131	1,170	1,166	989	864	1,199	2,479	2,220	1,708	1,111	731	1,013																																																																																	
(WY)	(1977)	(1977)	(1931)	(1926)	(1926)	(1934)	(1964)	(1977)	(1977)	(1934)	(1934)	(1933)																																																																																	

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1913 - 2003	
ANNUAL TOTAL	1,460,590		1,219,520			
ANNUAL MEAN	4,002		3,341		3,145	
HIGHEST ANNUAL MEAN					5,262	
LOWEST ANNUAL MEAN					1,642	
HIGHEST DAILY MEAN	23,000		12,900		33,000	
LOWEST DAILY MEAN	(a)1,600		1,070		162	
ANNUAL SEVEN-DAY MINIMUM	1,760		1,290		402	
MAXIMUM PEAK FLOW			(b)13,100		(c)Apr 23	
MAXIMUM PEAK STAGE			14.42		May 15	
10 PERCENT EXCEEDS	8,060		6,340		5,930	
50 PERCENT EXCEEDS	2,750		2,200		2,330	
90 PERCENT EXCEEDS	1,950		1,520		1,390	

(a) Ice affected

(b) Gage height, 14.41 ft

(c) Also occurred May 15

(e) Estimated due to ice effect or missing record



04067500 MENOMINEE RIVER NEAR MC ALLISTER, WI

LOCATION.--Lat 45°19'33", long 87°39'48", in SW ¼ SE ¼ sec.17, T.33 N., R.23 E., Marinette County, Hydrologic Unit 04030108, on right bank 85 ft downstream from bridge on County Highway JJ, 2.9 mi downstream from Grand Rapids Dam, 2.6 mi east of McAllister, 1.9 mi downstream from Little Cedar River, and at mile 22.6.

DRAINAGE AREA.--3,930 mi<sup>2</sup>.

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

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,840	4,300	e1,700	2,000	e2,000	e2,200	5,060	6,560	3,900	1,980	1,650	1,440
2	3,940	4,100	e2,100	e2,100	e2,000	e2,300	4,580	6,260	3,950	1,930	1,670	1,350
3	4,810	3,740	e2,000	e2,300	e2,000	e2,300	4,260	5,570	4,060	1,710	2,020	1,380
4	5,040	3,050	e1,900	e2,000	e2,000	e2,300	4,090	5,020	4,220	1,640	2,530	1,270
5	5,780	3,120	e2,300	e2,000	e2,000	e2,300	3,030	5,020	3,490	1,550	4,050	1,240
6	6,720	3,160	e2,300	e2,000	e2,000	e2,300	3,450	5,330	3,920	1,440	3,220	1,150
7	7,760	3,590	e2,300	e2,000	e1,900	e2,200	3,600	5,790	4,220	1,620	3,290	1,040
8	8,670	3,400	e2,200	e2,000	e2,200	e2,300	3,570	5,930	4,320	1,610	2,770	1,790
9	9,280	3,250	e2,100	e2,000	e2,100	e2,300	3,250	5,710	4,790	1,520	2,560	1,250
10	8,900	3,300	e2,200	e2,000	e2,200	e2,200	3,010	5,870	4,950	1,620	2,060	1,220
11	8,380	3,660	e2,200	e1,900	e2,200	e2,300	3,550	5,890	5,810	1,650	2,090	1,200
12	7,330	4,340	e2,200	e2,000	e2,200	e2,300	4,980	7,230	6,640	1,590	2,360	1,200
13	6,600	4,260	e2,100	e2,100	e2,200	e2,200	6,460	8,910	6,100	1,520	2,200	1,300
14	6,670	3,960	e2,100	e2,100	e2,300	e2,100	6,780	11,000	5,560	1,490	2,060	1,640
15	6,000	4,050	e2,400	e1,900	e2,300	e2,100	6,020	12,300	5,000	1,440	1,970	2,890
16	5,230	3,940	e2,500	e1,900	e2,300	e2,100	6,970	10,900	4,080	1,500	1,970	2,450
17	5,080	3,720	e2,600	e1,900	e2,200	e2,600	9,340	9,080	3,690	1,560	1,950	2,580
18	4,910	3,720	e2,300	e1,800	e2,200	e3,000	10,200	8,440	2,860	1,550	1,900	2,280
19	4,800	3,190	e2,500	e1,800	e2,200	e3,600	10,200	7,270	3,040	1,370	1,480	1,840
20	4,750	3,270	e2,700	e1,900	e2,300	e4,500	10,600	7,230	2,890	1,340	1,430	1,740
21	4,560	3,160	e2,700	e2,000	e2,400	e4,600	11,300	6,910	2,450	1,460	1,500	1,590
22	4,470	3,180	e2,700	e2,000	e2,400	e4,800	12,400	6,430	2,290	1,430	1,460	1,630
23	4,940	3,160	e2,600	e1,800	e2,100	e5,400	12,900	6,000	2,300	1,540	1,430	1,830
24	4,360	3,020	e2,200	e1,700	e2,200	e5,800	12,300	5,780	2,220	1,700	1,440	1,740
25	4,130	2,860	e2,300	e2,000	e2,400	e5,800	10,800	5,220	2,110	1,530	1,300	1,900
26	4,550	2,670	e2,500	e2,000	e2,200	e5,800	9,240	4,430	2,260	e1,600	1,360	2,140
27	4,620	2,450	2,670	e1,600	e2,200	e5,200	9,140	4,210	2,180	e1,600	1,430	1,790
28	4,730	2,820	2,440	e1,700	e2,200	e4,900	8,310	4,060	1,990	e1,600	1,630	1,950
29	5,270	2,460	2,320	e1,700	---	5,520	7,660	4,370	1,960	1,440	1,510	2,300
30	5,360	2,420	2,210	e1,800	---	5,600	6,510	3,770	2,200	1,470	1,530	2,030
31	5,020	---	2,140	e2,000	---	5,410	---	3,680	---	1,620	1,650	---
TOTAL	175,500	101,320	71,480	60,000	60,900	108,330	213,560	200,170	109,450	48,620	61,470	51,150
MEAN	5,661	3,377	2,306	1,935	2,175	3,495	7,119	6,457	3,648	1,568	1,983	1,705
MAX	9,280	4,340	2,700	2,300	2,400	5,800	12,900	12,300	6,640	1,980	4,050	2,890
MIN	2,840	2,420	1,700	1,600	1,900	2,100	3,010	3,680	1,960	1,340	1,300	1,040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)

MEAN	2,922	3,139	2,554	2,364	2,397	3,098	6,595	5,308	3,892	3,108	2,353	2,590
MAX	6,755	7,332	4,561	3,777	4,710	5,687	12,800	15,930	6,958	7,127	4,056	5,952
(WY)	(1986)	(1986)	(1986)	(1983)	(1984)	(1983)	(1951)	(1960)	(1993)	(1951)	(1952)	(1959)
MIN	1,195	1,753	1,532	1,621	1,245	1,897	1,869	1,636	1,296	1,374	1,312	1,390
(WY)	(1949)	(1990)	(1990)	(1949)	(1948)	(1956)	(1990)	(1998)	(1988)	(1988)	(1998)	(1989)

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04067500 MENOMINEE RIVER NEAR MC ALLISTER, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1945 - 2003	
ANNUAL TOTAL	1,525,440		1,261,950			
ANNUAL MEAN	4,179		3,457		3,369	
HIGHEST ANNUAL MEAN					5,496	
LOWEST ANNUAL MEAN					2,118	
HIGHEST DAILY MEAN	23,300	Apr 20	12,900	Apr 23	31,800	May 9, 1960
LOWEST DAILY MEAN	(a)1,700	Dec 1	1,040	Sep 7	810	Oct 26, 1948
ANNUAL SEVEN-DAY MINIMUM	1,880	Aug 28	1,260	Sep 6	952	Oct 24, 1948
MAXIMUM PEAK FLOW			13,100	Apr 23	32,500	May 9, 1960
MAXIMUM PEAK STAGE			15.02	Apr 23	(b)20.00	May 9, 1960
INSTANTANEOUS LOW FLOW					(c)538	Oct 6, 1946
10 PERCENT EXCEEDS	8,380		6,530		5,940	
50 PERCENT EXCEEDS	2,920		2,320		2,580	
90 PERCENT EXCEEDS	2,080		1,540		1,630	

(a) Ice affected

(b) From graph based on gage readings

(c) Observed

(e) Estimated due to ice effect or missing record

04067958 PESHTIGO RIVER NEAR WABENO, WI

LOCATION.--Lat 45°23'16", long 88°18'18", in NW ¼ NW ¼ sec.31, T.34 N., R.18 E., Marinette County, Hydrologic Unit 04030105, on left upstream bank 50 ft from river's edge and 12 ft north of County Trunk C, 12.2 mi west of Athelstane and 17.7 mi east of Wabeno.

DRAINAGE AREA.--447 mi<sup>2</sup>.

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	478	462	e260	e210	e170	e180	e400	607	470	240	261	178
2	494	429	e240	e220	e160	e180	e410	565	448	232	318	174
3	481	406	e230	e200	e160	e180	e400	529	418	228	363	170
4	607	392	e250	e190	e170	e180	e400	500	392	221	427	168
5	823	380	e230	e220	e170	e170	e390	499	372	216	448	165
6	952	380	e230	e220	e170	e170	e400	585	363	209	438	164
7	1,070	374	e230	e230	e170	e170	e400	648	405	212	425	161
8	1,080	378	e230	e240	e170	e180	e380	689	487	203	385	177
9	1,050	389	e220	e240	e180	e170	e380	687	614	196	346	174
10	971	420	e230	e250	e180	e170	e390	703	725	204	305	168
11	868	443	e230	e200	e180	e170	558	840	845	214	315	162
12	756	466	e250	e190	e170	e180	760	1,130	829	217	301	167
13	681	456	e260	e180	e170	e180	836	1,260	763	216	295	226
14	616	424	e270	e180	e170	e180	860	1,260	671	207	267	334
15	571	397	e270	e160	e170	e190	925	1,190	569	201	243	413
16	517	372	e260	e160	e170	e220	1,240	1,060	481	194	226	389
17	478	344	e240	e160	e170	e280	1,480	938	419	193	215	337
18	452	e330	e290	e150	e180	e400	1,500	799	377	191	205	286
19	453	e370	e310	e150	e170	e560	1,440	711	343	188	197	250
20	455	e370	e320	e140	e180	e700	1,510	715	320	187	196	229
21	463	e340	e300	e130	e190	e680	1,560	721	302	228	198	217
22	475	e320	e280	e130	e190	e680	1,480	708	284	228	192	251
23	476	e310	e260	e130	e180	e660	1,380	656	272	220	189	279
24	461	e300	e250	e130	e180	e640	1,230	600	276	211	192	321
25	457	e290	e260	e130	e180	e620	1,070	548	273	200	195	359
26	492	e300	e250	e130	e180	e600	944	508	265	253	198	357
27	548	e310	e240	e130	e180	e560	835	474	256	296	195	368
28	555	e300	e240	e130	e180	e490	750	449	248	266	189	355
29	537	e290	e230	e140	---	e450	688	439	250	234	189	341
30	509	e280	e240	e140	---	e430	643	436	245	217	183	324
31	507	---	e230	e150	---	e400	---	460	---	219	182	---
TOTAL	19,333	11,022	7,830	5,360	4,890	11,020	25,639	21,914	12,982	6,741	8,278	7,664
MEAN	624	367	253	173	175	355	855	707	433	217	267	255
MAX	1,080	466	320	250	190	700	1,560	1,260	845	296	448	413
MIN	452	280	220	130	160	170	380	436	245	187	182	161
CFSM	1.40	0.82	0.57	0.39	0.39	0.80	1.91	1.58	0.97	0.49	0.60	0.57
IN.	1.61	0.92	0.65	0.45	0.41	0.92	2.13	1.82	1.08	0.56	0.69	0.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	1998	1999	2000	2001	2002	2003
MEAN	298	282	233	177	188	326
MAX	624	367	356	195	209	542
(WY)	(2003)	(2003)	(2002)	(2001)	(1999)	(2000)
MIN	210	221	184	154	172	211
(WY)	(2001)	(2000)	(2001)	(1999)	(2002)	(2002)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1998 - 2003
ANNUAL TOTAL	172,427	142,673	
ANNUAL MEAN	472	391	349
HIGHEST ANNUAL MEAN			441
LOWEST ANNUAL MEAN			299
HIGHEST DAILY MEAN	2,340	1,560	2,340
LOWEST DAILY MEAN	(a)160	(b)Feb 9-13	(a)130
ANNUAL SEVEN-DAY MINIMUM	(a)161	Feb 28	(a)130
MAXIMUM PEAK FLOW		(d)1,580	2,370
MAXIMUM PEAK STAGE		(a)6.65	Apr 5
INSTANTANEOUS LOW FLOW			(f)124
ANNUAL RUNOFF (CFSM)	1.06	0.87	0.78
ANNUAL RUNOFF (INCHES)	14.35	11.87	10.61
10 PERCENT EXCEEDS	1,070	735	649
50 PERCENT EXCEEDS	310	290	250
90 PERCENT EXCEEDS	180	170	170

- (a) Ice affected
- (b) Also occurred Mar. 1-6
- (c) Also occurred Jan. 21-28, 2003
- (d) Gage height, 6.28 ft
- (e) Estimated due to ice effect or missing record
- (f) Result of freezeup

## STREAMS TRIBUTARY TO LAKE MICHIGAN

## 04069416 PESHTIGO RIVER AT PORTERFIELD, WI

LOCATION.--Lat 45°08'36", long 87°48'02", in SE ¼ NE ¼ sec.19, T.31 N., R.22 E., Marinette County, Hydrologic Unit 04030105, on right bank 15 ft upstream from County Trunk E bridge, 0.8 mi south of Porterfield.

DRAINAGE AREA.--1,020 mi<sup>2</sup>.

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	824	929	e520	e410	e310	e400	1,590	1,330	953	394	553	332
2	966	956	e540	e490	e320	e400	1,470	1,260	842	390	625	326
3	886	961	e520	e520	e380	e400	e1,300	1,090	837	431	847	328
4	1,090	947	e430	e430	e470	e420	e1,200	1,130	700	400	1,040	300
5	1,440	925	e490	e400	e820	e400	e1,100	1,190	606	392	986	275
6	1,800	915	e520	e390	e440	e380	999	1,380	593	361	989	282
7	2,330	903	e560	e390	e330	e370	940	1,500	763	323	1,090	269
8	2,340	906	e540	e470	e350	e370	1,090	1,660	880	327	1,030	230
9	2,190	903	e540	e500	e350	e330	1,090	1,840	1,100	414	872	258
10	2,190	908	e560	e520	e330	e370	1,100	1,940	1,350	371	812	333
11	2,090	1,030	e490	e460	e340	e380	1,330	1,850	2,120	383	742	295
12	1,730	1,200	e490	e410	e330	e390	1,640	2,190	2,380	422	729	294
13	1,550	1,170	e500	e360	e370	e360	1,970	2,470	2,120	408	680	408
14	1,460	1,120	e500	e320	e410	e360	2,080	2,710	1,630	365	639	714
15	1,220	960	e520	e340	e440	e390	1,980	2,450	1,420	378	480	1,060
16	1,170	914	e520	e300	e440	e560	2,420	2,210	1,100	399	534	1,270
17	1,180	904	e580	e220	e410	e760	3,460	1,950	863	411	446	1,180
18	1,060	811	e560	e200	e400	e1,100	3,730	1,630	711	374	428	884
19	1,010	684	e560	e190	e390	e1,400	3,740	1,400	763	362	447	750
20	1,100	688	e700	e210	e390	e1,800	3,700	1,350	630	307	371	530
21	1,070	783	e760	e240	e410	e2,100	3,740	1,430	453	343	326	397
22	1,160	771	e720	e250	e410	e2,100	3,800	1,230	510	346	374	458
23	1,370	768	e680	e250	e480	e2,100	3,640	1,250	517	489	409	509
24	1,170	767	e520	e260	e440	e2,100	3,050	1,160	472	371	402	520
25	1,190	673	e540	e280	e390	1,880	2,610	912	456	340	403	489
26	1,200	637	e520	e260	e400	1,520	2,500	963	576	420	392	543
27	1,200	e480	e480	e250	e500	1,220	2,190	778	571	509	318	675
28	1,230	e420	e540	e250	e470	1,540	1,810	650	396	639	375	712
29	1,310	e480	e470	e250	---	1,970	1,410	929	417	597	467	699
30	1,170	e600	e500	e250	---	1,900	1,340	700	422	500	412	725
31	1,040	---	e480	e290	---	1,790	---	936	---	513	404	---
TOTAL	42,736	25,113	16,850	10,360	11,520	31,560	64,019	45,468	27,151	12,679	18,622	16,045
MEAN	1,379	837	544	334	411	1,018	2,134	1,467	905	409	601	535
MAX	2,340	1,200	760	520	820	2,100	3,800	2,710	2,380	639	1,090	1,270
MIN	824	420	430	190	310	330	940	650	396	307	318	230
CFSM	1.35	0.82	0.53	0.33	0.40	1.00	2.09	1.44	0.89	0.40	0.59	0.52
IN.	1.56	0.92	0.61	0.38	0.42	1.15	2.33	1.66	0.99	0.46	0.68	0.59

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

MEAN	659	598	472	372	422	801	1,589	1,139	892	561	480	510
MAX	1,379	837	675	434	526	1,027	2,209	1,754	1,791	844	660	762
(WY)	(2003)	(2003)	(2002)	(1999)	(1999)	(2000)	(2002)	(2002)	(2002)	(1999)	(2002)	(2000)
MIN	432	429	347	334	368	589	774	587	518	330	353	316
(WY)	(2000)	(2000)	(2000)	(2003)	(2001)	(2002)	(2000)	(2000)	(2000)	(2001)	(1998)	(1999)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	361,548		322,123			
ANNUAL MEAN	991		883		721	
HIGHEST ANNUAL MEAN					917	
LOWEST ANNUAL MEAN					568	
HIGHEST DAILY MEAN	4,120	Jun 25	3,800	Apr 22	4,120	Jun 25, 2002
LOWEST DAILY MEAN	(a)280	Jan 4	(a)190	Jan 19	164	Sep 25, 1998
ANNUAL SEVEN-DAY MINIMUM	(a)331	Jan 2	(a)223	Jan 17	218	Jul 28, 1998
MAXIMUM PEAK FLOW			(b)4,000	Apr 18	4,380	Jun 25, 2002
MAXIMUM PEAK STAGE			(a)11.76	Mar 23	12.08	Jun 25, 2002
ANNUAL RUNOFF (CFSM)	0.97		0.87		0.71	
ANNUAL RUNOFF (INCHES)	13.19		11.75		9.60	
10 PERCENT EXCEEDS	2,320		1,890		1,300	
50 PERCENT EXCEEDS	704		597		518	
90 PERCENT EXCEEDS	374		330		340	

(a) Ice affected

(b) Gage height, 11.42 ft

(c) Estimated due to ice effect or missing record

04069500 PESHTIGO RIVER AT PESHTIGO, WI

LOCATION.--Lat 45°02'49", long 87°44'40", in NE ¼ sec.30, T.30 N., R.23 E., Marinette County, Hydrologic Unit 04030105, on left bank 75 ft downstream from Chicago and Northwestern Railway bridge, 0.5 mi downstream from Wisconsin Public Service Corp. Powerplant at Peshtigo, and 11.5 mi upstream from mouth.

DRAINAGE AREA.--1,080 mi<sup>2</sup>.

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

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	741	940	526	420	e310	e400	1,680	1,370	1,080	466	664	359
2	829	981	570	514	e330	e400	1,520	1,310	919	440	709	326
3	837	994	539	536	e400	e410	1,440	1,150	947	473	862	338
4	1,050	960	437	452	e500	e420	1,400	1,170	821	447	1,130	322
5	1,350	967	507	422	e860	e410	1,090	1,260	711	418	1,110	252
6	1,730	951	535	e410	e450	e390	1,120	1,440	671	413	1,150	290
7	2,190	908	594	402	e330	e370	871	1,560	869	359	1,210	269
8	2,360	937	598	473	e360	e360	1,090	1,680	1,000	366	1,130	234
9	2,130	936	592	515	e360	e330	1,100	1,810	1,170	472	970	244
10	2,150	952	556	554	e350	e370	1,180	1,930	1,490	449	915	344
11	2,040	1,020	512	482	e360	e410	1,410	2,030	2,120	441	862	338
12	1,770	1,200	491	e410	e330	e420	1,690	2,230	2,380	484	802	321
13	1,530	1,150	526	e370	e390	e380	1,930	2,440	2,170	482	751	563
14	1,480	1,150	517	e330	e430	e370	2,080	2,650	1,760	418	689	949
15	1,300	982	535	e340	e460	e400	1,990	2,430	1,500	408	540	1,400
16	1,190	925	e560	e320	e460	e560	2,460	2,200	1,220	423	460	1,520
17	1,220	922	e560	e230	e420	e780	3,390	2,000	986	430	461	1,430
18	1,110	837	e580	e190	e410	e1,100	3,680	1,700	774	387	466	1,120
19	1,050	732	e580	e170	e390	e1,400	3,790	1,490	765	373	442	933
20	1,100	688	729	e220	e400	e1,900	3,730	1,410	757	309	367	715
21	1,150	756	797	e250	e410	e2,200	3,800	1,450	492	370	305	495
22	1,190	822	753	e260	e420	e2,200	3,740	1,330	524	390	349	501
23	1,430	762	e680	e260	e500	e2,200	3,640	1,320	566	569	356	602
24	1,220	760	e540	e260	e460	e2,200	3,100	1,240	533	452	396	628
25	1,240	693	e560	e260	e400	1,920	2,630	1,020	478	369	384	587
26	1,240	655	e560	e260	e410	1,600	2,450	1,060	597	481	378	634
27	1,250	498	e480	e270	e520	1,240	2,240	910	616	620	300	768
28	1,260	424	e520	e260	e490	1,600	1,870	764	464	727	348	809
29	1,280	554	491	e260	---	2,060	1,480	949	463	706	541	797
30	1,240	636	515	e260	---	2,000	1,370	830	479	583	443	818
31	1,100	---	514	e300	---	1,850	---	939	---	583	417	---
TOTAL	42,757	25,692	17,454	10,660	11,910	32,650	64,961	47,072	29,322	14,308	19,907	18,906
MEAN	1,379	856	563	344	425	1,053	2,165	1,518	977	462	642	630
MAX	2,360	1,200	797	554	860	2,200	3,800	2,650	2,380	727	1,210	1,520
MIN	741	424	437	170	310	330	871	764	463	309	300	234
CFSM	1.28	0.79	0.52	0.32	0.39	0.98	2.00	1.41	0.91	0.43	0.59	0.58
IN.	1.47	0.88	0.60	0.37	0.41	1.12	2.24	1.62	1.01	0.49	0.69	0.65

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2003, BY WATER YEAR (WY)

MEAN	794	880	625	532	542	1,055	2,041	1,450	1,058	650	586	729
MAX	1,728	2,197	1,128	1,219	1,449	3,272	3,813	4,639	2,768	1,362	1,242	1,706
(WY)	(1986)	(1986)	(1966)	(1960)	(1984)	(1973)	(1979)	(1960)	(1993)	(1993)	(1974)	(1959)
MIN	310	328	250	268	282	424	485	538	228	300	285	264
(WY)	(1990)	(1977)	(1990)	(1990)	(1990)	(1964)	(1990)	(1977)	(1988)	(1989)	(1957)	(1989)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1953 - 2003
ANNUAL TOTAL	371,930	335,599	
ANNUAL MEAN	1,019	919	912
HIGHEST ANNUAL MEAN			1,559
LOWEST ANNUAL MEAN			580
HIGHEST DAILY MEAN	4,240	3,800	9,600
LOWEST DAILY MEAN	290	(a)170	84
ANNUAL SEVEN-DAY MINIMUM	337	(a)226	172
MAXIMUM PEAK FLOW		3,970	(b)9,790
MAXIMUM PEAK STAGE		7.42	11.59
ANNUAL RUNOFF (CFSM)	0.94	0.85	0.84
ANNUAL RUNOFF (INCHES)	12.81	11.56	11.47
10 PERCENT EXCEEDS	2,310	1,930	1,780
50 PERCENT EXCEEDS	746	671	665
90 PERCENT EXCEEDS	392	342	350

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

LOCATION.--Lat 44°51'55"(revised), long 88°18'00", in NE 1/4 NW ¼ sec.34, T.28 N., R.18 E., Oconto County, Hydrologic Unit 04030104, on left bank 300 ft upstream from County Trunk Highway BB bridge, 2.0 mi upstream from Christy Brook, 2.0 mi south of Gillett, and at mile 29.

DRAINAGE AREA.--705 mi<sup>2</sup>.

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

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	402	667	e430	e310	e220	e260	1,090	934	564	369	565	305
2	444	641	e390	e290	e220	e260	952	868	541	352	596	292
3	447	615	e340	e300	e230	e260	872	800	509	348	713	283
4	498	593	e320	e300	e230	e260	815	728	479	329	852	276
5	604	579	e340	e300	e240	e260	707	731	454	327	675	274
6	740	584	e360	e320	e250	e260	685	817	407	328	600	268
7	860	581	e370	e330	e250	e260	e690	947	444	323	547	264
8	984	577	e370	e320	e250	e260	e690	1,100	556	316	523	262
9	1,060	570	e360	e310	e250	e260	704	1,200	662	308	479	259
10	1,060	566	e350	e290	e250	e250	719	1,200	887	342	453	256
11	1,000	575	e350	e270	e260	e250	759	1,220	1,080	395	500	253
12	906	625	e350	e260	e260	e260	825	1,230	1,150	411	491	259
13	783	659	e360	e270	e260	e260	902	1,300	1,220	379	482	349
14	704	629	e360	e280	e260	e260	961	1,410	1,170	347	427	682
15	684	610	e360	e280	e260	e270	1,040	1,390	1,000	330	392	767
16	659	595	e360	e270	e260	e390	1,910	1,280	785	321	359	731
17	629	571	e370	e270	e260	e620	1,970	1,150	639	317	323	664
18	608	544	e380	e270	e260	e740	2,240	1,000	563	308	316	555
19	596	507	e390	e260	e250	e720	2,320	897	512	299	309	453
20	598	518	e410	e250	e250	e720	2,250	861	465	291	302	367
21	611	516	e420	e240	e260	e720	2,130	852	429	302	296	341
22	629	506	e410	e230	e260	e760	2,040	857	403	301	290	347
23	663	499	e400	e220	e260	e820	1,930	825	384	301	286	380
24	708	492	e390	e210	e260	e850	1,780	767	371	298	295	417
25	738	478	e360	e210	e260	e890	1,620	720	378	292	314	398
26	756	460	e370	e210	e260	e940	1,460	668	421	339	346	376
27	769	423	e380	e210	e260	991	1,320	604	392	471	321	379
28	779	e390	e370	e210	e260	1,030	1,190	556	377	485	288	404
29	764	e370	e360	e210	---	1,120	1,070	547	378	505	318	426
30	734	e410	e350	e210	---	1,180	999	557	383	507	332	398
31	701	---	e330	e220	---	1,190	---	579	---	526	321	---
TOTAL	22,118	16,350	11,460	8,130	7,050	17,571	38,640	28,595	18,003	11,067	13,311	11,685
MEAN	713	545	370	262	252	567	1,288	922	600	357	429	390
MAX	1,060	667	430	330	260	1,190	2,320	1,410	1,220	526	852	767
MIN	402	370	320	210	220	250	685	547	371	291	286	253
CFSM	1.01	0.77	0.52	0.37	0.36	0.80	1.83	1.31	0.85	0.51	0.61	0.55
IN.	1.17	0.86	0.60	0.43	0.37	0.93	2.04	1.51	0.95	0.58	0.70	0.62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2003, BY WATER YEAR (WY)

MEAN	484	559	446	355	348	643	1,217	867	672	461	383	447
MAX	1,216	1,377	900	700	643	1,867	3,435	2,185	1,744	1,022	742	1,347
(WY)	(1942)	(1986)	(1907)	(1907)	(1984)	(1973)	(1922)	(1960)	(1916)	(1922)	(1960)	(1928)
MIN	199	259	216	206	204	240	379	357	197	226	158	190
(WY)	(1949)	(1934)	(1990)	(1957)	(1948)	(1934)	(1931)	(1931)	(1988)	(1988)	(1934)	(1933)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1906 - 2003
ANNUAL TOTAL	214,951	203,980	
ANNUAL MEAN	589	559	574
HIGHEST ANNUAL MEAN			930
LOWEST ANNUAL MEAN			315
HIGHEST DAILY MEAN	1,870	Apr 28	2,320
LOWEST DAILY MEAN	(a)220	(b)Jan 5,20	(a)210
ANNUAL SEVEN-DAY MINIMUM	(a)229	Jan 5	(a)210
MAXIMUM PEAK FLOW			(c)2,360
MAXIMUM PEAK STAGE			(a)5.64
INSTANTANEOUS LOW FLOW			(a)
ANNUAL RUNOFF (CFSM)	0.84	0.79	0.81
ANNUAL RUNOFF (INCHES)	11.34	10.76	11.06
10 PERCENT EXCEEDS	1,110	1,010	1,050
50 PERCENT EXCEEDS	468	417	438
90 PERCENT EXCEEDS	240	260	257

- (a) Ice affected  
 (b) Also occurred Feb. 15  
 (c) Gage height, 4.34 ft  
 (d) From floodmarks, caused by failure of a dam at Pulcifer 4 mi above station  
 (e) Estimated due to ice effect or missing record  
 (f) Result of freezeup

04071765 OCONTO RIVER NEAR OCONTO, WI

LOCATION.--Lat 44°51'38", long 87°59'02", in NW ¼ NW ¼ sec.32, T.28 N., R.21 E., Oconto County, Hydrologic Unit 04030104, on left bank 30 ft upstream from County Highway J bridge, 0.7 mi downstream from mouth of Little River, and 4.6 mi west of Oconto.

DRAINAGE AREA.--966 mi<sup>2</sup>.

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	476	763	e390	e340	e240	e270	1,630	1,170	705	396	663	315
2	491	728	e280	e320	e260	e270	1,350	1,070	663	380	695	311
3	499	713	e210	e330	e250	e280	1,170	993	619	351	796	266
4	843	671	e260	e320	e250	e280	1,030	898	591	355	1,210	257
5	1,270	679	e290	e320	e260	e280	771	1,030	559	314	866	252
6	1,110	693	e380	e350	e270	e280	923	1,520	535	329	734	241
7	1,180	699	e390	e330	e270	e280	807	1,580	616	322	627	251
8	1,250	679	e390	e360	e280	e280	849	1,660	778	307	593	249
9	1,230	677	e380	e340	e270	e280	879	1,720	945	294	511	236
10	1,330	689	e360	e320	e280	e270	1,130	1,640	1,490	378	485	231
11	1,360	690	e350	e300	e280	e260	1,260	2,170	2,410	485	541	242
12	1,100	716	e350	e280	e280	e270	1,210	2,250	1,980	465	527	284
13	941	753	e370	e270	e280	e270	1,200	2,010	1,870	438	537	534
14	796	736	e380	e300	e280	e290	1,170	1,900	1,580	380	451	1,550
15	832	680	e380	e300	e280	e430	1,330	1,800	1,300	344	413	1,750
16	745	679	e380	e300	e280	e660	4,000	1,630	911	320	395	1,420
17	713	634	e380	e300	e280	e980	4,390	1,480	702	316	301	1,200
18	705	593	e390	e280	e270	e1,100	3,660	1,220	617	310	312	1,020
19	693	612	e450	e270	e270	e970	3,490	1,170	545	288	299	602
20	685	586	e520	e260	e260	e920	3,470	1,080	508	270	286	529
21	734	593	e520	e260	e270	e970	3,210	1,020	493	331	292	496
22	849	598	e520	e250	e280	e1,200	2,850	1,010	435	300	269	500
23	937	571	e520	e240	e280	e1,400	2,610	983	391	284	243	525
24	960	574	e460	e230	e280	1,740	2,300	916	409	295	317	573
25	971	549	e360	e230	e280	2,140	2,100	845	419	264	329	551
26	967	500	e370	e230	e270	1,880	1,850	794	437	489	360	524
27	958	e400	e420	e230	e270	1,460	1,610	734	399	568	330	543
28	959	e370	e420	e230	e270	1,950	1,530	676	419	551	289	544
29	909	e440	e420	e240	---	2,480	1,400	682	427	523	464	573
30	865	e510	e400	e230	---	1,930	1,150	671	418	512	383	543
31	825	---	e380	e230	---	1,840	---	731	---	606	367	---
TOTAL	28,183	18,775	12,070	8,790	7,590	27,910	56,329	39,053	24,171	11,765	14,885	17,112
MEAN	909	626	389	284	271	900	1,878	1,260	806	380	480	570
MAX	1,360	763	520	360	280	2,480	4,390	2,250	2,410	606	1,210	1,750
MIN	476	370	210	230	240	260	771	671	391	264	243	231
CFSM	0.94	0.65	0.40	0.29	0.28	0.93	1.94	1.30	0.83	0.39	0.50	0.59
IN.	1.09	0.72	0.46	0.34	0.29	1.07	2.17	1.50	0.93	0.45	0.57	0.66

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	405	441	345	296	353	805	1,158	834	846	440	398	478			
MAX	909	626	557	344	565	1,132	1,878	1,266	1,439	751	635	1,044			
(WY)	(2003)	(2003)	(2002)	(1998)	(1998)	(1990)	(2003)	(2002)	(1990)	(2000)	(2002)	(1990)			
MIN	240	280	251	240	263	459	423	448	370	260	261	196			
(WY)	(2000)	(2000)	(1990)	(2000)	(1990)	(2001)	(1990)	(1998)	(1999)	(1989)	(1989)	(1999)			

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1989 - 2003
ANNUAL TOTAL	277,178	266,633	
ANNUAL MEAN	759	731	567
HIGHEST ANNUAL MEAN			731
LOWEST ANNUAL MEAN			433
HIGHEST DAILY MEAN	2,860	Apr 28	4,390
LOWEST DAILY MEAN	(b)210	Dec 3	(b)210
ANNUAL SEVEN-DAY MINIMUM	289	Jul 18	(b)231
MAXIMUM PEAK FLOW			5,200
MAXIMUM PEAK STAGE			10.23
ANNUAL RUNOFF (CFSM)	0.79		0.76
ANNUAL RUNOFF (INCHES)	10.67		10.27
10 PERCENT EXCEEDS	1,440		1,130
50 PERCENT EXCEEDS	611		382
90 PERCENT EXCEEDS	320		240

(a) Estimated, discharge measurement of 4,700 ft<sup>3</sup>/s on Mar. 31, 1998

(b) Ice affected

(c) Also occurred Sept. 3, 1999

(d) Estimated, gage height, 10.91 ft, backwater from ice

(e) Estimated due to ice effect or missing record

STREAMS TRIBUTARY TO LAKE MICHIGAN

04072150 DUCK CREEK NEAR HOWARD, WI

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

DRAINAGE AREA.--108 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.47	5.9	e3.3	e4.7	e2.9	e6.0	70	29	12	4.5	319	2.0
2	0.53	5.4	e3.7	e4.3	e3.3	e5.4	59	28	19	3.6	383	1.6
3	0.60	5.2	e3.6	e4.1	e4.0	e4.9	e49	26	15	3.6	279	1.3
4	3.5	4.5	e3.3	e4.3	e3.7	e4.6	e43	22	13	3.6	438	0.96
5	3.4	4.7	e3.0	e4.6	e3.5	e4.1	e36	37	11	2.5	544	0.76
6	6.3	4.5	e2.7	e4.3	e3.2	e4.1	e31	140	9.9	2.0	310	0.65
7	6.4	5.1	e2.9	e4.6	e2.9	e4.5	e27	161	17	2.1	214	0.55
8	5.3	4.6	e2.7	e4.9	e3.1	e4.2	24	154	23	1.7	177	0.52
9	4.5	4.8	e2.7	e5.1	e2.9	e3.9	23	159	30	1.4	115	0.47
10	4.6	4.7	e2.8	e4.7	e2.8	e3.7	30	187	73	3.2	68	1.1
11	4.4	4.8	e3.1	e4.4	e2.8	e3.9	40	252	314	7.1	130	0.51
12	3.3	4.8	e3.1	e4.2	e2.7	e4.0	41	407	304	4.5	100	0.42
13	2.7	4.6	e3.1	e3.9	e2.7	e4.0	37	263	158	6.8	55	4.5
14	2.3	4.8	e3.1	e3.6	e2.7	e12	33	147	93	6.8	35	36
15	2.3	4.7	e2.9	e3.4	e2.6	e92	32	103	57	4.6	24	118
16	1.9	5.1	e2.7	e1.1	e2.6	e350	120	77	35	3.0	17	100
17	2.0	4.5	e2.9	0.61	e2.8	e320	372	59	24	3.1	13	62
18	2.2	4.3	e5.7	0.19	e3.1	e190	280	45	17	2.6	9.4	41
19	2.8	4.6	e6.5	e2.8	e3.5	e120	155	36	14	1.5	7.2	24
20	2.7	4.4	e5.5	e2.6	e4.0	e93	165	31	11	1.1	5.7	14
21	4.5	4.4	e4.9	e0.40	e5.9	e89	195	26	9.2	0.99	8.4	9.5
22	7.3	4.3	e4.3	0.10	e5.7	e110	149	21	7.6	0.84	6.6	8.7
23	9.4	4.3	e3.9	e0.91	e5.1	e140	111	17	6.3	0.60	5.6	6.6
24	12	e4.3	e3.4	e2.3	e4.6	e110	85	14	5.8	0.40	4.7	5.9
25	9.9	e4.2	e3.1	e2.4	e4.2	e89	69	13	4.9	0.27	4.1	5.1
26	9.5	e4.0	e3.2	e2.3	e4.0	e67	57	11	4.5	0.44	3.4	5.0
27	9.0	e3.9	e3.3	e2.3	e4.2	e55	46	9.8	3.6	0.51	2.9	4.6
28	8.4	e3.8	e3.5	e2.4	e4.9	e96	38	10	5.5	0.27	3.3	4.1
29	8.0	4.0	e3.6	e2.3	---	235	32	9.0	5.9	0.14	6.8	3.8
30	7.4	e3.9	e4.8	e2.4	---	170	29	9.1	6.5	16	2.9	3.6
31	6.6	---	e5.1	e2.6	---	92	---	11	---	121	2.2	---
TOTAL	154.20	137.1	112.4	92.81	100.4	2,487.3	2,478	2,513.9	1,309.7	210.76	3,294.2	467.24
MEAN	4.97	4.57	3.63	2.99	3.59	80.2	82.6	81.1	43.7	6.80	106	15.6
MAX	12	5.9	6.5	5.1	5.9	350	372	407	314	121	544	118
MIN	0.47	3.8	2.7	0.10	2.6	3.7	23	9.0	3.6	0.14	2.2	0.42
CFSM	0.05	0.04	0.03	0.03	0.03	0.74	0.76	0.75	0.40	0.06	0.98	0.14
IN.	0.05	0.05	0.04	0.03	0.03	0.86	0.85	0.87	0.45	0.07	1.13	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)																							
	9.19	27.8	(1996)	0.14	(2000)	15.8	93.5	(1993)	0.59	(1990)	6.37	36.8	(1996)	0.11	(1990)	26.6	102	(1998)	0.51	(1989)	142	250	(1991)	9.40	(2000)	53.6	370	104	29.6	106	(2003)	0.000	(1988)	12.8	106	(1988)	0.000	(1988)	8.28	36.8	(1990)	0.000	(1989)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1988 - 2003
ANNUAL TOTAL	22,672.76	13,358.01	
ANNUAL MEAN	62.1	36.6	50.6
HIGHEST ANNUAL MEAN			123
LOWEST ANNUAL MEAN			14.5
HIGHEST DAILY MEAN	848	544	3,690
LOWEST DAILY MEAN	0.10	0.10	0.00
ANNUAL SEVEN-DAY MINIMUM	0.27	0.38	0.00
MAXIMUM PEAK FLOW		(b)595	(c)4,520
MAXIMUM PEAK STAGE		(d)14.71	(f)21.00
INSTANTANEOUS LOW FLOW		0.09	0.00
ANNUAL RUNOFF (CFSM)	0.58	0.34	0.47
ANNUAL RUNOFF (INCHES)	7.81	4.60	6.36
10 PERCENT EXCEEDS	175	119	117
50 PERCENT EXCEEDS	4.5	4.8	6.6
90 PERCENT EXCEEDS	1.1	2.0	0.51

- (a) Also occurred additional days
- (b) Gage height, 14.33 ft
- (c) Based on rating curve extended above 1,500 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow
- (d) Ice affected
- (e) Estimated due to ice effect or missing record
- (f) Estimated from floodmarks



04072150 DUCK CREEK NEAR HOWARD, WI—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 2002 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: May 2002 to current year.

SPECIFIC CONDUCTANCE: May 2002 to current year.

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

REMARKS.--Records represent water temperature at sensor within 0.5°C. Records for water temperature were faulty Jan. 15 to Mar. 23, Apr. 3-7, and July 26 to Aug. 8. Records for specific conductance were faulty Jan. 15 to Mar. 23, Apr. 3-7, and July 26 to Aug. 8.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum, 30.5°C, July 2, 21 and 2, 2002; minimum, 0.0° many days during 2003 water year.

SPECIFIC CONDUCTANCE: Maximum, 1,930 microsiemens per centimeter, Jan. 15, 2003 (partial day); minimum, 340 microsiemens per centimeter, June 4, 2002.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 29.0°C, July 5; minimum, 0.0°C, many days.

SPECIFIC CONDUCTANCE: Maximum, 1,930 microsiemens per centimeter, Jan. 15 (partial day); minimum, 479 microsiemens per centimeter, Sept. 15.

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	21.0	16.5	18.5	4.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
2	18.5	14.0	16.0	4.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
3	15.5	12.0	14.0	3.5	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
4	16.0	14.0	15.0	4.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
5	14.0	12.0	13.0	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
6	14.0	11.5	13.0	4.5	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
7	11.5	9.5	10.5	4.5	1.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
8	12.5	10.0	11.0	6.5	3.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0
9	12.5	10.0	11.0	7.5	5.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0
10	12.0	9.0	10.0	8.5	7.5	8.0	0.0	0.0	0.0	0.0	0.0	0.0
11	13.0	9.5	11.0	7.5	5.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0
12	12.0	10.5	11.5	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
13	11.0	8.0	9.5	4.5	2.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
14	9.0	6.5	8.0	4.5	2.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
15	9.5	7.5	8.5	2.5	1.0	1.5	0.0	0.0	0.0	---	---	---
16	8.0	5.5	7.0	2.0	0.5	1.5	0.0	0.0	0.0	---	---	---
17	7.5	5.0	6.5	1.5	0.0	1.0	0.0	0.0	0.0	---	---	---
18	6.0	5.0	5.5	1.0	0.0	0.5	0.0	0.0	0.0	---	---	---
19	7.5	5.5	6.5	2.0	0.0	1.0	0.0	0.0	0.0	---	---	---
20	7.0	5.5	6.5	2.5	0.5	1.5	0.0	0.0	0.0	---	---	---
21	6.5	3.5	5.0	2.5	1.5	2.0	0.0	0.0	0.0	---	---	---
22	5.0	4.5	4.5	2.0	1.0	1.5	0.0	0.0	0.0	---	---	---
23	5.5	4.0	4.5	2.5	1.0	1.5	0.0	0.0	0.0	---	---	---
24	5.0	4.0	4.5	2.0	0.0	1.0	0.0	0.0	0.0	---	---	---
25	5.5	4.5	5.0	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
26	6.5	5.0	6.0	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
27	6.0	4.5	5.0	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
28	6.0	4.0	5.0	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
29	6.0	4.0	5.0	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
30	6.0	3.5	5.0	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
31	5.5	3.5	5.0	---	---	---	0.0	0.0	0.0	---	---	---
MONTH	21.0	3.5	8.6	8.5	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	5.0	1.5	3.0	16.0	10.0	13.0
2	---	---	---	---	---	---	4.0	2.0	3.0	14.5	10.0	12.5
3	---	---	---	---	---	---	---	---	---	15.0	9.0	12.0
4	---	---	---	---	---	---	---	---	---	13.5	10.0	12.0
5	---	---	---	---	---	---	---	---	---	12.5	9.5	11.0
6	---	---	---	---	---	---	---	---	---	10.5	9.0	10.0
7	---	---	---	---	---	---	---	---	---	10.0	9.0	9.5
8	---	---	---	---	---	---	5.0	0.0	2.5	13.5	9.5	11.0
9	---	---	---	---	---	---	6.5	0.5	3.5	13.0	11.0	12.0
10	---	---	---	---	---	---	8.5	2.5	6.0	15.0	11.5	13.0
11	---	---	---	---	---	---	11.0	4.5	8.0	13.5	11.5	13.0
12	---	---	---	---	---	---	10.5	5.5	8.0	12.0	10.5	11.0
13	---	---	---	---	---	---	11.5	5.0	8.5	14.5	10.0	12.0
14	---	---	---	---	---	---	15.0	8.0	11.5	15.0	12.5	13.5
15	---	---	---	---	---	---	15.5	11.5	13.5	17.0	12.0	14.5
16	---	---	---	---	---	---	12.0	5.5	7.0	18.5	12.5	15.5
17	---	---	---	---	---	---	5.5	3.0	4.0	17.5	14.0	15.5
18	---	---	---	---	---	---	4.5	3.0	3.5	19.0	13.5	16.5
19	---	---	---	---	---	---	6.0	4.0	5.0	18.0	15.5	16.5
20	---	---	---	---	---	---	9.5	6.0	7.5	19.0	15.0	17.0
21	---	---	---	---	---	---	10.0	8.5	9.0	17.0	12.5	15.5
22	---	---	---	---	---	---	11.5	7.5	9.5	21.5	12.0	14.5
23	---	---	---	---	---	---	12.0	7.0	9.0	18.5	13.0	15.5
24	---	---	---	0.0	0.0	0.0	13.0	7.0	10.0	19.0	13.5	16.0
25	---	---	---	0.5	0.0	0.0	14.0	9.0	11.5	20.0	15.0	17.5
26	---	---	---	0.5	0.0	0.0	14.5	8.0	11.0	21.0	15.0	18.0
27	---	---	---	0.0	0.0	0.0	16.5	9.0	13.0	21.5	16.0	18.5
28	---	---	---	1.5	0.0	1.0	17.5	12.0	15.0	18.5	15.5	17.0
29	---	---	---	2.0	0.5	1.0	15.5	11.5	14.0	20.5	14.5	17.5
30	---	---	---	2.5	0.0	1.0	14.5	11.0	12.0	18.0	15.5	17.0
31	---	---	---	4.0	0.0	2.0	---	---	---	18.5	14.0	16.0
MONTH	---	---	---	4.0	0.0	0.6	17.5	0.0	8.3	21.5	9.0	14.3
	JUNE			JULY			AUGUST			SEPTEMBER		
1	18.5	13.0	15.5	25.5	19.5	22.5	---	---	---	21.0	16.0	18.5
2	18.0	15.0	16.5	25.5	20.0	22.5	---	---	---	21.5	16.0	18.5
3	20.5	16.0	18.0	28.0	21.0	24.5	---	---	---	21.0	17.5	19.0
4	20.0	16.0	17.5	27.5	22.0	24.5	---	---	---	19.0	16.0	17.5
5	21.5	16.0	18.5	29.0	22.0	25.0	---	---	---	19.5	14.0	17.0
6	18.5	16.5	17.5	24.5	22.0	23.0	---	---	---	21.5	15.5	18.5
7	18.5	16.0	17.0	27.5	20.5	23.5	---	---	---	21.5	17.5	19.5
8	16.5	15.5	16.0	24.0	21.0	22.0	---	---	---	22.5	18.0	20.5
9	19.0	14.5	16.5	21.0	18.5	20.0	22.5	19.5	20.5	23.0	18.5	20.5
10	18.5	15.0	15.5	20.0	18.0	19.0	23.0	19.0	21.0	22.0	18.0	20.0
11	16.0	14.0	15.0	20.0	18.0	19.0	21.0	19.5	20.0	23.0	18.5	20.5
12	17.5	14.5	16.0	24.5	17.5	20.5	21.0	18.5	20.0	21.5	18.5	20.0
13	20.0	16.0	17.5	25.5	19.0	22.0	22.0	18.0	20.0	20.5	19.5	20.0
14	21.5	17.0	19.0	25.5	21.0	23.0	23.5	19.0	21.0	20.0	17.5	18.5
15	21.5	17.5	19.5	25.5	21.5	23.0	24.5	20.5	22.5	18.0	16.0	17.0
16	22.0	17.0	19.5	26.0	19.0	22.5	24.5	22.0	23.5	18.0	15.0	16.5
17	22.0	16.5	20.0	23.5	20.0	21.5	24.5	21.5	23.0	18.5	15.0	17.0
18	23.0	19.0	21.5	24.5	17.0	20.5	25.5	21.0	23.0	19.0	16.0	17.5
19	22.0	18.5	20.0	25.5	17.5	21.5	26.0	21.5	23.5	18.0	16.0	17.0
20	22.0	16.5	19.0	25.5	20.0	23.0	27.0	22.0	24.0	16.0	13.5	15.0
21	24.0	17.5	20.5	23.5	20.5	22.0	27.0	23.0	25.0	16.0	13.5	15.0
22	25.5	18.0	21.5	22.0	18.5	20.5	26.0	21.5	23.5	16.5	14.5	16.0
23	26.0	19.0	22.5	23.5	17.0	20.5	24.0	20.5	22.0	15.5	13.0	14.0
24	27.0	21.0	24.0	25.0	17.5	21.5	25.0	20.0	22.5	15.5	13.0	14.0
25	27.5	23.5	25.0	25.0	19.0	22.5	25.5	22.0	23.5	13.5	11.5	12.5
26	25.0	20.5	23.0	---	---	---	26.5	21.5	24.0	13.0	11.5	12.0
27	22.5	18.5	20.5	---	---	---	24.5	20.5	22.5	13.0	11.5	12.0
28	19.5	16.5	17.5	---	---	---	23.5	18.0	21.0	12.0	10.5	11.0
29	21.5	16.5	18.5	---	---	---	23.5	20.0	22.0	11.0	8.5	10.0
30	24.5	17.5	21.0	---	---	---	22.0	17.0	19.5	10.0	8.5	9.5
31	---	---	---	---	---	---	20.5	16.5	18.5	---	---	---
MONTH	27.5	13.0	19.0	29.0	17.0	22.0	27.0	16.5	22.0	23.0	8.5	16.5

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

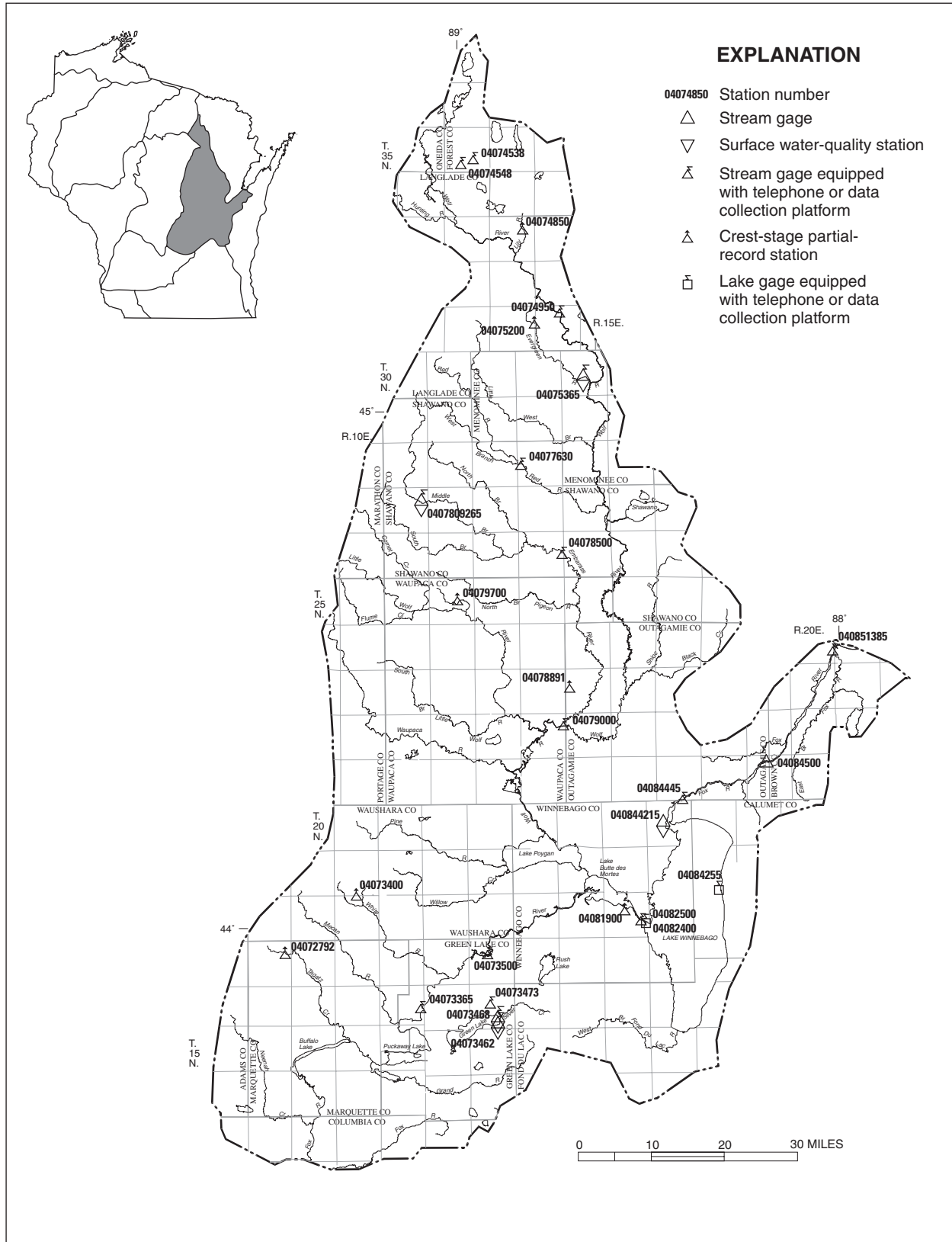
DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	862	833	850	985	967	975	1,270	1,050	1,230	1,140	908	1,080
2	864	838	853	968	962	965	1,310	1,150	1,250	1,160	980	1,140
3	868	841	855	973	965	968	1,460	1,300	1,400	1,130	973	1,120
4	872	743	801	982	970	975	1,500	1,400	1,470	1,130	963	1,120
5	813	750	786	986	969	978	1,540	1,460	1,500	1,160	959	1,110
6	853	750	803	994	981	988	1,630	1,450	1,570	1,160	992	1,130
7	892	852	873	1,020	990	1,000	1,590	1,180	1,520	1,110	1,080	1,090
8	890	785	826	1,040	1,020	1,020	1,600	1,360	1,530	1,080	1,030	1,070
9	805	766	777	1,050	1,030	1,040	1,670	1,360	1,640	1,060	1,020	1,040
10	869	805	837	1,050	1,020	1,030	1,670	1,410	1,620	1,240	978	1,150
11	950	869	906	1,040	1,020	1,030	1,600	1,410	1,570	1,390	1,110	1,310
12	1,020	950	987	1,040	924	1,030	1,590	1,410	1,560	1,520	1,250	1,460
13	1,080	1,010	1,040	1,050	989	1,040	1,530	1,390	1,460	1,690	1,510	1,600
14	1,100	1,050	1,060	1,050	1,020	1,050	1,390	1,290	1,340	1,800	1,650	1,740
15	1,100	1,050	1,070	1,060	1,030	1,050	1,320	1,250	1,290	---	---	---
16	1,110	1,020	1,070	1,080	1,060	1,060	1,330	1,280	1,310	---	---	---
17	1,110	1,010	1,070	1,100	1,070	1,080	1,350	1,150	1,330	---	---	---
18	1,080	1,030	1,060	1,120	1,080	1,100	1,360	1,190	1,260	---	---	---
19	1,100	1,050	1,070	1,090	1,070	1,080	1,200	1,010	1,070	---	---	---
20	1,120	1,090	1,100	1,090	917	1,060	1,250	1,040	1,130	---	---	---
21	1,120	979	1,050	1,040	822	1,030	1,630	1,250	1,440	---	---	---
22	1,010	806	947	1,050	833	1,020	1,630	1,480	1,560	---	---	---
23	932	806	908	1,070	915	1,060	1,500	1,380	1,430	---	---	---
24	927	862	888	1,090	1,070	1,080	1,380	1,320	1,350	---	---	---
25	867	861	864	1,130	1,050	1,100	1,380	1,180	1,340	---	---	---
26	911	867	885	1,160	1,080	1,140	1,330	1,040	1,300	---	---	---
27	999	911	954	1,230	1,160	1,200	1,310	1,140	1,290	---	---	---
28	1,100	999	1,050	1,260	1,070	1,240	1,300	1,270	1,290	---	---	---
29	1,100	993	1,070	1,250	1,180	1,230	1,270	1,100	1,240	---	---	---
30	1,020	979	988	1,240	1,190	1,210	1,220	1,150	1,180	---	---	---
31	987	984	985	---	---	---	1,160	856	1,070	---	---	---
MONTH	1,120	743	945	1,260	822	1,060	1,670	856	1,370	1,800	908	1,230
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	741	693	721	878	862	871
2	---	---	---	---	---	---	772	741	759	891	868	879
3	---	---	---	---	---	---	---	---	---	888	868	878
4	---	---	---	---	---	---	---	---	---	889	875	882
5	---	---	---	---	---	---	---	---	---	880	860	872
6	---	---	---	---	---	---	---	---	---	871	798	838
7	---	---	---	---	---	---	---	---	---	798	773	781
8	---	---	---	---	---	---	912	887	899	787	766	776
9	---	---	---	---	---	---	936	893	918	771	736	755
10	---	---	---	---	---	---	927	897	917	739	723	732
11	---	---	---	---	---	---	932	907	922	723	683	712
12	---	---	---	---	---	---	923	875	904	683	666	672
13	---	---	---	---	---	---	909	833	886	718	678	699
14	---	---	---	---	---	---	904	855	883	749	718	734
15	---	---	---	---	---	---	925	868	899	771	749	763
16	---	---	---	---	---	---	897	779	843	796	771	787
17	---	---	---	---	---	---	779	551	610	819	793	811
18	---	---	---	---	---	---	582	525	550	837	815	828
19	---	---	---	---	---	---	649	582	616	863	825	851
20	---	---	---	---	---	---	689	649	669	880	859	870
21	---	---	---	---	---	---	735	669	708	894	865	880
22	---	---	---	---	---	---	794	730	768	896	850	878
23	---	---	---	---	---	---	821	794	811	891	850	876
24	---	---	---	616	591	601	833	821	826	905	827	884
25	---	---	---	642	580	618	842	830	837	902	807	873
26	---	---	---	712	590	659	846	832	840	909	814	863
27	---	---	---	772	694	735	852	827	843	912	808	855
28	---	---	---	791	661	722	865	834	850	913	833	868
29	---	---	---	673	621	653	869	840	858	923	870	897
30	---	---	---	659	644	651	871	850	865	924	832	877
31	---	---	---	693	659	673	---	---	---	907	859	885
MONTH	---	---	---	791	580	664	936	525	808	924	666	827

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04072150 DUCK CREEK NEAR HOWARD, WI—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	916	845	883	913	868	893	---	---	---	881	825	852
2	920	872	903	920	883	905	---	---	---	902	859	874
3	951	905	926	923	864	895	---	---	---	923	876	892
4	946	883	912	918	830	875	---	---	---	931	876	898
5	913	794	855	905	855	883	---	---	---	949	882	909
6	879	814	842	918	888	901	---	---	---	939	858	899
7	836	729	803	912	805	882	---	---	---	971	792	896
8	841	818	829	911	870	896	---	---	---	927	858	880
9	845	823	835	931	882	905	---	---	---	915	839	875
10	828	619	716	924	799	861	---	---	---	902	808	862
11	664	501	563	815	776	793	---	---	---	910	842	873
12	607	525	565	912	814	845	---	---	---	893	828	857
13	673	607	641	978	912	945	---	---	---	834	566	715
14	718	672	694	980	959	970	---	---	---	767	583	636
15	739	716	727	977	914	940	---	---	---	776	479	653
16	750	663	728	964	910	938	---	---	---	607	491	579
17	762	640	723	955	864	921	---	---	---	658	607	627
18	763	658	717	948	890	913	---	---	---	701	658	687
19	758	668	720	958	902	930	---	---	---	702	686	692
20	747	672	714	961	908	932	---	---	---	722	688	712
21	794	585	721	961	910	935	---	---	---	745	718	733
22	795	673	736	964	917	938	---	---	---	754	715	732
23	808	703	760	976	928	942	---	---	---	800	754	775
24	783	731	758	984	923	949	---	---	---	805	741	792
25	806	741	768	969	928	947	---	---	---	813	780	798
26	823	778	800	---	---	---	---	---	---	823	796	811
27	849	802	824	---	---	---	870	845	855	831	811	820
28	876	749	820	---	---	---	884	701	835	839	816	831
29	825	761	782	---	---	---	753	694	730	860	839	853
30	888	817	849	---	---	---	784	723	747	875	850	864
31	---	---	---	---	---	---	826	780	799	---	---	---
MONTH	951	501	770	984	776	909	884	694	793	971	479	796



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 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	529	693	e520	e480	e360	e410	791	625	882	491	402	309
2	503	692	e510	e450	e360	e410	721	616	854	480	406	309
3	498	675	e500	e440	e350	e420	672	631	802	476	398	304
4	583	669	e500	e470	e340	e430	679	637	754	470	409	284
5	621	653	e500	e500	e340	e420	670	629	733	472	420	298
6	651	646	e520	e530	e340	e420	761	675	719	475	416	304
7	630	663	e540	e540	e350	e450	664	698	715	514	413	295
8	628	664	e540	e550	e350	e470	669	737	714	521	405	291
9	616	650	e540	e500	e350	e480	747	818	719	513	414	290
10	625	632	e540	e470	e360	e480	763	877	764	542	412	290
11	645	612	e540	e450	e370	e480	750	1,050	777	564	393	295
12	646	631	e550	e430	e370	e500	719	1,010	791	574	390	300
13	657	626	e570	e400	e370	e540	713	978	813	576	398	324
14	658	616	e580	e390	e380	e560	733	1,070	809	573	398	371
15	615	591	e550	e370	e380	e580	715	1,150	764	570	394	409
16	600	586	e530	e350	e370	e610	581	1,200	728	586	380	420
17	738	593	e530	e350	e370	e640	593	1,210	707	587	367	442
18	890	597	e540	e340	e370	670	671	1,220	686	574	363	442
19	853	601	e540	e340	e380	663	689	1,220	685	581	361	432
20	817	597	e540	e330	e390	682	757	1,210	662	568	353	429
21	787	566	e530	e320	e390	709	735	1,190	634	529	339	427
22	742	567	e530	e310	e390	722	716	1,180	599	499	309	426
23	720	594	e510	e300	e390	749	734	1,150	565	496	309	433
24	717	572	e500	e320	e400	751	730	1,110	546	497	321	423
25	724	538	e480	e320	e400	731	697	1,070	536	504	309	409
26	727	e520	e490	e320	e400	729	683	1,020	543	486	326	416
27	718	e500	e500	e330	e400	726	706	979	523	442	323	420
28	712	e490	e510	e330	e400	739	670	933	509	425	333	387
29	681	e490	e490	e340	---	759	640	894	502	422	316	394
30	678	e450	e500	e340	---	793	618	900	505	421	308	391
31	685	---	e500	e350	---	804	---	855	---	403	313	---
TOTAL	20,894	17,974	16,220	12,260	10,420	18,527	20,987	29,542	20,540	15,831	11,398	10,964
MEAN	674	599	523	395	372	598	700	953	685	511	368	365
MAX	890	693	580	550	400	804	791	1,220	882	587	420	442
MIN	498	450	480	300	340	410	581	616	502	403	308	284
CFSM	0.70	0.62	0.54	0.41	0.39	0.62	0.73	0.99	0.71	0.53	0.38	0.38
IN.	0.81	0.70	0.63	0.47	0.40	0.72	0.81	1.14	0.79	0.61	0.44	0.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	733	643	697	529	563	863	946	1,097	861	714	457	544
MAX	791	687	870	662	754	1,129	1,192	1,241	1,038	1,031	581	793
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2001)	(2001)	(2001)
MIN	674	599	523	395	372	598	700	953	685	511	368	365
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 2001 - 2003
ANNUAL TOTAL	282,977	205,557	
ANNUAL MEAN	775	563	693
HIGHEST ANNUAL MEAN			822
LOWEST ANNUAL MEAN			563
HIGHEST DAILY MEAN	1,530	1,220	1,800
LOWEST DAILY MEAN	362	284	284
ANNUAL SEVEN-DAY MINIMUM	389	293	293
MAXIMUM PEAK FLOW		1,240	1,540
MAXIMUM PEAK STAGE		6.43	7.32
INSTANTANEOUS LOW FLOW		272	272
ANNUAL RUNOFF (CFSM)	0.81	0.59	0.72
ANNUAL RUNOFF (INCHES)	10.94	7.95	9.78
10 PERCENT EXCEEDS	1,190	781	1,140
50 PERCENT EXCEEDS	654	538	646
90 PERCENT EXCEEDS	439	340	390

(e) Estimated due to ice effect or missing record

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.39	0.39	0.21	e0.10	e0.02	e0.01	0.21	0.29	2.7	1.6	1.1	0.32
2	0.47	0.38	0.21	e0.08	e0.03	e0.01	0.20	0.21	2.7	1.5	0.87	0.29
3	0.41	0.38	0.18	e0.07	e0.04	e0.01	0.20	0.20	2.6	1.5	1.1	0.29
4	0.93	0.35	e0.19	e0.07	e0.02	e0.01	0.20	0.20	2.5	1.5	1.5	0.28
5	0.59	0.34	e0.19	e0.07	e0.01	e0.01	0.20	0.39	2.4	1.4	1.3	0.27
6	0.59	0.34	e0.18	e0.08	e0.01	e0.01	0.19	0.26	2.4	1.9	1.1	0.26
7	0.56	0.32	e0.18	e0.10	e0.01	e0.01	0.18	0.35	2.4	1.9	1.0	0.26
8	0.50	0.30	e0.19	e0.10	e0.01	e0.01	0.18	0.28	2.7	1.7	0.93	0.26
9	0.43	0.30	e0.18	e0.10	e0.01	e0.01	0.18	0.57	2.7	1.5	0.86	0.25
10	0.46	0.30	e0.19	e0.08	e0.01	e0.01	0.19	1.4	3.1	2.0	0.83	0.25
11	0.42	0.31	0.23	e0.05	e0.01	e0.02	0.20	4.3	2.6	1.6	0.79	0.25
12	0.43	0.30	0.19	e0.03	e0.01	e0.03	0.19	4.1	2.4	1.5	0.74	0.28
13	0.45	0.30	0.18	e0.01	e0.01	e0.04	0.19	4.3	2.3	1.3	0.68	0.56
14	0.45	0.26	e0.16	e0.01	e0.01	e2.8	0.20	4.3	2.2	1.3	0.66	0.88
15	0.41	0.26	e0.14	e0.01	e0.01	7.9	0.21	4.2	2.2	1.4	0.61	0.49
16	0.43	0.28	e0.13	e0.01	e0.01	3.4	0.27	4.0	2.1	1.2	0.60	0.41
17	0.45	0.27	e0.13	e0.01	e0.02	1.6	0.23	4.0	2.1	1.2	0.55	0.37
18	0.56	0.27	e0.13	e0.01	e0.04	0.54	0.22	3.9	2.2	1.1	0.53	0.35
19	0.50	0.28	e0.13	e0.01	e0.06	0.29	0.26	3.9	2.1	1.1	0.51	0.34
20	0.44	0.25	e0.13	e0.01	e0.09	0.27	0.26	3.6	2.0	1.1	0.49	0.32
21	0.49	0.24	e0.11	e0.01	e0.10	0.26	0.25	3.5	1.9	1.1	0.48	0.29
22	0.45	0.24	e0.11	e0.01	e0.08	0.28	0.23	3.4	1.9	0.95	0.45	0.32
23	0.45	0.24	e0.10	e0.01	e0.06	0.24	0.22	3.2	1.8	0.94	0.43	0.29
24	0.46	0.24	e0.09	e0.01	e0.04	0.22	0.22	3.2	1.9	0.94	0.40	0.28
25	0.51	0.23	e0.09	e0.01	e0.03	0.20	0.21	3.0	2.0	0.92	0.45	0.27
26	0.44	0.22	e0.08	e0.01	e0.02	0.17	0.21	2.9	1.9	0.88	0.43	0.28
27	0.41	0.21	e0.07	e0.01	e0.01	0.20	0.20	2.8	1.7	0.85	0.40	0.30
28	0.41	0.21	e0.07	e0.01	e0.01	0.40	0.19	3.2	2.0	0.83	0.38	0.30
29	0.42	0.22	e0.07	e0.01	---	0.23	0.19	3.0	1.7	0.78	0.36	0.29
30	0.44	0.21	e0.08	e0.01	---	0.21	0.28	3.1	1.6	0.77	0.33	0.28
31	0.45	---	e0.10	e0.01	---	0.21	---	3.0	---	1.4	0.33	---
TOTAL	14.80	8.44	4.42	1.12	0.79	19.61	6.36	79.05	66.8	39.66	21.19	9.88
MEAN	0.48	0.28	0.14	0.036	0.028	0.63	0.21	2.55	2.23	1.28	0.68	0.33
MAX	0.93	0.39	0.23	0.10	0.10	7.9	0.28	4.3	3.1	2.0	1.5	0.88
MIN	0.39	0.21	0.07	0.01	0.01	0.01	0.18	0.20	1.6	0.77	0.33	0.25
CFSM	0.16	0.09	0.05	0.01	0.01	0.21	0.07	0.84	0.73	0.42	0.22	0.11
IN.	0.18	0.10	0.05	0.01	0.01	0.24	0.08	0.96	0.81	0.48	0.26	0.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2003, 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	
MEAN	2.69	2.84	2.38	1.63	3.05	6.44	6.97	4.76	4.46	3.19	2.28	2.90											
MAX	12.9	12.7	7.47	5.28	9.29	16.1	15.7	10.9	12.3	5.69	4.39	18.5											
(WY)	(1987)	(1986)	(1986)	(1983)	(1984)	(1986)	(1998)	(2001)	(2001)	(2001)	(1986)	(1986)											
MIN	0.31	0.28	0.14	0.036	0.028	0.63	0.21	1.96	1.29	1.28	0.68	0.33											
(WY)	(1999)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2000)	(1988)	(2003)	(2003)	(2003)											

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1982 - 2003	
ANNUAL TOTAL	700.36		272.12			
ANNUAL MEAN	1.92		0.75		3.78	
HIGHEST ANNUAL MEAN					7.94	
LOWEST ANNUAL MEAN					0.75	
HIGHEST DAILY MEAN	22	Mar 9	7.9	Mar 15	89	Sep 22, 1986
LOWEST DAILY MEAN	(a)0.07	Dec 27-29	(a)0.01	(b)Jan 13-31	(a)0.01	(b)Jan 13-31, 2003
ANNUAL SEVEN-DAY MINIMUM	(a)0.08	Dec 24	(a)0.01	(c)Jan 13	(a)0.01	(c)Jan 13, 2003
MAXIMUM PEAK FLOW			23		781	
MAXIMUM PEAK STAGE			4.79		10.14	
ANNUAL RUNOFF (CFSM)	0.63		0.24		1.24	
ANNUAL RUNOFF (INCHES)	8.54		3.32		16.85	
10 PERCENT EXCEEDS	4.2		2.3		9.0	
50 PERCENT EXCEEDS	1.1		0.29		2.4	
90 PERCENT EXCEEDS	0.23		0.01		0.38	

- (a) Ice affected
- (b) Also occurred Feb. 5-16 and Feb. 27 to Mar. 10
- (c) Also occurred additional days
- (e) Estimated due to ice effect or missing record





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

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.27	0.20	0.07	0.04	0.00	0.00	0.08	0.13	1.3	0.69	0.36	0.11
2	0.33	0.19	0.07	0.03	0.01	0.00	0.08	0.08	1.2	0.65	0.26	0.10
3	0.30	0.19	0.07	0.03	0.02	0.00	0.08	0.07	1.2	0.64	0.38	0.10
4	1.0	0.17	0.07	0.03	0.00	0.00	0.08	0.05	1.1	0.65	0.48	0.10
5	0.43	0.16	0.07	0.03	0.00	0.00	0.08	0.09	1.1	0.61	0.40	0.09
6	0.43	0.16	0.07	0.03	0.00	0.00	0.08	0.06	1.1	0.87	0.36	0.10
7	0.40	0.15	0.08	0.04	0.00	0.00	0.07	0.07	1.1	0.85	0.33	0.10
8	0.36	0.13	0.09	0.04	0.00	0.00	0.08	0.05	1.3	0.72	0.30	0.10
9	0.31	0.13	0.09	0.04	0.00	0.00	0.08	0.21	1.2	0.66	0.28	0.09
10	0.33	0.13	0.10	0.03	0.00	0.00	0.08	3.7	1.5	0.89	0.27	0.09
11	0.30	0.13	0.12	0.02	0.00	0.01	0.09	6.6	1.2	0.72	0.25	0.10
12	0.31	0.12	0.10	0.01	0.00	0.03	0.08	2.5	1.1	0.63	0.24	0.12
13	0.32	0.12	0.11	0.00	0.00	0.07	0.08	2.0	1.1	0.58	0.22	0.24
14	0.32	0.10	0.10	0.00	0.00	17	0.08	1.9	1.0	0.56	0.22	0.38
15	0.29	0.10	0.09	0.00	0.00	83	0.09	1.9	0.98	0.62	0.20	0.20
16	0.31	0.10	0.09	0.00	0.00	16	0.11	1.8	0.93	0.51	0.20	0.16
17	0.31	0.10	0.09	0.00	0.00	5.2	0.08	1.8	0.92	0.47	0.18	0.14
18	0.38	0.10	0.10	0.00	0.02	0.97	0.07	1.7	0.98	0.42	0.18	0.14
19	0.33	0.10	0.10	0.00	0.02	0.35	0.07	1.7	0.93	0.40	0.17	0.13
20	0.29	0.09	0.09	0.00	0.03	0.23	0.07	1.6	0.86	0.39	0.16	0.12
21	0.31	0.08	0.07	0.00	0.04	0.16	0.06	1.6	0.84	0.38	0.16	0.11
22	0.28	0.08	0.07	0.00	0.03	0.14	0.05	1.5	0.82	0.33	0.15	0.12
23	0.28	0.08	0.06	0.00	0.02	0.11	0.05	1.4	0.79	0.32	0.14	0.11
24	0.28	0.08	0.05	0.00	0.02	0.10	0.05	1.4	0.83	0.31	0.13	0.11
25	0.30	0.07	0.05	0.00	0.01	0.08	0.05	1.4	0.89	0.29	0.15	0.11
26	0.26	0.07	0.04	0.00	0.00	0.07	0.05	1.3	0.82	0.27	0.14	0.11
27	0.24	0.06	0.04	0.00	0.00	0.12	0.05	1.3	0.76	0.26	0.13	0.12
28	0.23	0.06	0.03	0.00	0.00	0.43	0.05	1.5	0.86	0.25	0.13	0.12
29	0.23	0.07	0.03	0.00	---	0.12	0.04	1.4	0.76	0.22	0.12	0.11
30	0.24	0.06	0.04	0.00	---	0.08	0.11	1.5	0.70	0.21	0.11	0.10
31	0.24	---	0.04	0.00	---	0.08	---	1.4	---	0.52	0.11	---
TOTAL	10.21	3.38	2.29	0.37	0.22	124.35	2.17	43.71	30.17	15.89	6.91	3.83
MEAN	0.33	0.11	0.07	0.01	0.00	4.0	0.07	1.4	1.0	0.51	0.22	0.13
MAX	1.0	0.20	0.12	0.04	0.04	83	0.11	6.6	1.5	0.89	0.48	0.38
MIN	0.23	0.06	0.03	0.00	0.00	0.00	0.04	0.05	0.70	0.21	0.11	0.09

WTR YR 2003 TOTAL 243.50

## STREAMS TRIBUTARY TO LAKE MICHIGAN

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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 concen- tration mg/L (80154)
OCT 2002						
04...	0955	--	1.5	50	0.258	89
16...	1240	--	0.45	50	0.132	7
NOV						
29...	1552	--	0.22	50	0.054	62
DEC						
18...	1540	0.13	--	50	0.141	18
JAN 2003						
03...	1317	0.07	--	50	0.069	14
MAR						
14...	1030	2.8	--	50	0.553	13
14...	1520	2.8	--	50	1.70	92
14...	2005	2.8	--	50	2.12	187
15...	0110	--	5.7	50	1.64	74
15...	1245	--	11	50	1.91	328
15...	1400	--	19	50	2.50	491
15...	1930	--	10	50	1.74	108
16...	0025	--	4.2	50	1.32	53
16...	1225	--	3.7	50	0.770	39
17...	0030	--	2.2	50	0.760	22
18...	1322	--	0.42	50	0.300	6
28...	1015	--	0.88	50	0.240	14
APR						
16...	0925	--	0.34	50	0.080	6
19...	1855	--	0.34	50	0.047	3
22...	1400	--	0.24	10	0.042	30
30...	2130	--	0.38	50	0.090	11
MAY						
05...	0810	--	0.50	50	0.045	4
08...	2255	--	0.25	50	0.034	4
09...	0545	--	1.4	50	0.078	12
09...	0730	--	0.99	50	0.096	2
09...	1525	--	0.41	50	0.053	3
10...	1525	--	0.34	50	0.042	1
10...	2125	--	2.6	50	0.425	274
10...	2150	--	10	50	0.654	530
11...	0240	--	4.2	50	0.546	241
11...	1440	--	3.9	50	0.143	23
13...	1700	--	4.2	50	0.082	11
28...	1530	--	4.9	50	0.093	23
JUL						
10...	1115	--	2.2	10	0.092	38
31...	1135	--	0.79	10	0.050	8
31...	1136	--	0.79	50	0.070	20
SEP						
10...	1100	--	0.25	10	0.071	18

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

LOCATION.--Lat 43°49'28", long 88°55'36", in NE ¼ SE ¼ SE ¼ 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.--Nortek Easy-Q doppler velocity meter installed Aug. 16, 2000. Acoustical Velocity Meter (AVM) installed on June 6, 1990 and used to Aug. 3, 2000. Datum of gage is 790.00 ft above NGVD of 1929 (from Wisconsin Department of Natural Resources benchmark).

REMARKS.--Records fair (see page 11). Flows fluctuate due to seiche from Green Lake. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	6.8	4.9	7.4	4.6	5.0	28	44	55	11	39	5.6
2	24	23	12	6.8	5.2	4.2	25	24	40	11	10	4.1
3	17	12	8.6	8.2	6.5	4.0	16	26	34	13	26	6.6
4	23	18	4.0	8.5	2.3	6.0	11	19	31	6.5	104	6.5
5	60	11	-1.7	4.8	3.2	4.1	14	44	26	7.2	47	3.0
6	30	15	3.0	3.5	3.2	5.8	26	43	23	9.1	21	6.4
7	39	15	0.86	1.9	5.3	5.0	15	48	28	13	25	6.0
8	28	19	4.0	0.41	2.9	7.9	15	48	23	16	18	6.2
9	23	15	-0.07	3.5	3.0	2.8	22	67	25	15	16	6.8
10	23	16	2.2	-7.1	3.4	2.6	23	63	48	18	16	7.2
11	22	11	4.3	6.6	3.8	3.2	26	193	47	25	17	6.6
12	18	13	5.7	4.9	4.0	6.0	25	168	37	14	12	2.1
13	18	13	6.3	7.0	2.9	4.7	20	135	28	13	18	16
14	18	21	5.1	2.8	4.4	6.7	24	120	29	11	12	49
15	23	14	9.1	3.3	2.9	28	38	93	26	8.5	10	38
16	14	16	13	4.5	2.2	41	28	75	22	10	14	17
17	15	13	15	3.3	3.4	47	20	60	20	16	19	17
18	8.9	9.3	12	1.9	4.4	44	25	52	16	7.1	13	8.3
19	21	17	21	4.3	4.0	30	17	42	24	9.2	10	1.8
20	20	16	12	3.8	3.4	26	31	49	16	8.7	3.1	11
21	16	15	8.9	1.7	6.1	21	40	45	15	20	13	9.8
22	26	12	0.40	0.64	9.0	32	32	39	12	8.6	6.7	-0.47
23	19	9.8	9.5	0.54	6.1	26	27	35	12	14	9.8	10
24	23	14	9.6	3.0	5.3	22	24	35	7.3	7.5	5.9	-3.2
25	22	8.6	-1.4	0.48	4.8	21	27	33	5.4	6.9	1.9	13
26	20	11	3.4	0.25	3.9	20	16	29	8.4	8.4	9.2	3.4
27	23	6.1	2.0	1.9	4.2	25	21	27	21	12	11	4.4
28	24	10	6.0	1.9	5.4	39	21	27	21	12	2.1	7.2
29	22	8.8	8.8	1.9	---	47	20	36	16	5.9	12	0.96
30	17	7.6	0.94	2.3	---	33	20	43	12	9.7	2.8	3.1
31	9.3	---	5.2	2.2	---	22	---	103	---	22	6.2	---
TOTAL	684.2	397.0	194.63	97.12	119.8	592.0	697	1,865	728.1	369.3	530.7	273.39
MEAN	22.1	13.2	6.28	3.13	4.28	19.1	23.2	60.2	24.3	11.9	17.1	9.11
MAX	60	23	21	8.5	9.0	47	40	193	55	25	104	49
MIN	8.9	6.1	-1.7	-7.1	2.2	2.6	11	19	5.4	5.9	1.9	-3.2
CFSM	0.41	0.25	0.12	0.06	0.08	0.36	0.43	1.12	0.45	0.22	0.32	0.17
IN.	0.48	0.28	0.14	0.07	0.08	0.41	0.48	1.30	0.51	0.26	0.37	0.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2003, BY WATER YEAR (WY)

	MEAN	21.4	25.8	20.6	15.6	25.2	63.0	65.3	45.1	47.2	34.2	24.3	21.2
MAX	64.1	71.3	47.5	46.1	60.7	107	185	112	156	190	67.5	57.4	
(WY)	(1996)	(1996)	(1993)	(1996)	(1996)	(1997)	(1993)	(2001)	(1993)	(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 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1987 - 2003

ANNUAL TOTAL	13,079.73		6,548.24		
ANNUAL MEAN	35.8		17.9		34.6
HIGHEST ANNUAL MEAN					79.9
LOWEST ANNUAL MEAN					17.9
HIGHEST DAILY MEAN	253	Jun 22	193	May 11	705
LOWEST DAILY MEAN	-1.7	Dec 5	-7.1	Jan 10	-7.1
ANNUAL SEVEN-DAY MINIMUM	1.8	Dec 4	1.2	Jan 21	1.2
ANNUAL RUNOFF (CFSM)	0.67		0.34		0.65
ANNUAL RUNOFF (INCHES)	9.09		4.55		8.79
10 PERCENT EXCEEDS	79		39		75
50 PERCENT EXCEEDS	23		13		22
90 PERCENT EXCEEDS	9.2		2.9		7.5

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 to poor. Phosphorus analyses by the Wisconsin State Laboratory of Hygiene. Problems with automatic sampler intake required rejection of many analyses. 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 30, 1989; 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, 701 mg/L, May 11; minimum observed, 16 mg/L, Feb. 5.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 271 tons, May 11; minimum daily, -0.54 tons, Jan. 10.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.236 mg/L, July 31; minimum observed, 0.060 mg/L, Dec. 18.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 198 lb, May 11; minimum daily, -2.5 lb, Jan. 10.

SUSPENDED SEDIMENT LOAD, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.95	0.49	e0.25	e0.40	0.22	e0.26	e2.3	e4.5	5.7	0.89	3.6	0.48
2	1.3	1.7	e0.71	e0.37	0.24	e0.21	e2.0	e1.9	4.0	0.85	0.96	0.36
3	0.90	1.0	e0.48	e0.46	0.29	e0.20	e1.1	e2.1	3.3	1.0	2.4	0.57
4	1.6	1.6	e0.20	e0.48	0.10	e0.32	e0.63	e1.3	2.9	0.50	10	0.56
5	8.0	1.0	e-0.10	e0.24	0.14	e0.21	e0.92	e4.5	2.4	0.54	5.0	0.26
6	4.0	1.4	e0.15	e0.17	0.14	e0.30	e2.0	e4.4	2.3	0.68	2.3	0.55
7	5.1	e0.93	e0.00	e0.10	0.24	e0.25	e0.94	e5.2	2.7	0.96	2.8	0.52
8	3.6	e1.3	e0.20	e0.00	0.14	e0.43	e0.96	e5.1	2.3	1.1	1.9	0.54
9	3.0	e0.99	e0.00	e0.17	0.14	e0.14	e1.6	e8.8	2.6	1.1	1.7	0.59
10	2.7	e1.0	e0.11	e-0.25	0.16	e0.12	e1.8	e7.9	5.0	1.3	1.7	0.62
11	2.4	e0.62	e0.22	e0.35	e0.19	e0.16	e2.1	e25	5.0	1.7	1.8	0.57
12	1.8	e0.80	e0.30	e0.25	e0.20	e0.32	e1.9	e22	3.9	0.95	1.3	0.18
13	1.7	e0.78	e0.34	e0.38	e0.14	e0.24	e1.4	e18	3.0	0.88	1.8	1.4
14	1.5	e1.5	e0.26	e0.14	e0.22	e0.36	e1.8	e16	3.0	0.75	1.1	4.2
15	1.8	e0.92	e0.52	e0.16	e0.14	e2.2	e3.6	e12	2.7	0.55	0.98	3.3
16	1.1	e1.0	e0.78	e0.23	e0.11	e4.1	e2.2	e9.8	2.2	0.64	1.3	1.5
17	1.1	e0.79	e0.97	e0.16	e0.17	e5.0	e1.4	e7.3	2.0	1.0	1.7	1.5
18	0.64	e0.53	e0.75	e0.10	e0.22	e4.5	e1.9	e5.9	1.5	0.45	1.2	0.72
19	1.5	e1.1	e1.5	e0.22	e0.20	e2.6	e1.1	e4.2	2.3	0.60	0.88	0.16
20	1.4	e1.0	e0.69	e0.19	e0.17	e2.1	e2.7	e5.3	1.5	0.59	0.27	0.92
21	1.1	e0.97	e0.50	e0.10	e0.32	e1.5	e3.9	e4.6	1.4	1.4	1.1	0.85
22	1.8	e0.73	e0.00	e0.00	e0.51	e2.8	e2.8	e3.7	1.1	0.62	0.58	-0.04
23	1.3	e0.57	e0.54	e0.00	e0.32	e2.1	e2.2	e3.2	1.1	1.0	0.84	0.86
24	1.6	e0.84	e0.55	e0.15	e0.28	e1.6	e1.9	e3.1	0.65	0.57	0.51	-0.27
25	1.5	e0.48	e-0.10	e0.00	e0.24	e1.5	e2.1	e2.9	0.48	0.54	0.17	1.1
26	1.4	e0.62	e0.17	e0.00	e0.19	e1.4	e1.1	e2.4	0.72	0.67	0.79	0.30
27	1.6	e0.32	e0.10	e0.10	e0.21	e1.9	e1.6	e2.1	1.7	0.97	0.92	0.38
28	1.6	e0.58	e0.32	e0.10	e0.28	e3.7	e1.5	2.9	1.8	1.0	0.19	0.62
29	1.5	e0.50	e0.50	e0.10	---	e5.0	e1.5	3.9	1.3	0.52	1.0	0.09
30	1.1	e0.42	e0.00	e0.11	---	e2.9	e1.4	4.6	1.0	0.86	0.25	0.26
31	0.64	---	e0.27	e0.11	---	e1.6	---	11	---	2.0	0.53	---
TOTAL	61.23	26.48	11.18	5.09	5.92	50.02	54.35	215.6	71.55	27.18	51.57	23.65
WTR YR	2003	TOTAL	603.82									

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 2002 TO SEPTEMBER 2003

Date	Time	Discharge, cfs (00060)	Sampling method, code (82398)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
OCT					
02...	1215	24	50	0.091	20
04...	1100	23	50	0.072	19
04...	2300	23	50	0.108	50
06...	1830	30	50	0.174	--
09...	1230	23	50	0.078	47
16...	1315	14	50	0.076	27
30...	1215	17	50	0.062	24
NOV					
03...	1245	13	50	0.064	--
27...	1345	6.1	50	0.062	--
DEC					
11...	1745	4.3	50	0.083	--
18...	1215	12	50	0.060	--
FEB					
05...	1215	3.2	10	0.070	16
15...	1245	2.9	50	0.080	--
MAR					
03...	1100	4.0	50	0.072	--
25...	1215	21	50	0.118	--
27...	1645	25	50	0.138	38
APR					
01...	1215	28	50	0.122	31
14...	1930	24	50	0.157	--
18...	2015	25	50	0.109	--
MAY					
09...	1615	67	50	0.172	--
10...	2045	63	50	0.169	--
13...	0845	135	50	0.172	--
14...	1300	120	50	0.155	--
21...	1300	45	50	0.159	--
28...	1300	27	50	0.130	44
31...	0630	103	50	0.146	40
JUN					
04...	1330	31	50	0.112	34
11...	1300	47	50	0.085	40
18...	1300	16	50	0.147	36
JUL					
10...	1140	18	50	0.173	26
17...	1500	16	50	0.148	23
31...	1200	22	50	0.236	34
AUG					
03...	1645	26	50	--	34
06...	1300	21	50	0.224	42
20...	1300	3.1	50	0.162	32

## 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 poor (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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	18	12	12	16	22	16	44	55	58	27	9.3
2	17	17	11	12	16	22	13	43	56	56	26	9.1
3	17	17	11	12	16	22	13	41	56	55	25	9.0
4	27	17	11	12	16	22	15	38	57	46	25	7.9
5	24	18	11	13	15	22	19	44	56	35	25	7.6
6	25	18	11	14	16	22	19	45	52	38	25	7.4
7	22	18	11	17	16	22	18	50	53	43	25	7.3
8	23	18	11	17	16	23	19	70	55	44	26	7.1
9	21	18	11	17	e15	23	21	126	55	44	25	7.9
10	22	18	11	17	e15	23	20	149	61	44	26	13
11	23	18	11	17	e15	23	20	241	57	45	25	14
12	23	18	11	17	e14	23	22	278	55	43	24	14
13	23	16	11	16	e14	23	25	283	56	44	22	17
14	23	16	11	16	e15	24	24	268	56	45	20	26
15	19	15	11	16	e15	26	23	249	56	51	21	24
16	17	16	11	16	e15	25	22	213	57	54	21	25
17	17	16	11	16	e15	24	25	172	56	52	20	21
18	18	17	11	16	18	24	25	165	57	50	20	19
19	17	16	11	15	18	23	28	152	61	47	21	17
20	16	16	11	15	20	24	33	153	60	44	21	15
21	17	15	9.9	15	21	26	31	150	60	44	20	21
22	16	16	9.5	15	22	27	45	141	59	45	16	20
23	16	16	9.1	15	22	23	59	135	59	42	11	19
24	16	14	9.3	15	22	15	53	130	60	43	8.0	18
25	17	14	9.7	14	21	13	48	124	62	38	7.0	16
26	18	13	10	14	21	11	47	119	65	30	6.1	15
27	18	13	12	14	21	12	37	97	62	28	6.2	14
28	18	13	12	14	22	16	32	58	60	27	7.1	12
29	17	13	12	15	---	15	33	53	60	28	8.0	14
30	18	12	12	15	---	15	38	58	59	28	8.2	15
31	18	---	12	16	---	17	---	57	---	27	8.8	---
TOTAL	598	480	338.5	465	488	652	843	3,946	1,733	1,318	576.4	441.6
MEAN	19.3	16.0	10.9	15.0	17.4	21.0	28.1	127	57.8	42.5	18.6	14.7
MAX	27	18	12	17	22	27	59	283	65	58	27	26
MIN	15	12	9.1	12	14	11	13	38	52	27	6.1	7.1
CFSM	0.18	0.15	0.10	0.14	0.17	0.20	0.27	1.21	0.55	0.40	0.18	0.14
IN.	0.21	0.17	0.12	0.16	0.17	0.23	0.30	1.40	0.61	0.47	0.20	0.16

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

MEAN	23.3	16.1	19.2	22.9	36.6	70.3	137	124	113	71.1	41.2	37.7
MAX	44.2	30.5	51.0	36.6	56.0	184	256	214	240	136	72.4	103
(WY)	(2001)	(2001)	(2002)	(1997)	(1997)	(1997)	(2001)	(2001)	(2001)	(1999)	(1999)	(2000)
MIN	6.99	6.60	10.4	11.6	15.0	21.0	28.1	89.5	57.8	42.5	18.6	13.7
(WY)	(1999)	(1999)	(1999)	(2000)	(2000)	(2003)	(2003)	(2000)	(2003)	(2003)	(2003)	(1998)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1997 - 2003

ANNUAL TOTAL	20,573.5	11,879.5		
ANNUAL MEAN	56.4	32.5	57.9	
HIGHEST ANNUAL MEAN			91.3	2001
LOWEST ANNUAL MEAN			32.5	2003
HIGHEST DAILY MEAN	183	May 15	423	Apr 12, 2001
LOWEST DAILY MEAN	9.1	Dec 23	2.8	Nov 8, 1998
ANNUAL SEVEN-DAY MINIMUM	9.8	Dec 20	3.3	Nov 3, 1998
MAXIMUM PEAK FLOW			321	(a)498 Apr 12, 2001
MAXIMUM PEAK STAGE			5.20	May 11 (b)5.60 Apr 2, 1998
ANNUAL RUNOFF (CFSM)	0.54		0.31	0.55
ANNUAL RUNOFF (INCHES)	7.29		4.21	7.50
10 PERCENT EXCEEDS	135		58	141
50 PERCENT EXCEEDS	32		20	34
90 PERCENT EXCEEDS	14		11	12

(a) Gage height, 5.48 ft

(b) Discharge, 423 ft<sup>3</sup>/s

(c) Estimated due to ice effect or missing record

STREAMS TRIBUTARY TO LAKE MICHIGAN

04073500 FOX RIVER AT BERLIN, WI

LOCATION.--Lat 43°57'14", long 88°57'08", in 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	731	959	e540	e650	e450	e510	1,180	999	1,510	753	515	366
2	715	954	e540	e550	e470	e520	1,160	1,020	1,510	728	511	360
3	711	942	e560	e570	e480	e530	1,070	998	1,440	698	529	365
4	780	928	e620	e620	e470	e530	1,040	992	1,350	686	525	344
5	924	896	e700	e660	e420	e530	990	1,020	1,240	666	527	322
6	967	880	e760	e680	e430	e540	1,010	1,090	1,160	659	536	342
7	983	901	e760	e700	e440	e570	1,060	1,170	1,130	706	547	351
8	968	925	e760	e730	e440	e600	992	1,220	1,130	768	531	341
9	946	912	e760	e740	e440	e610	1,010	1,300	1,150	763	516	337
10	924	903	e740	e650	e460	e600	1,070	1,400	1,210	755	515	343
11	933	879	e740	e370	e460	e600	1,090	1,610	1,300	791	507	358
12	938	861	e770	e420	e460	e640	1,090	1,810	1,340	797	485	378
13	931	871	e800	e450	e460	e680	1,050	1,910	1,350	795	483	426
14	923	874	e810	e470	e470	e750	1,060	1,960	1,340	788	486	537
15	919	858	e830	e450	e470	e800	1,070	2,000	1,310	795	482	573
16	866	827	e820	e440	e470	e900	1,070	2,030	1,240	789	479	606
17	854	806	e800	e430	e470	e1,000	976	2,050	1,160	814	452	610
18	998	803	e840	e430	e470	e1,100	1,000	2,050	1,090	791	446	604
19	1,090	825	e880	e420	e480	e1,200	1,060	2,030	1,060	767	442	564
20	1,090	841	e870	e420	e480	e1,300	1,120	2,010	1,020	770	432	541
21	1,080	836	e780	e410	e500	1,310	1,190	1,960	982	756	434	539
22	1,060	792	e680	e400	e510	1,200	1,180	1,900	928	699	402	551
23	1,030	797	e700	e400	e500	1,170	1,170	1,850	876	668	384	547
24	1,010	819	e680	e400	e500	1,150	1,170	1,790	839	651	373	539
25	1,020	794	e670	e390	e510	1,110	1,150	1,730	814	648	381	526
26	1,040	e690	e680	e380	e510	1,090	1,100	1,660	804	649	384	515
27	1,040	e620	e700	e370	e510	1,080	1,060	1,580	798	614	390	519
28	1,030	e590	e710	e380	e510	1,110	1,060	1,510	777	556	381	513
29	1,010	e660	e680	e400	---	1,190	1,000	1,450	780	534	401	490
30	973	e750	e700	e410	---	1,210	983	1,400	759	527	364	498
31	962	---	e700	e440	---	1,200	---	1,470	---	523	371	---
TOTAL	29,446	24,993	22,580	15,230	13,240	27,330	32,231	48,969	33,397	21,904	14,211	13,905
MEAN	950	833	728	491	473	882	1,074	1,580	1,113	707	458	464
MAX	1,090	959	880	740	510	1,310	1,190	2,050	1,510	814	547	610
MIN	711	590	540	370	420	510	976	992	759	523	364	322
CFSM	0.71	0.62	0.54	0.37	0.35	0.66	0.80	1.18	0.83	0.53	0.34	0.35
IN.	0.82	0.69	0.63	0.42	0.37	0.76	0.89	1.36	0.93	0.61	0.39	0.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)
	981	3,819	(1987)	347	(1959)	1,071	2,463	(1986)	380	(1977)	896	1,871	(1986)	369	(1977)
	697	1,631	(1939)	311	(1959)	767	1,803	(1966)	318	(1959)	1,744	4,272	(1973)	495	(1964)
	2,208	4,225	(1979)	667	(1902)	1,477	3,801	(1973)	600	(1934)	1,207	4,230	(1905)	367	(1988)
	929	4,072	(1993)	384	(1988)	799	2,540	(1993)	346	(1958)	890	3,491	(1938)	364	(1958)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1898 - 2003	
ANNUAL TOTAL	420,910		297,436			
ANNUAL MEAN	1,153		815		1,142	
HIGHEST ANNUAL MEAN					2,203	
LOWEST ANNUAL MEAN					559	
HIGHEST DAILY MEAN	2,420	Jun 28	2,050	May 17	6,900	Mar 17, 1946
LOWEST DAILY MEAN	488	Aug 20	322	Sep 5	217	Jun 27, 1988
ANNUAL SEVEN-DAY MINIMUM	527	Aug 15	340	Sep 4	(a)266	Jan 30, 1900
MAXIMUM PEAK FLOW			2,060	May 17	6,900	Mar 17, 1946
MAXIMUM PEAK STAGE			11.28	May 17	15.50	Mar 17, 1946
INSTANTANEOUS LOW FLOW			310	Sep 5	210	Jun 27, 1988
ANNUAL RUNOFF (CFSM)	0.86		0.61		0.85	
ANNUAL RUNOFF (INCHES)	11.68		8.26		11.58	
10 PERCENT EXCEEDS	1,930		1,230		2,170	
50 PERCENT EXCEEDS	937		760		876	
90 PERCENT EXCEEDS	620		420		502	

(a) Ice affected

(e) Estimated due to ice effect or missing record



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 and 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	31	e17	e14	e13	e18	e20	39	32	19	29	15
2	29	30	e16	e14	e13	e19	e24	37	30	19	27	15
3	26	29	e16	e14	e13	e19	e22	35	29	19	37	14
4	48	29	e16	e14	e13	e19	e22	31	27	18	35	15
5	84	29	e16	e14	e12	e19	e24	34	27	18	27	14
6	78	30	e16	e14	e12	e19	e23	52	27	17	25	14
7	72	29	e16	e14	e12	e19	e24	51	40	17	24	14
8	59	30	e16	e14	e12	e20	25	49	48	16	22	14
9	49	30	e15	e14	e12	e20	25	48	69	16	21	14
10	42	34	e16	e14	e12	e20	32	54	65	17	20	15
11	42	38	e18	e13	e12	e20	51	68	70	19	23	14
12	42	33	e18	e13	e12	e20	65	99	54	17	21	16
13	44	31	e18	e12	e12	e20	54	81	44	16	19	26
14	40	30	e17	e12	e12	e20	53	57	39	15	19	32
15	37	28	e17	e12	e12	e20	59	49	35	17	19	31
16	34	27	e17	e12	e12	e24	102	45	32	15	18	24
17	33	24	e17	e12	e12	e31	141	43	30	14	17	21
18	33	25	e18	e12	e13	e39	95	42	29	14	17	19
19	40	26	e19	e12	e14	e37	76	40	27	13	18	17
20	39	25	e18	e12	e15	e30	103	49	25	13	20	17
21	36	23	e18	e11	e15	e28	115	46	24	19	21	16
22	38	19	e17	e11	e15	e32	84	41	23	18	19	29
23	39	e19	e16	e11	e15	e33	61	38	23	16	21	e30
24	38	e19	e16	e11	e15	e26	53	35	24	15	21	e33
25	38	e18	e15	e11	e15	e22	49	33	25	14	20	34
26	42	e17	e15	e11	e15	e18	47	33	23	58	19	27
27	43	e17	e15	e11	e16	e16	45	32	22	78	17	28
28	40	e17	e15	e12	e18	e16	44	32	21	44	17	26
29	36	e18	e16	e13	---	e16	43	34	21	30	18	23
30	34	e18	e15	e13	---	e16	40	34	20	25	17	22
31	33	---	e15	e13	---	e18	---	36	---	27	16	---
TOTAL	1,322	773	510	390	374	694	1,621	1,397	1,005	673	664	629
MEAN	42.6	25.8	16.5	12.6	13.4	22.4	54.0	45.1	33.5	21.7	21.4	21.0
MAX	84	38	19	14	18	39	141	99	70	78	37	34
MIN	26	17	15	11	12	16	20	31	20	13	16	14
CFSM	0.92	0.56	0.36	0.27	0.29	0.48	1.17	0.97	0.72	0.47	0.46	0.45
IN.	1.06	0.62	0.41	0.31	0.30	0.56	1.30	1.12	0.81	0.54	0.53	0.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, 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
MEAN	33.3	29.0	24.8	21.6	20.6	30.5	60.3	46.6	40.3	31.3	23.4	27.5															
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	14.3	12.6	13.4	18.3	47.3	31.0	22.6	18.2	14.3	13.2															
(WY)	(2002)	(1982)	(1982)	(2003)	(2003)	(1978)	(1980)	(1980)	(1982)	(2001)	(1981)	(1981)															

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1977 - 2003	
ANNUAL TOTAL	12,522		10,052			
ANNUAL MEAN	34.3		27.5		32.4	
HIGHEST ANNUAL MEAN					38.5 1986	
LOWEST ANNUAL MEAN					24.8 1982	
HIGHEST DAILY MEAN	162	Apr 14	141	Apr 17	212	Jun 15, 1981
LOWEST DAILY MEAN	14	Aug 20	(a)11	Jan 21-27	8.3	Aug 25, 1977
ANNUAL SEVEN-DAY MINIMUM	(a)15	Dec 25	(a)11	Jan 21	9.2	Aug 13, 1982
MAXIMUM PEAK FLOW			163	Apr 17	228	Jun 15, 1981
MAXIMUM PEAK STAGE			3.06	Apr 17	(b)3.82	Jun 15, 1981
INSTANTANEOUS LOW FLOW			(a)		6.8	Aug 25, 1977
ANNUAL RUNOFF (CFSM)	0.74		0.59		0.70	
ANNUAL RUNOFF (INCHES)	10.06		8.08		9.51	
10 PERCENT EXCEEDS	62		48		55	
50 PERCENT EXCEEDS	27		21		27	
90 PERCENT EXCEEDS	17		13		16	

- (a) Ice affected
- (b) Site and datum then in use
- (c) Estimated due to ice effect or missing record

STREAMS TRIBUTARY TO LAKE MICHIGAN

04074548 SWAMP CREEK BELOW RICE LAKE AT MOLE LAKE, WI

LOCATION.--Lat 45°28'46", long 88°59'52", in NE ¼ NW ¼ 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. 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	51	e32	e38	e31	e26	e32	54	42	30	68	46
2	54	49	e30	e38	e31	e25	e39	50	41	30	65	44
3	50	47	e28	e38	e29	e25	e48	47	39	30	68	44
4	65	46	e26	e38	e27	e23	e66	45	37	29	70	44
5	97	46	e26	e39	e26	e23	e60	49	35	27	67	43
6	120	47	e26	e40	e26	e25	56	58	36	26	62	42
7	129	47	e26	e40	e26	e25	46	66	44	25	60	43
8	126	49	e26	e41	e26	e24	44	66	55	25	57	43
9	114	50	e28	e40	e26	e26	36	65	72	24	54	44
10	99	53	e30	e39	e26	e26	40	69	86	25	52	45
11	83	58	e30	e39	e25	e24	73	86	93	27	56	44
12	74	57	e32	e37	e25	e26	114	115	83	27	54	46
13	69	55	e34	e36	e25	e28	126	119	65	25	53	54
14	65	52	e34	e35	e24	e31	118	98	54	23	51	62
15	60	47	e32	e35	e25	e33	125	76	46	25	50	65
16	53	42	e30	e33	e25	e40	158	63	42	25	50	62
17	49	41	e30	e32	e26	e49	193	57	39	25	48	57
18	49	35	e34	e31	e26	e58	200	54	38	24	47	53
19	52	37	e39	e30	e28	e67	191	53	36	23	47	49
20	57	37	e39	e29	e28	e63	191	59	33	23	50	46
21	59	37	e38	e29	e28	e54	202	60	33	28	52	45
22	60	34	e36	e28	e27	e48	196	56	32	30	52	50
23	59	30	e37	e28	e26	e51	177	52	32	30	52	55
24	58	e31	e35	e28	e24	e54	156	49	34	28	54	59
25	60	e31	e34	e28	e24	e44	139	45	36	26	55	63
26	63	e29	e35	e28	e25	e31	122	43	34	65	54	62
27	67	e27	e36	e28	e26	e26	107	42	34	108	52	61
28	68	e27	e36	e29	e26	e35	89	44	34	108	50	59
29	63	e28	e38	e30	---	e41	60	46	33	91	51	55
30	59	e32	e38	e31	---	e33	56	47	32	76	48	51
31	54	---	e40	e31	---	e30	---	48	---	70	47	---
TOTAL	2,191	1,252	1,015	1,046	737	1,114	3,260	1,881	1,350	1,178	1,696	1,536
MEAN	70.7	41.7	32.7	33.7	26.3	35.9	109	60.7	45.0	38.0	54.7	51.2
MAX	129	58	40	41	31	67	202	119	93	108	70	65
MIN	49	27	26	28	24	23	32	42	32	23	47	42
CFSM	1.24	0.73	0.58	0.59	0.46	0.63	1.91	1.07	0.79	0.67	0.96	0.90
IN.	1.43	0.82	0.66	0.69	0.48	0.73	2.14	1.23	0.88	0.77	1.11	1.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

	2003	(1983)	(1985)	(1983)	(1984)	(1979)	(1979)	(1979)	(1978)	(1978)	(1977)	
MEAN	51.2	43.1	39.4	34.1	34.5	46.3	85.8	68.6	52.2	42.0	37.7	42.4
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	32.2	32.0	29.7	26.3	29.5	59.8	53.0	32.1	26.5	21.1	29.2
(WY)	(2002)	(2002)	(1979)	(2002)	(2003)	(1978)	(1984)	(1978)	(1982)	(2001)	(1982)	(2001)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1977 - 2003
ANNUAL TOTAL	18,310	18,256	
ANNUAL MEAN	50.2	50.0	49.5
HIGHEST ANNUAL MEAN			57.1
LOWEST ANNUAL MEAN			44.1
HIGHEST DAILY MEAN	(a)200	Apr 15,16	209
LOWEST DAILY MEAN	19	Jul 20	15
ANNUAL SEVEN-DAY MINIMUM	27	Jul 15	15
MAXIMUM PEAK FLOW		204	210
MAXIMUM PEAK STAGE		4.17	(a)4.43
INSTANTANEOUS LOW FLOW		20	15
ANNUAL RUNOFF (CFSM)	0.88	0.88	0.87
ANNUAL RUNOFF (INCHES)	11.99	11.96	11.83
10 PERCENT EXCEEDS	84	75	79
50 PERCENT EXCEEDS	40	43	41
90 PERCENT EXCEEDS	28	26	28

(a) Ice affected

(b) Also occurred July 14, 19, 20

(c) Estimated due to ice effect or missing record

## 04074950 WOLF RIVER AT LANGLADE, WI

LOCATION.--Lat 45°11'24", long 88°44'00", in SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	508	436	e260	e270	e180	e240	435	754	488	257	651	238
2	476	411	e260	e260	e190	e240	478	709	468	245	567	243
3	450	410	e260	e250	e190	e230	515	633	447	244	581	222
4	618	429	e250	e250	e190	e220	499	581	436	237	516	206
5	842	427	e270	e260	e190	e220	480	596	405	228	482	189
6	880	436	e270	e280	e200	e210	e470	737	365	220	456	187
7	900	422	e270	e290	e200	e220	e430	749	386	218	445	184
8	878	393	e270	e280	e200	e230	404	733	472	214	421	181
9	862	387	e270	e280	e190	e220	398	726	599	211	402	203
10	832	410	e270	e260	e200	e220	427	753	694	223	358	193
11	782	466	e280	e240	e210	e220	518	916	783	230	354	188
12	730	466	e300	e220	e210	e230	568	1,140	734	234	366	217
13	687	455	e300	e200	e210	e230	608	1,120	690	222	333	333
14	670	445	e300	e200	e210	e240	677	1,090	654	208	309	438
15	657	437	e300	e190	e210	e280	728	1,050	577	209	296	469
16	661	e410	e310	e190	e220	e350	997	987	493	208	287	443
17	605	e400	e320	e180	e220	e600	1,160	920	451	232	278	378
18	509	e430	e340	e170	e230	e730	1,110	859	427	238	271	288
19	487	e420	e370	e170	e240	e810	1,130	820	405	231	264	269
20	500	e400	e380	e170	e240	e880	1,250	816	381	221	262	259
21	535	364	e370	e160	e240	e900	1,300	772	340	238	271	243
22	560	358	e340	e160	e240	e850	1,270	705	318	230	251	297
23	567	355	e330	e150	e230	e800	1,230	670	306	213	229	330
24	562	359	e320	e150	e230	e660	1,160	638	312	206	253	364
25	555	350	e320	e150	e230	e610	1,090	609	294	200	255	383
26	580	e340	e310	e150	e240	e560	1,020	580	301	229	251	394
27	589	e360	e300	e150	e240	e500	960	540	293	435	237	380
28	573	e340	e300	e150	e240	549	894	515	289	513	232	373
29	545	e320	e280	e150	---	574	836	483	297	517	231	365
30	526	e300	e280	e160	---	547	788	474	278	573	235	413
31	503	---	e280	e170	---	491	---	486	---	629	225	---
TOTAL	19,629	11,936	9,280	6,310	6,020	13,861	23,830	23,161	13,383	8,513	10,569	8,870
MEAN	633	398	299	204	215	447	794	747	446	275	341	296
MAX	900	466	380	290	240	900	1,300	1,140	783	629	651	469
MIN	450	300	250	150	180	210	398	474	278	200	225	181
CFSM	1.37	0.86	0.65	0.44	0.46	0.97	1.72	1.61	0.96	0.59	0.74	0.64
IN.	1.58	0.96	0.75	0.51	0.48	1.11	1.91	1.86	1.08	0.68	0.85	0.71

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	435	436	363	310	311	462	815	613	481	368	326	399
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 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL TOTAL	175,825		155,362			
ANNUAL MEAN	482		426		445	
HIGHEST ANNUAL MEAN					666	
LOWEST ANNUAL MEAN					326	
HIGHEST DAILY MEAN	1,590	Apr 19	1,300	Apr 21	2,420	Apr 26, 1996
LOWEST DAILY MEAN	239	Jul 20	(a)150	Jan 23-29	137	Jul 7, 1988
ANNUAL SEVEN-DAY MINIMUM	(a)263	Dec 1	(a)150	Jan 23	142	Sep 28, 1989
MAXIMUM PEAK FLOW			(b)1,310	Apr 21	2,440	Apr 26, 1996
MAXIMUM PEAK STAGE			(a)9.61	Mar 18	10.40	Apr 26, 1996
INSTANTANEOUS LOW FLOW			(a)		(c)102	Dec 17, 1999
ANNUAL RUNOFF (CFSM)	1.04		0.92		0.96	
ANNUAL RUNOFF (INCHES)	14.13		12.48		13.05	
10 PERCENT EXCEEDS	927		785		750	
50 PERCENT EXCEEDS	370		354		368	
90 PERCENT EXCEEDS	280		202		240	

(a) Ice affected

(b) Gage height, 9.36 ft

(c) Result of freezeup

(e) 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 1/4 SE 1/4 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 September 2003.

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e53	e52	e57	e47	58	76	75	63	107	51
2	---	---	e52	e52	e58	e46	66	73	72	62	90	49
3	---	---	e50	e54	e56	e44	58	72	70	64	75	49
4	---	---	e51	e54	e52	e44	e41	70	68	63	76	49
5	---	---	e51	e53	e48	e44	e64	96	66	63	72	49
6	---	---	e51	e52	e47	e45	e60	148	66	59	66	49
7	---	---	e52	e54	e46	e46	e56	111	88	61	67	49
8	---	---	e50	e57	e46	e46	e51	99	103	59	64	48
9	---	---	e52	e56	e46	e46	e45	96	112	58	61	48
10	---	---	e54	e56	e46	e45	62	94	114	73	59	48
11	---	---	e58	e55	e45	e46	78	127	134	74	60	47
12	---	---	e60	e55	e45	e47	78	145	100	67	59	58
13	---	---	e60	e55	e45	e47	64	109	83	62	56	96
14	---	---	e60	e54	e44	e50	64	92	81	59	55	125
15	---	---	e60	e54	e44	e53	77	86	77	62	55	107
16	---	---	e60	e54	e44	e57	219	84	71	60	54	73
17	---	---	e61	e53	e44	e90	205	81	66	61	53	63
18	---	---	e65	e53	e44	e140	116	80	67	59	53	59
19	---	---	e71	e53	e45	e110	99	80	65	58	52	58
20	---	---	e67	e53	e46	e96	121	89	63	58	54	e57
21	---	---	e63	e52	e47	e90	119	85	62	65	55	e57
22	---	---	e59	e52	e46	e90	97	79	61	63	52	e67
23	---	---	e58	e52	e45	e87	87	77	60	61	52	e74
24	---	---	e56	e51	e44	79	82	75	69	58	63	e68
25	---	---	e55	e51	e44	70	83	74	74	57	61	e63
26	---	---	e55	e51	e44	60	84	73	66	77	57	e65
27	---	---	e55	e50	e44	56	78	72	62	76	53	e64
28	---	---	e54	e50	e46	96	78	73	67	64	55	e62
29	---	---	e54	e50	---	98	77	78	72	60	61	e60
30	---	---	e56	e53	---	68	76	77	66	64	55	e59
31	---	---	e53	e55	---	59	---	81	---	73	52	---
TOTAL	---	---	1,756	1,646	1,308	2,042	2,543	2,752	2,300	1,963	1,904	1,871
MEAN	---	---	56.6	53.1	46.7	65.9	84.8	88.8	76.7	63.3	61.4	62.4
MAX	---	---	71	57	58	140	219	148	134	77	107	125
MIN	---	---	50	50	44	44	41	70	60	57	52	47

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

MEAN	---	---	56.6	53.1	46.7	65.9	84.8	88.8	76.7	63.3	61.4	62.4
MAX	---	---	56.6	53.1	46.7	65.9	84.8	88.8	76.7	63.3	61.4	62.4
(WY)	---	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	---	---	56.6	53.1	46.7	65.9	84.8	88.8	76.7	63.3	61.4	62.4
(WY)	---	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

SUMMARY STATISTICS

ANNUAL TOTAL	20,085
ANNUAL MEAN	66.1
HIGHEST DAILY MEAN	219 Apr 16
LOWEST DAILY MEAN	(a)41 Apr 4
ANNUAL SEVEN-DAY MINIMUM	(a)44 Feb 12
MAXIMUM PEAK FLOW	249 Apr 16
MAXIMUM PEAK STAGE	4.59 Apr 16
INSTANTANEOUS LOW FLOW	36 Apr 8
10 PERCENT EXCEEDS	93
50 PERCENT EXCEEDS	60
90 PERCENT EXCEEDS	46

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

FOR 2003 WATER YEAR  
(DECEMBER-SEPTEMBER)

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. 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	123	135	e110	e97	e70	e70	151	146	144	112	141	82
2	124	132	e110	e95	e70	e70	155	143	133	108	165	81
3	116	130	e110	e90	e70	e70	147	141	127	108	163	79
4	160	127	e110	e90	e70	e68	132	138	122	107	139	81
5	294	128	e110	e90	e65	e68	e130	177	121	106	121	79
6	302	130	e110	e96	e60	e68	e140	284	121	106	109	79
7	273	131	e100	e92	e60	e70	e140	302	139	144	103	78
8	231	130	e110	e92	e60	e70	132	282	158	116	102	78
9	197	128	e110	e90	e60	e71	135	240	182	107	97	78
10	167	130	e110	e85	e60	e75	141	227	217	113	95	77
11	150	135	e110	e80	e60	e77	155	257	276	124	105	77
12	144	135	118	e72	e60	e79	165	324	259	115	99	89
13	140	131	119	e68	e60	e83	167	316	210	111	95	159
14	137	127	120	e66	e60	e85	161	269	157	107	93	206
15	132	125	e110	e63	e60	e88	e250	214	140	104	94	191
16	128	123	e110	e61	e60	e110	e390	177	130	106	89	157
17	125	122	115	e60	e60	e210	e600	163	124	103	87	113
18	127	e120	122	e59	e68	e380	e490	157	122	112	85	96
19	133	e120	137	e58	e70	e350	399	157	117	103	86	95
20	137	e120	135	e58	e70	e270	349	168	113	98	85	99
21	139	119	e120	e57	e70	232	326	164	111	97	84	95
22	141	119	e110	e57	e70	212	281	153	108	99	82	118
23	145	118	e100	e57	e70	203	235	146	108	96	80	125
24	145	118	e100	e57	e69	205	199	141	112	94	83	114
25	144	112	e100	e57	e69	190	182	137	115	92	84	103
26	157	e120	e100	e56	e70	164	166	131	113	99	85	100
27	167	e120	e110	e57	e70	144	159	129	109	112	81	107
28	167	e120	e100	e60	e70	178	158	130	111	104	81	109
29	154	122	e100	e62	---	249	153	130	118	96	86	106
30	144	e120	e100	e70	---	246	151	123	119	107	87	110
31	139	---	e97	e70	---	177	---	140	---	118	83	---
TOTAL	4,982	3,747	3,423	2,222	1,831	4,632	6,539	5,806	4,236	3,324	3,069	3,161
MEAN	161	125	110	71.7	65.4	149	218	187	141	107	99.0	105
MAX	302	135	137	97	70	380	600	324	276	144	165	206
MIN	116	112	97	56	60	68	130	123	108	92	80	77
CFSM	1.41	1.10	0.97	0.63	0.57	1.31	1.91	1.64	1.24	0.94	0.87	0.92
IN.	1.63	1.22	1.12	0.73	0.60	1.51	2.13	1.89	1.38	1.08	1.00	1.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

	126	128	106	92.5	96.8	127	209	164	164	126	122	115
MEAN	126	128	106	92.5	96.8	127	209	164	164	126	122	115
MAX	175	221	164	126	124	170	331	254	313	217	209	160
(WY)	(1996)	(1993)	(1993)	(1993)	(1998)	(1998)	(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 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1993 - 2003
ANNUAL TOTAL	47,089	46,980	
ANNUAL MEAN	129	129	131
HIGHEST ANNUAL MEAN			184
LOWEST ANNUAL MEAN			104
HIGHEST DAILY MEAN	366	Apr 13	(e)600
LOWEST DAILY MEAN	(a)76	Feb 13,16,17	Apr 17
ANNUAL SEVEN-DAY MINIMUM	(a)77	Feb 11	Jan 26
MAXIMUM PEAK FLOW			(a)57
MAXIMUM PEAK STAGE			(c)
INSTANTANEOUS LOW FLOW			Apr 17
ANNUAL RUNOFF (CFSM)	1.13	1.13	1.060
ANNUAL RUNOFF (INCHES)	15.37	15.33	8.88
10 PERCENT EXCEEDS	205	205	(d)31
50 PERCENT EXCEEDS	118	114	1.15
90 PERCENT EXCEEDS	82	70	15.66

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

STREAMS TRIBUTARY TO LAKE MICHIGAN

0407809265 MIDDLE BRANCH EMBARRASS RIVER NEAR WITTENBERG, WI

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	71	e35	e26	e19	e18	99	80	90	41	35	22
2	62	53	e31	e25	e19	e18	97	76	73	38	43	21
3	53	43	e33	e25	e18	e18	91	72	64	37	47	21
4	136	68	e31	e26	e17	e18	65	68	59	37	68	21
5	234	56	e30	e27	e17	e18	50	108	56	35	47	21
6	276	56	e30	e28	e16	e18	e52	207	54	35	38	21
7	293	55	e30	e27	e15	e18	e53	254	54	36	35	21
8	225	54	e30	e26	e16	e18	e56	232	74	35	35	21
9	160	55	e31	e25	e16	e18	e57	187	115	34	33	21
10	122	60	e31	e24	e16	e19	60	177	150	35	32	21
11	97	64	e30	e23	e16	e19	78	238	209	38	33	21
12	84	85	e30	e22	e16	e20	100	298	231	38	30	27
13	77	61	e30	e20	e16	e21	93	349	182	35	29	60
14	112	41	e30	e19	e16	e22	83	286	104	33	28	82
15	55	60	e29	e18	e16	e30	96	191	77	32	27	76
16	64	57	e30	e18	e16	e50	367	130	64	32	27	52
17	61	45	e31	e18	e17	e100	521	110	57	31	27	39
18	41	35	e33	e17	e17	e160	537	98	53	31	26	33
19	56	31	e34	e17	e19	e160	365	93	50	30	26	31
20	76	37	e33	e17	e19	e140	290	103	39	29	26	29
21	71	43	e32	e17	e19	e120	279	110	31	29	25	29
22	77	43	e31	e17	e18	e110	256	93	36	29	23	36
23	81	43	e30	e17	e18	116	197	82	37	28	20	45
24	59	43	e29	e16	e17	116	138	75	38	27	20	42
25	74	41	e28	e17	e18	104	120	70	44	27	20	35
26	99	39	e28	e17	e19	84	109	66	46	27	20	33
27	127	39	e27	e18	e19	68	101	62	41	27	21	35
28	132	38	e26	e18	e19	104	95	60	42	27	22	37
29	96	38	e26	e18	---	160	77	59	48	27	23	36
30	83	e37	e26	e19	---	164	82	62	46	26	23	35
31	73	---	e26	e19	---	126	---	82	---	27	22	---
TOTAL	3,311	1,491	931	641	484	2,175	4,664	4,178	2,264	993	931	1,024
MEAN	107	49.7	30.0	20.7	17.3	70.2	155	135	75.5	32.0	30.0	34.1
MAX	293	85	35	28	19	164	537	349	231	41	68	82
MIN	41	31	26	16	15	18	50	59	31	26	20	21
CFSM	1.40	0.65	0.39	0.27	0.23	0.92	2.04	1.77	0.99	0.42	0.39	0.45
IN.	1.61	0.73	0.45	0.31	0.24	1.06	2.27	2.04	1.10	0.48	0.45	0.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)	(WY)	(WY)	(WY)	(WY)	(WY)	(WY)	(WY)	(WY)
MEAN	53.3	53.1	36.6	27.8	31.0	65.5	139	95.1	89.9	48.1	46.0	50.3
MAX	107	128	73.3	45.7	44.1	116	241	167	222	96.3	100	97.9
(WY)	(2003)	(1993)	(1993)	(1996)	(1998)	(1990)	(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 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1990 - 2003
ANNUAL TOTAL	24,257	23,087	
ANNUAL MEAN	66.5	63.3	61.3
HIGHEST ANNUAL MEAN			100
LOWEST ANNUAL MEAN			43.0
HIGHEST DAILY MEAN	341	537	697
LOWEST DAILY MEAN	(a)18	(a)15	(a)11
ANNUAL SEVEN-DAY MINIMUM	(a)19	(a)16	(a)12
MAXIMUM PEAK FLOW		693	905
MAXIMUM PEAK STAGE		4.40	(b)5.09
ANNUAL RUNOFF (CFSM)	0.87	0.83	0.80
ANNUAL RUNOFF (INCHES)	11.83	11.26	10.92
10 PERCENT EXCEEDS	149	128	122
50 PERCENT EXCEEDS	44	37	41
90 PERCENT EXCEEDS	23	18	22

(a) Ice affected  
 (b) Recorded gage height, 5.09 ft, result of drawdown; outside crest-gage peak 5.29 ft  
 (c) 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, 28.0°C, July 5 and Aug. 20; minimum, 0.0°C, many days in winter.

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	17.0	14.0	15.5	3.0	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
2	16.0	14.0	15.0	3.0	1.0	2.0	0.5	0.0	0.0	0.5	0.0	0.0
3	14.5	13.0	13.5	3.5	1.5	2.5	0.5	0.0	0.0	0.5	0.0	0.0
4	14.0	12.5	13.0	3.5	1.5	2.5	0.5	0.0	0.0	0.0	0.0	0.0
5	12.5	11.5	12.0	2.5	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
6	11.5	10.0	11.0	3.5	1.5	2.5	0.5	0.0	0.0	0.5	0.0	0.0
7	10.0	8.5	9.5	4.0	1.5	2.5	0.5	0.0	0.0	0.5	0.0	0.0
8	9.5	8.0	9.0	5.0	2.5	4.0	0.5	0.0	0.0	0.5	0.0	0.0
9	10.5	8.5	9.5	6.0	4.0	5.0	0.5	0.0	0.0	0.0	0.0	0.0
10	9.5	8.5	9.0	7.5	5.5	6.5	0.5	0.0	0.0	0.0	0.0	0.0
11	10.5	8.5	9.5	6.5	4.5	5.5	0.5	0.0	0.0	0.0	0.0	0.0
12	10.5	9.5	10.0	5.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
13	9.5	7.5	8.5	4.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
14	8.0	6.5	7.5	3.5	1.0	2.5	0.5	0.0	0.0	0.0	0.0	0.0
15	9.0	6.0	7.5	3.0	0.5	1.5	0.5	0.0	0.0	0.0	0.0	0.0
16	7.5	4.5	6.0	3.0	1.0	1.5	0.0	0.0	0.0	0.5	0.0	0.0
17	6.5	4.5	5.5	2.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
18	4.5	3.0	4.0	2.0	0.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0
19	4.5	3.5	4.0	2.5	0.0	1.0	0.5	0.0	0.5	0.0	0.0	0.0
20	5.0	3.0	4.0	2.5	0.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0
21	4.0	2.0	3.0	2.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
22	3.0	2.0	2.5	2.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
23	4.0	2.0	2.5	3.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
24	4.5	2.5	3.5	2.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
25	4.0	3.0	3.5	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
26	4.5	3.5	4.0	1.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0
27	4.0	3.0	3.5	1.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0
28	4.5	3.0	3.5	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
29	5.0	3.5	4.0	2.0	0.5	1.0	0.5	0.0	0.0	0.0	0.0	0.0
30	5.0	3.5	4.5	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
31	5.0	3.0	4.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	17.0	2.0	7.2	7.5	0.0	2.1	0.5	0.0	0.0	0.5	0.0	0.0

## STREAMS TRIBUTARY TO LAKE MICHIGAN

0407809265 MIDDLE BRANCH EMBARRASS RIVER NEAR WITTENBERG, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	0.5	0.0	0.0	4.5	1.0	2.5	14.5	10.5	12.0
2	0.0	0.0	0.0	0.0	0.0	0.0	5.0	2.0	3.5	15.0	10.0	12.0
3	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.0	2.0	15.0	10.0	12.0
4	0.0	0.0	0.0	0.5	0.0	0.0	1.5	0.0	0.5	13.5	10.0	11.5
5	0.0	0.0	0.0	0.5	0.0	0.0	4.0	0.0	1.5	11.5	8.5	10.0
6	0.0	0.0	0.0	0.5	0.0	0.0	4.5	0.0	1.5	9.0	8.0	8.5
7	0.0	0.0	0.0	0.5	0.0	0.0	2.5	0.0	1.0	8.5	8.0	8.0
8	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	2.5	10.5	8.0	9.5
9	0.0	0.0	0.0	0.0	0.0	0.0	7.5	0.0	3.0	11.0	10.0	10.5
10	0.0	0.0	0.0	0.0	0.0	0.0	9.0	1.5	5.0	11.5	9.0	10.5
11	0.0	0.0	0.0	0.5	0.0	0.0	9.5	4.0	6.0	11.5	9.5	10.5
12	0.0	0.0	0.0	0.5	0.0	0.0	9.0	4.5	6.5	11.0	9.0	10.0
13	0.0	0.0	0.0	0.5	0.0	0.0	9.0	5.0	6.5	13.5	11.0	12.0
14	0.5	0.0	0.0	0.5	0.0	0.0	11.5	5.5	8.5	14.0	13.0	13.5
15	0.0	0.0	0.0	0.5	0.0	0.0	13.0	8.0	10.5	14.0	12.0	13.0
16	0.5	0.0	0.0	0.5	0.0	0.0	10.0	1.5	6.0	15.0	12.5	13.5
17	0.5	0.0	0.0	0.5	0.0	0.0	1.5	0.0	1.0	15.5	13.0	14.0
18	0.5	0.0	0.0	0.5	0.0	0.0	2.0	1.0	1.5	16.0	13.0	14.5
19	0.0	0.0	0.0	0.5	0.0	0.0	3.5	2.0	2.5	15.5	15.0	15.0
20	0.5	0.0	0.0	0.0	0.0	0.0	5.0	3.5	4.5	15.5	13.0	14.5
21	0.5	0.0	0.0	0.5	0.0	0.0	5.0	4.5	4.5	15.0	12.5	13.5
22	0.0	0.0	0.0	1.0	0.0	0.0	6.0	3.5	5.0	15.0	11.5	13.0
23	0.0	0.0	0.0	1.5	0.0	0.5	8.0	6.0	7.0	16.0	11.0	13.0
24	0.0	0.0	0.0	2.5	1.0	1.5	10.0	7.0	8.5	17.5	12.0	14.5
25	0.5	0.0	0.0	3.5	0.0	1.5	12.5	8.5	10.0	19.0	13.0	15.5
26	0.5	0.0	0.0	4.0	0.5	1.5	12.5	9.0	10.5	19.0	14.0	16.0
27	0.5	0.0	0.0	1.0	0.0	0.5	14.5	9.5	12.0	20.5	14.5	17.5
28	0.5	0.0	0.0	1.5	0.0	1.0	15.5	11.5	13.0	18.5	16.0	17.0
29	---	---	---	2.0	0.0	0.5	16.0	11.5	13.5	20.5	15.0	17.5
30	---	---	---	2.5	0.0	1.0	12.5	11.0	12.0	17.5	15.5	16.5
31	---	---	---	3.0	0.0	1.5	---	---	---	18.0	14.5	16.0
MONTH	0.5	0.0	0.0	4.0	0.0	0.3	16.0	0.0	5.8	20.5	8.0	13.1
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.5	13.5	15.5	24.0	17.5	20.5	25.0	19.5	22.0	22.5	16.5	19.0
2	17.5	13.5	15.5	24.5	18.5	21.0	22.0	20.0	21.0	22.5	16.0	19.0
3	18.0	14.5	16.0	27.0	20.0	23.0	23.5	20.0	21.5	21.5	17.5	19.0
4	19.5	14.5	16.5	26.5	21.5	23.5	23.0	20.0	21.0	21.5	16.5	18.5
5	20.0	15.5	17.5	28.0	21.5	24.0	24.5	19.0	21.5	21.5	14.5	18.0
6	17.5	15.5	16.5	23.5	21.0	22.0	25.0	20.0	22.0	22.5	15.5	19.0
7	17.5	15.0	15.5	26.0	20.0	22.5	23.5	20.0	21.5	23.0	17.5	20.0
8	15.5	14.5	15.0	23.0	20.0	21.0	24.0	19.5	21.5	23.5	18.0	21.0
9	16.0	14.0	15.0	21.0	18.5	19.5	25.5	19.0	22.0	24.0	19.5	21.5
10	14.0	14.0	14.0	19.0	18.0	18.5	24.0	19.0	21.5	24.0	19.0	21.5
11	15.0	13.0	14.0	21.0	17.0	18.5	23.5	20.0	21.5	24.5	19.0	21.5
12	16.5	14.5	15.5	23.5	17.0	19.5	24.5	18.5	21.0	21.0	19.0	20.0
13	19.0	16.0	17.0	24.5	17.5	20.5	25.5	18.5	22.0	20.0	19.0	19.5
14	20.5	16.5	18.5	23.0	18.5	20.5	26.0	19.5	22.5	19.0	17.0	18.5
15	22.0	17.0	19.0	24.5	19.5	21.5	27.0	20.5	23.5	17.5	15.5	16.5
16	23.5	17.5	20.0	26.0	19.0	22.0	27.5	22.0	24.5	18.0	14.5	16.0
17	24.0	18.0	20.5	22.0	20.0	21.0	27.5	21.0	24.0	19.0	14.5	16.5
18	24.5	19.0	21.5	25.0	17.5	21.0	27.5	21.0	24.0	20.0	16.0	17.5
19	24.0	18.5	20.5	25.5	17.5	21.0	27.5	22.0	24.5	17.0	14.5	16.5
20	24.5	17.5	20.5	25.5	19.5	22.0	28.0	22.0	25.0	17.5	13.0	15.0
21	25.0	16.0	20.0	23.5	20.0	21.5	27.5	23.5	25.0	17.0	12.5	15.0
22	25.0	17.5	20.5	23.5	18.5	20.5	27.0	21.5	24.0	16.0	14.0	15.0
23	24.5	18.5	21.0	24.5	17.5	20.5	24.0	19.5	21.5	15.5	13.0	14.0
24	25.5	20.0	22.0	24.5	17.5	21.0	26.5	19.5	22.5	14.5	12.0	13.5
25	25.0	21.5	23.0	25.0	18.5	21.5	25.5	21.0	23.0	13.0	10.5	12.0
26	22.5	19.5	21.5	24.5	20.5	22.0	27.0	21.0	23.5	13.0	11.0	12.0
27	22.5	18.5	20.0	26.5	21.0	23.5	25.5	19.5	22.5	12.0	10.5	11.0
28	19.0	16.5	17.5	26.5	20.5	23.0	24.0	19.0	21.5	11.0	9.0	10.5
29	20.0	16.0	18.0	27.0	19.5	23.0	23.5	19.5	21.5	11.0	8.0	9.5
30	23.0	16.0	19.0	25.0	20.5	22.5	22.0	16.5	19.5	10.5	7.5	9.0
31	---	---	---	24.5	20.5	22.0	21.0	16.0	19.0	---	---	---
MONTH	25.5	13.0	18.2	28.0	17.0	21.4	28.0	16.0	22.3	24.5	7.5	16.5



04078500 EMBARRASS RIVER NEAR EMBARRASS, WI

LOCATION.--Lat 44°43'29", long 88°44'10", in SW 1/4 SW 1/4 sec.18, T.26 N., R.15 E., Shawano County, Hydrologic Unit 04030202, on right bank 40 ft downstream from bridge on county road, 1.3 mi downstream from Mill Creek, and 4.0 mi northwest of Embarrass.

DRAINAGE AREA.--384 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1919 to September 1985, December 1993 to current year.

REVISED RECORDS.--WSP 1337: 1920-26(M), 1928, 1929-30(M), 1933-34, 1936-37, 1938(M), 1940. WDR WI-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 803.95 ft above NGVD of 1929. Prior to Aug. 23, 1938, nonrecording gage at same site and datum. Aug. 23, 1938 to May 8, 1984, at site 40 ft upstream at same datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	205	316	e150	e140	e90	e95	590	394	462	233	306	104
2	214	292	e150	e130	e89	e95	501	393	418	206	333	101
3	219	277	e150	e130	e87	e97	477	377	366	196	316	98
4	251	235	e150	e140	e85	e98	406	349	323	193	285	93
5	448	251	e150	e140	e83	e99	301	450	285	180	273	92
6	777	257	e150	e140	e83	e99	279	971	270	171	242	90
7	809	260	e160	e140	e83	e98	e270	1,210	307	167	209	91
8	854	262	e160	e130	e83	e98	e280	1,130	411	171	190	92
9	724	258	e160	e120	e83	e99	286	992	509	171	174	92
10	525	257	e170	e120	e83	e110	294	925	668	182	167	91
11	414	286	e170	e110	e83	e110	322	1,060	1,110	208	175	90
12	360	289	e170	e100	e83	e110	371	1,390	1,170	220	183	97
13	319	277	e160	e100	e84	e120	417	1,380	959	196	169	176
14	303	283	e160	e97	e85	e150	402	1,170	687	175	149	383
15	286	238	e160	e93	e86	e190	415	981	443	166	138	489
16	285	220	e170	e90	e87	e290	879	664	370	160	130	402
17	215	225	e150	e90	e88	e600	1,830	565	297	156	126	270
18	254	189	e150	e87	e90	e1,200	2,150	476	279	152	121	196
19	227	202	e150	e86	e97	e900	1,840	449	256	148	112	174
20	245	203	e140	e85	e100	e780	1,480	461	237	143	114	154
21	303	192	e140	e85	e100	e630	1,210	519	221	140	117	144
22	322	198	e140	e85	e97	e580	1,160	481	198	140	110	175
23	336	201	e130	e84	e96	671	986	394	189	138	106	225
24	397	198	e140	e84	e95	673	781	381	189	135	104	222
25	422	184	e140	e87	e95	612	622	344	199	130	101	201
26	421	157	e140	e90	e95	501	554	329	205	131	100	176
27	538	e160	e140	e90	e95	464	515	313	199	131	98	172
28	526	e180	e140	e90	e95	522	477	302	209	130	97	178
29	493	e160	e140	e90	---	833	457	296	252	125	109	178
30	405	e150	e140	e90	---	871	433	292	263	131	114	170
31	359	---	e140	e90	---	670	---	373	---	224	109	---
TOTAL	12,456	6,857	4,660	3,233	2,500	12,465	20,985	19,811	11,951	5,149	5,077	5,216
MEAN	402	229	150	104	89.3	402	700	639	398	166	164	174
MAX	854	316	170	140	100	1,200	2,150	1,390	1,170	233	333	489
MIN	205	150	130	84	83	95	270	292	189	125	97	90
CFSM	1.05	0.60	0.39	0.27	0.23	1.05	1.82	1.66	1.04	0.43	0.43	0.45
IN.	1.21	0.66	0.45	0.31	0.24	1.21	2.03	1.92	1.16	0.50	0.49	0.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2003, BY WATER YEAR (WY)

MEAN	264	284	194	150	157	386	751	441	358	217	188	238
MAX	1,324	932	908	377	517	1,386	1,892	1,324	1,105	826	579	886
(WY)	(1987)	(1986)	(1987)	(1939)	(1986)	(1973)	(1922)	(1973)	(1943)	(1978)	(1928)	(1938)
MIN	86.8	89.5	67.3	52.8	57.8	98.5	151	148	111	75.5	44.5	59.5
(WY)	(1949)	(1934)	(1934)	(1959)	(1959)	(1931)	(1931)	(1931)	(1977)	(1932)	(1931)	(1933)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1919 - 2003	
ANNUAL TOTAL	103,883		110,360			
ANNUAL MEAN	285		302		297	
HIGHEST ANNUAL MEAN					515	
LOWEST ANNUAL MEAN					126	
HIGHEST DAILY MEAN	1,400	Apr 13	2,150	Apr 18	6,280	Apr 10, 1922
LOWEST DAILY MEAN	(a)95	Jan 18, 19	(a)83	Feb 5-12	24	Aug 3, 1931
ANNUAL SEVEN-DAY MINIMUM	(a)100	Jan 1	(a)83	Feb 5	27	Aug 2, 1931
MAXIMUM PEAK FLOW			2,200	Apr 18	(b)7,080	Apr 12, 1965
MAXIMUM PEAK STAGE			6.97	Apr 18	(b)12.13	Apr 12, 1965
ANNUAL RUNOFF (CFSM)	0.74		0.79		0.77	
ANNUAL RUNOFF (INCHES)	10.06		10.69		10.52	
10 PERCENT EXCEEDS	578		666		620	
50 PERCENT EXCEEDS	204		190		188	
90 PERCENT EXCEEDS	120		91		94	

- (a) Ice affected
- (b) Affected by failure of dam near Pella, 9.2 mi above station
- (c) Estimated due to ice effect or missing record

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,130	2,170	e1,200	e900	e570	e660	3,280	3,840	2,390	1,570	1,690	780
2	1,180	2,100	e1,100	e850	e580	e660	3,210	3,580	2,440	1,490	1,960	762
3	1,270	2,010	e1,000	e760	e590	e670	3,140	3,340	2,420	1,390	2,150	754
4	1,380	1,930	e960	e780	e590	e680	3,060	3,130	2,320	1,290	2,290	722
5	1,540	1,840	e960	e770	e590	e680	2,930	3,040	2,180	1,210	2,390	700
6	1,700	1,740	e970	e780	e590	e680	2,780	3,080	2,010	1,150	2,400	695
7	1,850	1,690	e990	e800	e580	e690	2,620	3,160	1,940	1,130	2,380	689
8	2,000	1,680	e990	e800	e570	e700	2,430	3,250	1,950	1,090	2,270	681
9	2,120	1,660	e990	e810	e570	e700	2,250	3,320	2,070	1,060	2,100	680
10	2,200	1,650	e990	e800	e570	e690	2,140	3,400	2,330	1,090	1,910	681
11	2,260	1,640	e970	e780	e600	e690	2,050	3,620	2,780	1,200	1,720	684
12	2,300	1,620	e970	e740	e600	e690	1,960	3,960	3,050	1,270	1,560	705
13	2,320	1,620	e1,000	e680	e600	e700	1,920	4,240	3,220	1,320	1,500	809
14	2,280	1,620	e1,000	e670	e600	e720	1,940	4,430	3,330	1,280	1,430	1,080
15	2,240	1,620	e1,000	e660	e610	e750	1,970	4,520	3,350	1,210	1,300	1,340
16	2,180	1,630	e1,100	e620	e610	e900	2,150	4,530	3,400	1,130	1,230	1,640
17	2,130	1,630	e1,100	e600	e610	e1,100	2,460	4,500	3,420	1,060	1,140	1,780
18	2,080	1,590	e1,000	e580	e610	e1,300	2,700	4,400	3,400	1,020	1,060	1,790
19	2,020	1,540	e1,100	e560	e610	e1,500	2,890	4,280	3,250	1,010	1,010	1,710
20	1,940	1,450	e1,200	e550	e620	e1,900	3,140	4,150	3,010	988	978	1,540
21	1,890	1,390	e1,200	e550	e620	e2,500	3,560	3,960	2,750	967	957	1,370
22	1,890	1,390	e1,100	e540	e630	e2,700	4,220	3,770	2,450	949	930	1,230
23	1,920	1,380	e900	e510	e650	e2,900	4,790	3,610	2,080	925	901	1,130
24	1,970	1,390	e900	e510	e640	e3,100	5,090	3,460	1,750	918	884	1,120
25	2,030	1,370	e880	e520	e640	3,210	5,170	3,290	1,530	909	863	1,170
26	2,090	1,290	e880	e500	e650	3,270	5,090	3,080	1,410	903	830	1,190
27	2,130	1,150	e870	e500	e650	3,320	4,910	2,870	1,340	878	807	1,220
28	2,160	e1,100	e900	e500	e650	3,340	4,670	2,680	1,310	860	803	1,190
29	2,190	e1,100	e900	e510	---	3,360	4,390	2,510	1,410	869	804	1,160
30	2,200	e1,200	e880	e520	---	3,370	4,100	2,330	1,530	933	791	1,170
31	2,200	---	e900	e550	---	3,350	---	2,320	---	1,280	790	---
TOTAL	60,790	47,190	30,900	20,200	17,000	51,480	97,010	109,650	71,820	34,349	43,828	32,172
MEAN	1,961	1,573	997	652	607	1,661	3,234	3,537	2,394	1,108	1,414	1,072
MAX	2,320	2,170	1,200	900	650	3,370	5,170	4,530	3,420	1,570	2,400	1,790
MIN	1,130	1,100	870	500	570	660	1,920	2,320	1,310	860	790	680
CFSM	0.87	0.70	0.44	0.29	0.27	0.73	1.43	1.57	1.06	0.49	0.63	0.47
IN.	1.00	0.78	0.51	0.33	0.28	0.85	1.60	1.80	1.18	0.57	0.72	0.53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 2003, BY WATER YEAR (WY)

MEAN	1,477	1,609	1,222	950	929	2,123	3,936	2,784	2,165	1,476	1,145	1,330
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)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1896 - 2003	
ANNUAL TOTAL	654,949		616,389			
ANNUAL MEAN	1,794		1,689		1,768	
HIGHEST ANNUAL MEAN					3,200	
LOWEST ANNUAL MEAN					866	
HIGHEST DAILY MEAN	4,790	May 3	5,170	Apr 25	15,500	Apr 13, 1922
LOWEST DAILY MEAN	721	Aug 11	(a)500	(b)Jan 26	216	Aug 27, 1931
ANNUAL SEVEN-DAY MINIMUM	(a)760	Jan 15	(a)507	Jan 23	337	Sep 3, 1933
MAXIMUM PEAK STAGE					(c)11.83	Apr 3, 1979
ANNUAL RUNOFF (CFSM)	0.79		0.75		0.78	
ANNUAL RUNOFF (INCHES)	10.78		10.15		10.63	
10 PERCENT EXCEEDS	3,470		3,330		3,500	
50 PERCENT EXCEEDS	1,380		1,300		1,280	
90 PERCENT EXCEEDS	832		620		710	

- (a) Ice affect
- (b) Also occurred Jan. 27, 28
- (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.--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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,820	5,760	-1,080	1,970	1,260	1,720	6,190	6,180	5,110	2,920	2,980	e1,400
2	838	826	1,870	2,510	1,440	1,780	3,670	6,080	5,350	3,360	1,810	e1,000
3	1,830	4,050	2,120	2,030	1,720	1,250	3,450	5,680	4,020	2,520	2,910	4,750
4	6,330	2,980	1,870	2,070	1,910	1,760	5,800	2,250	4,470	2,990	3,900	e1,100
5	736	4,410	1,890	2,550	1,490	1,490	8,140	5,800	5,180	399	3,740	841
6	5,870	5,080	1,640	2,500	1,880	1,330	3,920	8,890	1,950	2,730	3,290	1,730
7	563	2,150	2,140	2,870	1,610	1,870	2,890	6,310	5,170	4,290	2,050	e1,400
8	3,340	3,820	1,910	2,980	1,790	1,870	7,760	4,620	4,800	1,370	3,230	e1,300
9	3,950	3,260	1,630	3,040	1,580	1,920	6,050	4,320	5,010	328	3,510	e1,400
10	3,000	4,510	1,980	2,520	1,780	1,400	4,880	8,710	4,790	4,910	3,220	e1,500
11	3,340	4,010	1,970	377	1,570	1,540	4,170	13,300	6,190	3,230	1,810	e1,700
12	6,160	3,510	2,240	1,430	1,540	1,600	3,480	8,750	6,360	1,290	3,080	1,880
13	5,780	1,930	2,490	2,070	1,530	1,660	3,580	4,930	6,810	2,220	1,480	4,230
14	48	4,050	2,030	2,030	1,550	1,580	4,090	8,020	5,510	1,760	3,000	3,760
15	6,310	2,570	2,550	1,910	1,630	1,750	2,650	8,220	6,100	5,480	3,110	1,740
16	3,340	3,450	1,420	1,990	1,500	2,070	-2,400	7,840	5,780	1,220	442	2,170
17	3,240	3,670	427	1,700	1,430	2,660	8,590	8,520	5,930	-455	1,900	37
18	3,030	2,020	2,610	1,930	1,470	2,940	5,880	7,610	4,510	3,490	1,020	2,010
19	6,800	3,640	4,130	1,720	1,540	3,110	5,660	8,250	5,290	2,330	2,170	8,450
20	2,170	2,470	4,180	1,770	1,460	4,080	7,440	11,400	5,600	2,070	936	-582
21	2,280	4,270	3,850	1,660	1,670	4,730	8,630	5,460	4,170	2,860	5,090	564
22	5,560	1,800	3,960	1,720	1,870	4,210	2,560	7,960	4,360	1,680	431	7,030
23	2,890	4,640	1,300	1,610	1,670	4,280	3,980	8,050	4,060	921	-1,140	2,190
24	3,000	3,660	1,060	1,300	1,700	5,280	6,490	6,500	3,950	2,300	4,390	3,700
25	2,570	1,760	2,510	1,610	1,360	5,810	5,060	6,980	3,190	1,190	1,820	359
26	7,180	588	2,370	1,600	1,520	4,960	6,000	6,730	6,850	2,840	1,310	1,360
27	3,500	2,350	2,560	1,130	1,580	3,740	7,570	6,360	603	528	-477	5,840
28	1,740	2,230	2,690	1,310	1,670	7,550	8,560	7,510	839	2,680	2,360	1,360
29	2,860	3,400	1,280	1,070	---	6,740	4,690	5,650	4,480	1,130	2,890	1,520
30	5,890	4,260	3,920	1,040	---	5,330	6,090	4,950	1,630	500	700	3,080
31	6,750	---	2,870	1,480	---	3,760	---	5,400	---	1,890	1,210	---
TOTAL	114,715	97,124	68,387	57,497	44,720	95,770	155,520	217,230	138,062	66,971	68,172	68,819
MEAN	3,700	3,237	2,206	1,855	1,597	3,089	5,184	7,007	4,602	2,160	2,199	2,294
MAX	7,180	5,760	4,180	3,040	1,910	7,550	8,630	13,300	6,850	5,480	5,090	8,450
MIN	48	588	-1,080	377	1,260	1,250	-2,400	2,250	603	-455	-1,140	-582
CFSM	0.70	0.61	0.42	0.35	0.30	0.58	0.98	1.32	0.87	0.41	0.41	0.43
IN.	0.80	0.68	0.48	0.40	0.31	0.67	1.09	1.52	0.97	0.47	0.48	0.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

MEAN	3,196	3,834	3,310	2,550	2,827	4,894	7,842	6,407	5,644	4,469	3,225	3,015
MAX	6,411	6,201	6,811	3,673	3,930	6,348	12,870	11,050	11,980	13,440	5,915	5,541
(WY)	(1996)	(1996)	(1993)	(1992)	(1999)	(1992)	(1993)	(1993)	(1993)	(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 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1992 - 2003

ANNUAL TOTAL	1,472,354		1,192,987				
ANNUAL MEAN	4,034		3,268		4,270		
HIGHEST ANNUAL MEAN					7,221		
LOWEST ANNUAL MEAN					3,268		
HIGHEST DAILY MEAN	16,600	May 9	13,300	May 11	18,600	Jun 25, 1993	
LOWEST DAILY MEAN	-1,470	Jul 23	-2,400	Apr 16	-6,270	Nov 1, 1992	
ANNUAL SEVEN-DAY MINIMUM	1,490	Dec 1	1,240	Aug 22	511	Oct 23, 1999	
ANNUAL RUNOFF (CFSM)	0.76		0.62		0.80		
ANNUAL RUNOFF (INCHES)	10.31		8.36		10.92		
10 PERCENT EXCEEDS	7,660		6,340		8,280		
50 PERCENT EXCEEDS	3,330		2,660		3,490		
90 PERCENT EXCEEDS	1,260		1,130		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, 3.09 ft, May 13; minimum recorded, 1.54 ft, Feb. 22.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.95	2.86	2.39	2.05	1.65	1.62	2.03	2.65	2.77	2.76	2.86	2.74
2	3.01	2.88	2.40	2.02	1.66	1.62	2.10	2.67	2.75	2.74	2.90	2.72
3	2.99	2.83	2.37	1.99	1.67	1.62	2.14	2.66	2.76	2.74	2.92	2.66
4	2.95	2.82	2.36	1.97	1.67	1.63	2.17	2.67	2.75	2.74	2.94	2.68
5	3.08	2.78	2.36	1.95	1.65	1.64	2.12	2.70	2.72	2.78	2.95	2.64
6	2.97	2.75	2.36	1.94	1.63	1.63	2.23	2.73	2.73	2.79	2.97	2.62
7	3.05	2.71	2.35	1.92	1.62	1.62	2.30	2.80	2.73	2.87	3.02	2.63
8	3.02	2.69	2.35	1.90	1.61	1.62	2.20	2.85	2.76	2.88	3.03	2.62
9	3.04	2.66	2.35	1.90	1.60	1.62	2.20	2.84	2.78	2.89	3.02	2.61
10	3.03	2.63	2.35	1.89	1.59	1.61	2.22	2.85	2.84	2.90	3.03	2.60
11	3.02	2.62	2.34	1.88	1.59	1.60	2.23	2.83	2.88	2.91	3.05	2.58
12	2.99	2.56	2.33	1.85	1.60	1.59	2.24	3.05	2.86	2.92	3.04	2.55
13	2.97	2.54	2.31	1.83	1.60	1.60	2.23	3.09	2.84	2.90	3.03	2.66
14	2.97	2.51	2.30	1.82	1.59	1.60	2.21	3.07	2.85	2.87	3.02	2.82
15	2.94	2.52	2.29	1.80	1.60	1.61	2.22	3.07	2.83	2.84	3.02	2.83
16	2.96	2.50	2.28	1.79	1.60	1.63	2.35	3.08	2.81	2.88	3.02	2.82
17	2.94	2.48	2.25	1.78	1.60	1.64	2.20	3.07	2.80	2.89	3.01	2.80
18	2.92	2.47	2.25	1.76	1.60	1.65	2.23	3.06	2.81	2.86	2.98	2.77
19	2.91	2.50	2.27	1.75	1.60	1.66	2.24	3.05	2.86	2.84	2.95	2.69
20	2.94	2.50	2.26	1.74	1.60	1.69	2.25	3.01	2.81	2.83	2.93	2.76
21	2.95	2.50	2.25	1.72	1.60	1.73	2.31	3.05	2.82	2.86	2.91	2.75
22	2.95	2.49	2.22	1.70	1.60	1.74	2.39	3.00	2.81	2.86	2.93	2.70
23	2.97	2.45	2.21	1.68	1.60	1.73	2.38	2.97	2.82	2.83	2.92	2.71
24	2.96	2.47	2.19	1.66	1.61	1.73	2.38	2.95	2.81	2.80	2.82	2.66
25	2.96	2.46	2.16	1.64	1.61	1.74	2.45	2.91	2.79	2.77	2.84	2.68
26	2.93	2.47	2.13	1.63	1.61	1.77	2.46	2.88	2.75	2.75	2.85	2.61
27	2.95	2.43	2.11	1.61	1.61	1.80	2.45	2.85	2.78	2.79	2.85	2.59
28	2.96	2.40	2.10	1.61	1.62	1.86	2.50	2.79	2.79	2.76	2.78	2.64
29	2.95	2.36	2.10	1.63	---	1.94	2.58	2.78	2.77	2.75	2.78	2.61
30	2.93	2.33	2.06	1.62	---	1.98	2.60	2.76	2.77	2.74	2.78	2.59
31	2.89	---	2.05	1.65	---	2.01	---	2.83	---	2.80	2.75	---
MEAN	2.97	2.57	2.26	1.80	1.61	1.69	2.29	2.89	2.79	2.82	2.93	2.68
MAX	3.08	2.88	2.40	2.05	1.67	2.01	2.60	3.09	2.88	2.92	3.05	2.83
MIN	2.89	2.33	2.05	1.61	1.59	1.59	2.03	2.65	2.72	2.74	2.75	2.55

## 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, 3.10 ft, May 12; minimum recorded, 1.49 ft, Feb. 21.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.91	2.95	2.38	1.95	1.61	1.56	1.95	2.55	2.71	2.71	2.81	2.69
2	2.88	2.88	2.31	1.95	1.61	1.57	1.90	2.54	2.70	2.71	2.86	2.68
3	2.88	2.81	2.31	1.94	1.62	1.57	1.88	2.58	2.68	2.74	2.86	2.69
4	3.03	2.77	2.30	1.91	1.64	1.58	1.89	2.55	2.66	2.76	2.88	2.62
5	3.08	2.72	2.30	1.90	1.60	1.58	2.05	2.53	2.68	2.76	2.91	2.61
6	3.08	2.74	2.29	1.89	1.58	1.58	2.07	2.67	2.66	2.76	2.93	2.60
7	3.05	2.70	2.30	1.86	1.57	1.57	1.96	2.72	2.64	2.85	2.94	2.57
8	3.01	2.64	2.30	1.85	1.56	1.57	2.07	2.76	2.68	2.85	2.93	2.55
9	2.99	2.60	2.28	1.86	1.55	1.58	2.15	2.73	2.75	2.79	2.96	2.54
10	2.96	2.57	2.28	1.86	1.54	1.56	2.16	2.78	2.76	2.86	2.99	2.52
11	2.96	2.53	2.28	1.83	1.55	1.54	2.16	3.08	2.78	2.96	2.94	2.51
12	2.97	2.55	2.27	1.79	1.55	1.54	2.15	3.10	2.77	2.89	2.95	2.51
13	3.08	2.49	2.26	1.78	1.55	1.55	2.15	3.05	2.79	2.86	2.97	2.64
14	2.96	2.43	2.25	1.77	1.54	1.55	2.17	3.03	2.77	2.86	2.97	2.78
15	2.91	2.39	2.23	1.75	1.55	1.56	2.14	3.02	2.75	2.88	3.00	2.83
16	2.88	2.39	2.22	1.73	1.55	1.57	1.97	3.01	2.75	2.86	2.98	2.79
17	2.89	2.41	2.18	1.72	1.55	1.59	2.03	3.00	2.74	2.82	2.94	2.76
18	2.91	2.43	2.18	1.71	1.55	1.60	2.11	2.99	2.74	2.79	2.94	2.71
19	2.96	2.46	2.22	1.70	1.55	1.61	2.15	2.99	2.72	2.83	2.93	2.78
20	2.92	2.44	2.23	1.68	1.54	1.63	2.26	3.01	2.75	2.83	2.91	2.72
21	2.87	2.41	2.23	1.66	1.54	1.67	2.30	2.96	2.77	2.78	2.92	2.66
22	2.88	2.44	2.22	1.65	1.55	1.69	2.31	2.93	2.78	2.75	2.88	2.73
23	2.86	2.47	2.20	1.64	1.56	1.67	2.29	2.91	2.79	2.74	2.82	2.77
24	2.87	2.48	2.13	1.61	1.56	1.66	2.30	2.88	2.80	2.77	2.83	2.73
25	2.85	2.46	2.11	1.60	1.56	1.69	2.31	2.84	2.81	2.79	2.83	2.69
26	2.92	2.38	2.09	1.59	1.56	1.72	2.37	2.81	2.89	2.77	2.81	2.62
27	2.92	2.40	2.06	1.55	1.56	1.74	2.44	2.79	2.80	2.71	2.76	2.70
28	2.87	2.43	2.04	1.56	1.56	1.82	2.48	2.75	2.69	2.70	2.74	2.62
29	2.82	2.42	2.02	1.58	---	1.90	2.50	2.72	2.76	2.71	2.75	2.60
30	2.85	2.40	2.01	1.57	---	1.92	2.50	2.72	2.73	2.72	2.72	2.63
31	2.90	---	2.01	1.60	---	1.94	---	2.64	---	2.77	2.71	---
MEAN	2.93	2.54	2.21	1.74	1.56	1.64	2.17	2.83	2.74	2.79	2.88	2.66
MAX	3.08	2.95	2.38	1.95	1.64	1.94	2.50	3.10	2.89	2.96	3.00	2.83
MIN	2.82	2.38	2.01	1.55	1.54	1.54	1.88	2.53	2.64	2.70	2.71	2.51

## 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.--Sontek Argonaut-SL doppler velocity meter.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,080	4,960	2,330	3,660	e1,400	1,640	4,050	5,090	6,020	3,600	2,780	1,710
2	1,980	4,820	2,610	3,570	e1,400	1,730	3,960	5,030	5,580	3,010	2,320	1,700
3	1,940	4,830	2,600	3,570	e1,800	1,700	3,960	5,080	5,040	1,850	2,450	1,700
4	2,590	5,060	2,510	3,650	e2,800	1,640	3,990	5,140	4,810	1,700	2,380	1,360
5	3,300	5,690	2,010	3,620	3,570	1,650	4,030	4,950	4,880	1,740	2,260	1,490
6	3,370	5,580	2,010	3,630	3,020	1,880	4,080	4,380	4,940	1,800	2,230	1,640
7	3,020	5,750	2,030	3,620	2,570	2,560	4,040	4,930	4,980	1,960	2,280	1,590
8	3,790	5,730	2,030	3,620	e2,400	2,570	4,130	5,960	5,000	1,940	2,150	1,400
9	4,300	5,620	2,040	3,290	e2,400	2,580	4,350	7,020	5,030	1,930	2,210	1,470
10	4,370	5,520	2,030	2,640	e2,000	2,560	4,390	7,310	5,960	1,950	2,270	1,440
11	4,530	5,350	2,200	2,710	1,800	2,600	4,390	8,190	6,740	2,220	2,160	1,440
12	4,450	5,270	2,960	3,000	e1,400	2,200	4,370	7,920	7,110	3,420	2,150	1,540
13	4,330	5,270	2,950	2,870	e1,600	1,710	4,390	8,610	7,110	3,390	2,240	1,870
14	4,420	4,670	2,910	2,810	e1,100	1,640	4,520	8,770	7,100	2,820	2,320	2,070
15	4,320	3,500	2,880	2,660	e1,400	1,680	4,510	8,690	7,030	2,190	2,290	2,370
16	3,910	2,960	3,240	2,720	e1,500	1,980	4,730	8,860	6,580	1,940	2,240	3,020
17	4,010	2,910	3,730	2,710	e1,500	2,240	4,780	9,110	6,120	1,930	2,150	3,130
18	4,280	2,950	3,960	2,720	e1,500	2,840	4,460	9,120	5,510	1,860	2,180	3,100
19	4,070	3,040	3,980	2,690	e1,600	3,000	4,530	9,130	4,670	1,920	2,260	2,890
20	4,020	3,030	4,010	2,650	e1,400	3,410	4,720	8,960	4,280	1,960	2,270	2,840
21	4,070	2,810	3,960	2,670	e1,500	4,300	4,650	9,040	3,850	1,930	2,200	2,870
22	3,980	2,860	3,950	e2,500	1,850	5,460	4,620	8,980	3,850	1,790	2,040	2,980
23	3,840	2,970	3,740	e2,400	1,810	5,520	4,690	8,780	3,830	1,670	1,960	2,890
24	3,920	2,930	3,870	e2,400	1,820	5,040	4,250	8,700	3,820	1,810	2,020	2,950
25	3,990	2,910	3,880	e2,400	1,770	4,350	3,540	8,660	3,900	2,010	2,000	2,800
26	3,990	2,860	3,830	e2,400	1,770	3,660	3,620	8,580	3,870	2,050	1,970	2,880
27	3,930	2,820	3,850	e2,200	1,770	3,860	3,840	8,530	3,760	1,810	1,840	2,790
28	3,880	2,840	3,850	e1,200	1,700	4,050	3,800	8,480	3,690	1,700	1,820	2,710
29	3,850	2,870	3,790	e900	---	4,020	4,190	7,710	3,680	1,780	1,810	2,700
30	4,270	2,680	3,800	e1,400	---	3,990	4,860	7,120	3,650	1,970	1,760	2,710
31	5,020	---	3,760	e1,500	---	4,000	---	6,000	---	2,600	1,740	---
TOTAL	117,820	121,060	97,300	84,380	52,150	92,060	128,440	232,830	152,390	66,250	66,750	68,050
MEAN	3,801	4,035	3,139	2,722	1,862	2,970	4,281	7,511	5,080	2,137	2,153	2,268
MAX	5,020	5,750	4,010	3,660	3,570	5,520	4,860	9,130	7,110	3,600	2,780	3,130
MIN	1,940	2,680	2,010	900	1,100	1,640	3,540	4,380	3,650	1,670	1,740	1,360
CFSM	0.64	0.68	0.53	0.46	0.31	0.50	0.72	1.26	0.85	0.36	0.36	0.38
IN.	0.74	0.76	0.61	0.53	0.33	0.58	0.80	1.46	0.95	0.41	0.42	0.43

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2003, BY WATER YEAR (WY)

MEAN	3,839	4,577	4,081	3,691	3,701	4,798	6,365	5,794	5,615	3,848	2,890	3,194
MAX	13,510	7,863	7,509	5,575	5,422	7,702	11,920	11,900	13,300	15,110	6,259	8,899
(WY)	(1987)	(1996)	(1993)	(1987)	(1987)	(1994)	(1993)	(1993)	(1993)	(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 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1986 - 2003

ANNUAL TOTAL	1,552,140	1,279,480	
ANNUAL MEAN	4,252	3,505	4,328
HIGHEST ANNUAL MEAN			8,107
LOWEST ANNUAL MEAN			2,995
HIGHEST DAILY MEAN	12,600	May 4	9,130
LOWEST DAILY MEAN	1,440	Jul 23	(e)900
ANNUAL SEVEN-DAY MINIMUM	1,660	Aug 18	1,370
ANNUAL RUNOFF (CFSM)	0.71		0.59
ANNUAL RUNOFF (INCHES)	9.70		8.00
10 PERCENT EXCEEDS	7,890		5,650
50 PERCENT EXCEEDS	3,710		3,000
90 PERCENT EXCEEDS	1,790		1,700

(e) Estimated due to ice effect or missing record

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,050	5,260	2,040	3,680	1,410	1,530	4,390	5,300	6,270	3,590	3,710	1,390
2	1,890	5,420	2,530	3,540	1,400	1,510	4,270	5,300	5,830	2,910	2,560	1,410
3	1,750	5,340	2,410	3,690	1,910	1,580	4,280	5,240	5,160	1,420	2,760	1,270
4	2,410	5,570	2,480	3,820	2,850	1,500	4,300	5,320	4,790	1,460	2,680	847
5	3,560	6,330	1,780	3,900	3,560	1,530	4,320	5,390	5,040	1,850	2,190	1,280
6	3,410	6,380	1,810	3,840	2,990	1,750	4,270	4,720	5,060	1,770	1,980	1,290
7	2,750	6,160	1,980	3,900	2,520	2,820	4,450	4,760	5,240	1,670	2,000	1,420
8	3,240	6,030	2,020	3,860	2,440	2,450	3,890	6,210	5,220	1,720	1,780	1,150
9	4,340	5,800	2,040	3,460	2,420	2,520	4,730	6,740	5,220	1,660	1,880	1,120
10	3,970	5,710	1,980	2,340	2,100	2,700	4,830	6,870	5,920	1,590	2,200	1,230
11	4,960	5,480	2,060	2,100	1,390	2,590	4,750	8,000	6,950	2,020	1,860	1,190
12	4,700	5,220	3,370	2,950	1,440	2,020	4,840	7,500	6,790	3,490	1,860	1,440
13	4,200	5,370	3,130	2,620	1,660	1,690	4,670	9,440	7,450	3,230	2,010	1,890
14	4,240	4,640	2,990	2,630	1,140	1,580	4,100	9,050	6,940	2,560	2,050	2,350
15	4,430	3,460	3,300	2,400	1,420	1,870	4,530	8,620	6,800	2,040	1,900	2,220
16	3,720	2,900	3,340	2,570	1,520	1,990	4,700	9,210	6,410	1,520	2,040	3,010
17	3,960	2,730	3,990	2,540	1,500	2,040	4,740	9,190	6,000	1,590	1,910	3,180
18	4,280	2,930	4,280	2,470	1,520	2,810	4,510	9,200	5,630	1,750	1,910	3,160
19	4,340	2,880	4,230	2,540	1,600	2,880	4,790	9,500	4,470	1,750	1,990	2,870
20	4,060	2,990	4,130	2,430	1,460	3,590	4,910	9,460	4,510	1,610	2,080	2,860
21	4,170	2,600	4,120	2,490	1,510	4,150	4,910	9,210	3,590	1,770	2,070	2,980
22	4,260	2,590	4,060	2,450	1,330	5,930	4,750	9,210	3,620	1,570	1,550	2,930
23	3,270	2,910	3,690	2,500	1,540	5,920	5,010	9,150	3,410	1,320	1,560	2,850
24	4,040	2,720	3,600	2,500	1,460	5,560	4,620	9,180	3,720	1,560	1,560	3,100
25	4,060	2,780	4,020	2,470	1,380	4,820	3,610	9,210	3,910	1,640	1,560	2,710
26	4,290	2,900	3,910	2,440	1,390	3,950	3,760	9,090	3,810	1,900	1,530	2,740
27	4,320	2,680	3,920	2,270	1,520	4,110	3,860	9,100	3,890	1,620	1,460	2,720
28	4,180	2,930	3,960	1,290	1,440	4,260	3,890	9,060	3,540	1,440	1,450	2,470
29	4,160	2,890	3,910	377	---	4,410	4,260	8,400	3,620	1,530	1,490	2,650
30	4,210	2,630	3,950	1,440	---	4,360	5,060	7,230	3,300	1,970	1,410	2,530
31	5,030	---	3,970	1,530	---	4,820	---	5,910	---	3,440	1,390	---
TOTAL	118,250	124,230	99,000	83,037	49,820	95,240	134,000	239,770	152,110	60,960	60,380	64,257
MEAN	3,815	4,141	3,194	2,679	1,779	3,072	4,467	7,735	5,070	1,966	1,948	2,142
MAX	5,030	6,380	4,280	3,900	3,560	5,930	5,060	9,500	7,450	3,590	3,710	3,180
MIN	1,750	2,590	1,780	377	1,140	1,500	3,610	4,720	3,300	1,320	1,390	847

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 2003, BY WATER YEAR (WY)

MEAN	3,308	3,973	3,986	3,977	4,040	4,925	7,162	6,102	5,109	3,453	2,672	2,828
MAX	14,230	12,740	9,879	7,831	7,831	12,440	19,360	20,160	13,330	15,600	9,623	11,020
(WY)	(1987)	(1985)	(1983)	(1960)	(1939)	(1973)	(1929)	(1960)	(1993)	(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 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1896 - 2003

ANNUAL TOTAL	1,599,550	1,281,054	
ANNUAL MEAN	4,382	3,510	4,302
HIGHEST ANNUAL MEAN			8,427
LOWEST ANNUAL MEAN			1,626
HIGHEST DAILY MEAN	12,200	May 3	24,000
LOWEST DAILY MEAN	1,220	Jul 23	138
ANNUAL SEVEN-DAY MINIMUM	1,470	Jul 18	499
10 PERCENT EXCEEDS	8,100		7,800
50 PERCENT EXCEEDS	3,580		3,590
90 PERCENT EXCEEDS	1,640		1,670

## STREAMS TRIBUTARY TO LAKE MICHIGAN

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.--Two-path Acoustical Velocity Meter (AVM) system replaced with side-looking velocity meter on Dec. 19, 2002.

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,320	5,920	1,010	2,290	1,530	1,200	3,890	3,940	5,380	3,230	4,920	1,580
2	1,480	4,940	3,100	2,520	1,410	1,450	2,820	5,010	5,210	3,130	3,310	1,580
3	1,960	5,950	3,000	3,940	1,920	1,310	3,040	4,820	4,410	1,150	4,280	1,650
4	3,310	5,770	2,830	3,720	3,170	1,440	3,870	4,080	4,730	1,500	4,420	1,300
5	4,050	6,290	2,660	3,650	3,180	1,570	4,210	4,480	4,420	1,180	2,950	1,630
6	3,530	6,610	2,650	3,540	3,600	1,600	4,160	5,590	4,330	526	2,450	678
7	3,910	7,520	2,320	4,250	2,630	2,330	3,460	4,200	4,920	1,480	2,700	2,050
8	2,890	5,550	1,540	3,220	2,860	1,920	3,920	5,790	5,400	2,220	2,760	2,380
9	4,660	6,590	3,170	3,750	2,770	3,110	4,690	6,900	4,910	711	3,110	1,240
10	4,950	5,960	2,460	3,100	2,670	2,620	4,340	7,820	6,340	1,990	2,280	1,170
11	5,290	6,560	2,130	1,630	1,750	2,600	4,360	9,040	7,870	2,830	1,910	1,090
12	5,720	5,850	3,390	3,150	1,480	2,000	4,570	9,720	6,600	2,860	2,940	1,640
13	3,900	6,080	3,890	2,800	1,510	1,570	4,380	9,040	6,920	3,190	3,070	1,990
14	5,720	5,510	3,780	3,080	1,380	1,710	3,390	8,680	6,910	2,740	2,340	3,230
15	4,330	4,920	2,720	2,980	1,060	1,870	3,200	8,510	6,470	2,410	1,690	2,330
16	4,480	3,360	3,570	2,830	1,790	2,650	4,420	8,580	6,400	1,840	2,050	2,700
17	4,530	3,650	4,100	2,420	1,520	3,060	5,700	8,910	6,040	1,150	3,140	2,920
18	5,450	3,480	e4,070	3,040	1,580	2,140	4,810	9,150	5,210	2,140	2,170	2,590
19	3,640	3,420	e4,020	2,370	1,480	1,640	4,390	8,920	e4,720	1,650	1,670	3,620
20	3,380	3,200	3,980	2,880	1,050	3,730	5,230	9,840	4,640	1,150	1,990	2,260
21	4,770	3,010	3,790	2,450	1,580	3,920	5,160	8,510	3,260	1,610	1,970	2,190
22	3,990	3,380	3,500	2,990	1,090	5,990	4,520	9,110	3,500	2,150	1,910	3,310
23	4,960	3,160	3,650	2,450	1,410	5,980	4,810	8,840	2,480	2,910	2,230	2,900
24	4,490	3,750	3,280	2,990	1,640	5,500	4,410	8,540	3,050	1,670	1,850	1,890
25	4,690	2,640	4,640	2,960	1,650	4,810	2,780	8,700	2,990	1,260	1,780	3,140
26	4,930	3,130	3,620	2,640	1,490	4,040	3,930	8,580	3,880	1,380	1,520	2,010
27	4,200	3,820	3,260	2,620	1,590	3,290	3,010	8,690	3,170	2,370	1,760	2,680
28	4,530	3,840	3,270	1,930	1,650	4,550	3,760	8,360	2,840	2,020	1,470	2,540
29	4,730	2,740	3,310	811	---	4,850	3,090	7,350	3,780	1,310	2,100	2,390
30	4,720	2,680	e3,420	1,280	---	4,180	4,600	6,320	2,660	2,110	1,610	2,400
31	6,550	---	e3,000	1,920	---	4,470	---	7,170	---	4,480	1,420	---
TOTAL	131,060	139,280	99,130	86,201	52,440	93,100	122,920	233,190	143,440	62,347	75,770	65,078
MEAN	4,228	4,643	3,198	2,781	1,873	3,003	4,097	7,522	4,781	2,011	2,444	2,169
MAX	6,550	7,520	4,640	4,250	3,600	5,990	5,700	9,840	7,870	4,480	4,920	3,620
MIN	1,320	2,640	1,010	811	1,050	1,200	2,780	3,940	2,480	526	1,420	678
CFSM	0.67	0.73	0.51	0.44	0.30	0.47	0.65	1.19	0.76	0.32	0.39	0.34
IN.	0.77	0.82	0.58	0.51	0.31	0.55	0.72	1.37	0.84	0.37	0.45	0.38

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

MEAN	3,409	4,795	4,365	3,797	3,778	5,521	7,291	6,519	6,738	4,490	3,362	3,204
MAX	8,504	8,668	9,446	6,092	5,814	7,827	13,660	13,220	14,780	15,620	6,855	6,172
(WY)	(1996)	(1993)	(1993)	(1993)	(1996)	(1994)	(1993)	(1993)	(1993)	(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 2002 CALENDAR YEAR

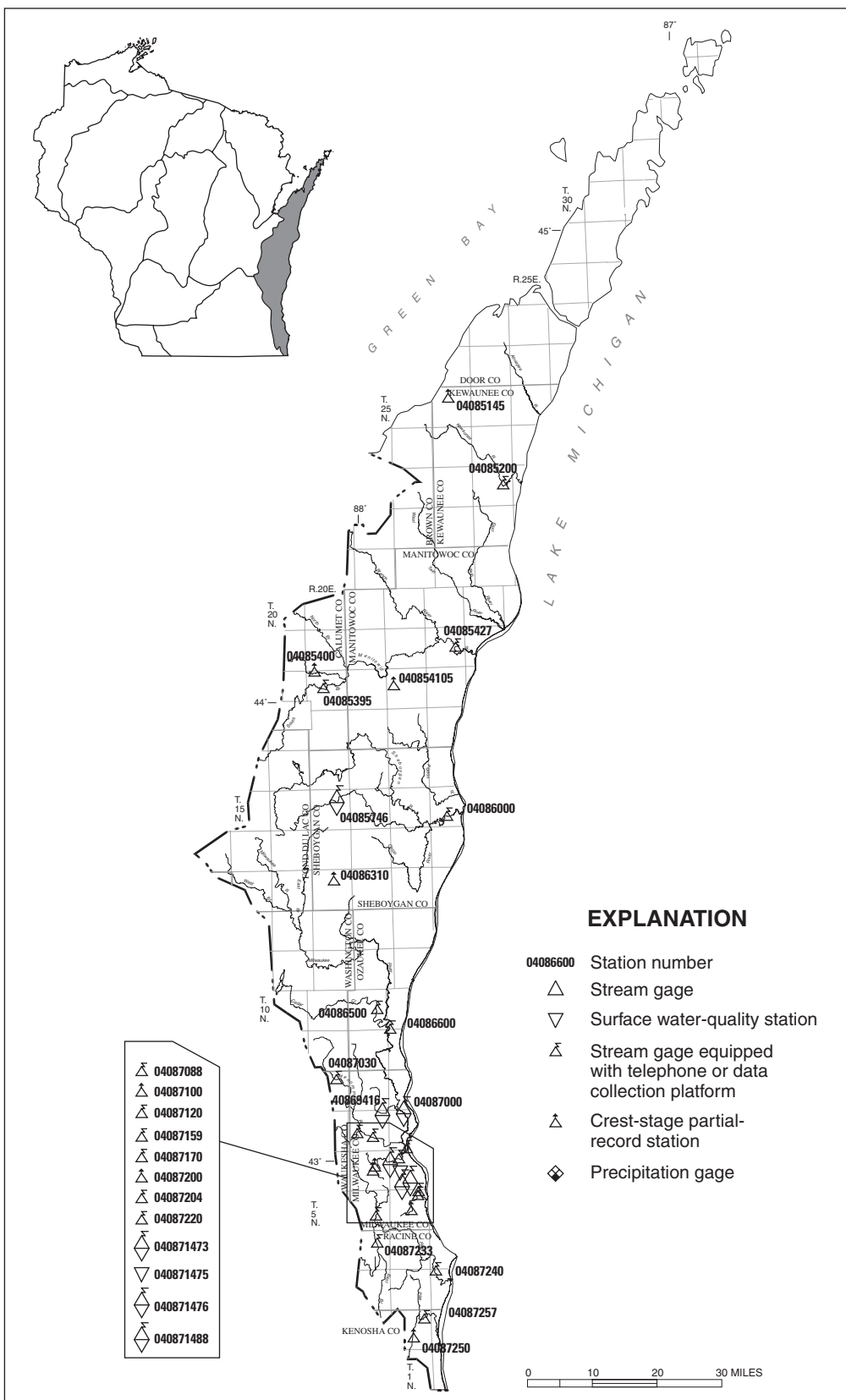
## FOR 2003 WATER YEAR

## WATER YEARS 1989 - 2003

ANNUAL TOTAL	1,661,410	1,303,956	4,772
ANNUAL MEAN	4,552	3,572	9,102
HIGHEST ANNUAL MEAN			1993
LOWEST ANNUAL MEAN			3,512
			2000
HIGHEST DAILY MEAN	12,500	May 4	9,840
LOWEST DAILY MEAN	1,010	Dec 1	526
			May 20
ANNUAL SEVEN-DAY MINIMUM	1,530	Aug 22	1,250
			Jul 6
ANNUAL RUNOFF (CFSM)	0.72		0.56
ANNUAL RUNOFF (INCHES)	9.76		7.66
10 PERCENT EXCEEDS	8,160		9,080
50 PERCENT EXCEEDS	3,840		3,170
90 PERCENT EXCEEDS	1,830		1,510

(e) Estimated due to missing record





**EXPLANATION**

- 04086600 Station number
- △ Stream gage
- ▽ Surface water-quality station
- △ Stream gage equipped with telephone or data collection platform
- △ Crest-stage partial-record station
- ◇ Precipitation gage

- △ 04087088
- △ 04087100
- △ 04087120
- △ 04087159
- △ 04087170
- △ 04087200
- △ 04087204
- △ 04087220
- ◇ 040871473
- ▽ 040871475
- △ 040871476
- ◇ 040871488

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

**LAKE MICHIGAN BASIN**

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04085200 KEWAUNEE RIVER NEAR KEWAUNEE, WI

LOCATION.--Lat 44°27'30", long 87°33'23", in SE ¼ SW ¼ sec.14, T.23 N., R.24 E., Kewaunee County, Hydrologic Unit 04030102, on left bank just upstream from bridge on County Trunk Highway F, 2.3 mi west of Kewaunee, and about 7.0 mi upstream from mouth.

DRAINAGE AREA.--127 mi<sup>2</sup>.

PERIOD OF RECORD.--Annual maximum, water years 1958-65, and occasional low-flow measurements, water years 1963-64. September 1964 to June 1996, November 1997 to current year. No winter records for years 1965 and 1966.

REVISED RECORDS.--WDR WI-79-1: Drainage area. WDR WI-85-1: 1962(M), 1965(M), 1967-69(M), 1971(M), 1973-74(M), 1976(M), 1978(M), 1980-82(M).

GAGE.--Water-stage recorder. Datum of gage is 579.64 ft above NGVD of 1929 (Wisconsin State Highway Commission benchmark). Apr. 3, 1957, to Sept. 2, 1964, crest-stage gage only at same site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES\*

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	20	14	11	7.7	e12	54	52	28	19	31	9.0
2	9.7	20	e13	12	9.9	e12	50	50	26	18	29	8.4
3	9.7	20	13	11	e15	e11	44	44	25	17	25	8.1
4	17	19	13	9.5	e14	e11	39	40	24	16	29	7.7
5	e32	20	13	11	e14	e10	34	54	23	16	34	7.4
6	27	20	13	11	e13	e10	32	112	22	15	25	7.3
7	22	19	e12	11	e12	e9.6	33	98	31	15	20	7.2
8	20	20	e12	11	e12	e9.6	30	95	45	15	17	7.5
9	20	19	12	10	e11	e9.0	34	84	53	14	17	7.6
10	20	19	13	9.2	e11	e9.0	56	77	108	29	15	7.8
11	20	18	13	8.5	e10	e8.4	84	208	340	46	20	7.5
12	19	18	13	10	e10	e8.2	78	487	258	37	18	7.8
13	17	18	13	8.6	e9.6	e8.0	60	291	146	26	15	10
14	16	18	14	7.5	e9.0	e12	51	162	85	21	13	27
15	e15	17	14	7.1	e9.0	e30	56	111	56	19	13	50
16	e14	17	13	7.0	e9.0	e150	524	83	43	17	12	26
17	e13	17	13	e6.8	e9.0	e300	976	68	35	17	12	19
18	e17	16	15	e6.6	e8.6	e210	457	59	31	16	11	15
19	e15	19	18	e6.4	e8.6	e170	232	53	29	15	11	13
20	e14	21	19	e6.2	e8.4	e150	300	50	26	15	10	12
21	e16	20	15	e6.2	e11	e170	371	44	23	27	10	12
22	e23	19	14	e6.0	e16	e180	243	40	21	30	10	12
23	e30	18	12	e6.0	e13	e160	163	37	21	22	9.9	12
24	e24	17	12	5.8	e12	e140	120	35	19	18	10	11
25	e22	17	13	6.1	e12	84	97	33	19	16	10	11
26	e24	16	12	6.4	e11	58	79	30	18	29	11	11
27	e22	15	11	e6.4	e11	49	67	29	17	35	11	12
28	e21	16	11	6.6	e12	72	59	29	19	26	10	12
29	e21	16	11	6.7	---	124	53	29	22	20	11	12
30	e20	15	12	7.1	---	90	49	29	22	17	9.6	13
31	e20	---	12	7.7	---	64	---	29	---	19	9.2	---
TOTAL	590.4	544	408	252.4	308.8	2,340.8	4,525	2,642	1,635	662	488.7	383.3
MEAN	19.0	18.1	13.2	8.14	11.0	75.5	151	85.2	54.5	21.4	15.8	12.8
MAX	32	21	19	12	16	300	976	487	340	46	34	50
MIN	9.7	15	11	5.8	7.7	8.0	30	29	17	14	9.2	7.2
CFSM	0.15	0.14	0.10	0.06	0.09	0.59	1.19	0.67	0.43	0.17	0.12	0.10
IN.	0.17	0.16	0.12	0.07	0.09	0.69	1.33	0.77	0.48	0.19	0.14	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

MEAN	43.6	61.8	49.6	34.8	61.3	243	198	82.5	85.4	39.4	32.0	51.5
MAX	221	458	226	265	314	567	450	354	483	342	113	454
(WY)	(1985)	(1986)	(1993)	(1973)	(1984)	(1986)	(1993)	(1973)	(1990)	(1993)	(1975)	(1986)
MIN	10.1	10.9	9.10	8.14	11.0	38.8	26.0	21.2	12.3	8.29	7.90	8.98
(WY)	(1967)	(1977)	(1977)	(2003)	(2003)	(2000)	(2000)	(1977)	(1988)	(1965)	(1970)	(1966)

## 04085200 KEWAUNEE RIVER NEAR KEWAUNEE, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	20,823.4		14,780.4			
ANNUAL MEAN	57.1		40.5		81.8	
HIGHEST ANNUAL MEAN					178	1993
LOWEST ANNUAL MEAN					27.8	2000
HIGHEST DAILY MEAN	762	Apr 29	976	Apr 17	5,950	Jun 23, 1990
LOWEST DAILY MEAN	9.5	Sep 13	5.8	Jan 24	5.8	Jan 24, 2003
ANNUAL SEVEN-DAY MINIMUM	9.7	Sep 12	(a)6.1	Jan 19	(a)6.1	Jan 19, 2003
MAXIMUM PEAK FLOW			1,100	Apr 17	(b)8,570	Jun 23, 1990
MAXIMUM PEAK STAGE			11.57	Apr 17	(c)16.03	Mar 30, 1960
INSTANTANEOUS LOW FLOW			5.4	Jan 22-24	(d)3.8	Dec 15, 1997
ANNUAL RUNOFF (CFSM)	0.45		0.32		0.64	
ANNUAL RUNOFF (INCHES)	6.10		4.33		8.75	
10 PERCENT EXCEEDS	134		84		162	
50 PERCENT EXCEEDS	21		17		30	
90 PERCENT EXCEEDS	12		8.6		12	

- (a) Ice affected  
(b) Gage height, 16.00 ft, from crest-stage gage  
(c) Backwater from ice  
(d) Result of freezeup  
(e) Estimated due to ice effect or missing record

## 04085395 SOUTH BRANCH MANITOWOC RIVER AT HAYTON, WI

LOCATION.--Lat 44°01'29", long 88°07'05", in SW ¼ SW ¼ sec.16, T.18 N., R.20 E., Calumet County, Hydrologic Unit 04030101, on left bank 100 ft downstream from Weeks Road bridge, at Hayton.

DRAINAGE AREA.--109 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 808 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	15	e16	e4.4	e3.2	e3.3	41	51	37	18	41	3.3
2	9.8	14	e16	e4.4	e3.3	e3.6	40	48	31	16	53	3.4
3	12	14	e14	e4.4	e3.1	e3.6	37	41	27	15	48	3.6
4	29	13	e13	e4.4	e3.0	e3.5	36	36	25	16	90	2.8
5	39	14	e12	e4.4	e3.0	e3.4	26	66	23	14	72	2.8
6	31	14	e11	e4.4	e3.0	e3.3	29	93	22	23	45	3.1
7	24	13	e11	e4.4	e3.0	e3.1	32	91	27	49	30	2.6
8	22	13	e11	e4.4	e3.0	e3.2	27	93	31	25	26	2.6
9	20	14	e11	e4.4	e3.0	e3.3	30	100	37	19	21	3.0
10	17	14	e11	e4.4	e2.9	e3.5	39	99	48	41	18	2.9
11	16	15	e11	e4.2	e2.9	e13	46	357	62	78	18	2.7
12	15	16	e12	e3.8	e3.0	e14	46	378	48	51	17	4.9
13	15	16	e12	e3.6	e3.0	e16	43	310	38	32	15	14
14	14	16	e12	e3.5	e3.0	e30	42	249	32	25	14	48
15	15	16	e12	e3.5	e2.9	e61	44	224	28	22	14	49
16	16	17	e12	e3.4	e3.0	e90	63	211	24	21	13	33
17	21	17	e10	e3.2	e3.1	e110	64	195	22	19	11	19
18	21	19	e8.0	e3.0	e3.3	e80	54	175	24	18	10	14
19	20	28	e7.4	e3.0	e3.7	e52	49	151	24	16	9.9	12
20	17	26	e7.0	e3.0	e4.2	48	58	134	20	15	9.4	10
21	19	26	e6.5	e3.0	e4.8	48	64	110	18	17	9.0	8.7
22	21	25	e6.0	e3.0	e4.1	61	61	91	17	19	7.7	10
23	20	24	e5.6	e3.0	e3.8	68	55	77	16	15	7.1	9.7
24	19	23	e5.3	e3.2	e3.5	66	50	64	17	14	6.3	9.0
25	19	e22	e4.8	e3.1	e3.2	59	46	54	17	12	5.6	7.4
26	21	e19	e4.7	e3.0	e3.1	52	41	45	17	12	6.5	8.2
27	19	e19	e4.8	e3.0	e3.1	49	37	40	16	11	6.0	9.9
28	18	e18	e4.9	e3.0	e3.0	58	34	35	19	11	5.8	9.7
29	17	e18	e4.9	e3.0	---	67	33	34	30	9.5	6.9	9.6
30	16	e17	e4.8	e3.0	---	51	33	33	21	9.6	5.0	10
31	16	---	e4.6	e3.0	---	44	---	42	---	15	3.5	---
TOTAL	588.7	535	286.3	111.5	91.2	1,170.8	1,300	3,727	818	678.1	644.7	328.9
MEAN	19.0	17.8	9.24	3.60	3.26	37.8	43.3	120	27.3	21.9	20.8	11.0
MAX	39	28	16	4.4	4.8	110	64	378	62	78	90	49
MIN	9.8	13	4.6	3.0	2.9	3.1	26	33	16	9.5	3.5	2.6
CFSM	0.17	0.16	0.08	0.03	0.03	0.35	0.40	1.10	0.25	0.20	0.19	0.10
IN.	0.20	0.18	0.10	0.04	0.03	0.40	0.44	1.27	0.28	0.23	0.22	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

MEAN	18.6	22.3	16.5	12.3	40.8	95.6	123	72.5	66.6	55.2	21.1	25.0
MAX	40.0	47.5	35.4	21.6	86.7	189	328	128	170	232	49.4	137
(WY)	(2001)	(1996)	(2002)	(1997)	(1999)	(1997)	(2001)	(2001)	(1996)	(1993)	(1999)	(2000)
MIN	7.17	10.9	8.74	3.60	3.26	37.8	43.3	30.1	12.1	2.46	8.48	4.02
(WY)	(1995)	(1995)	(1995)	(2003)	(2003)	(2003)	(2003)	(1995)	(1995)	(1995)	(1995)	(1998)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1993 - 2003

ANNUAL TOTAL	14,336.0	10,280.2	
ANNUAL MEAN	39.3	28.2	47.0
HIGHEST ANNUAL MEAN			99.8
LOWEST ANNUAL MEAN			17.3
HIGHEST DAILY MEAN	208	Mar 15	378
LOWEST DAILY MEAN	4.6	Dec 31	2.6
ANNUAL SEVEN-DAY MINIMUM	4.8	Dec 25	2.8
MAXIMUM PEAK FLOW			443
MAXIMUM PEAK STAGE			5.50
INSTANTANEOUS LOW FLOW			2.3
ANNUAL RUNOFF (CFSM)	0.36	0.26	0.43
ANNUAL RUNOFF (INCHES)	4.89	3.51	5.86
10 PERCENT EXCEEDS	105	60	110
50 PERCENT EXCEEDS	17	16	22
90 PERCENT EXCEEDS	9.3	3.1	7.0

(a) Also occurred July 31 to Aug. 1, 1995

(e) Estimated due to ice effect or missing record

04085427 MANITOWOC RIVER AT MANITOWOC, WI

LOCATION.--Lat 44°06'26", long 87°42'55", in NE 1/4 NW 1/4 sec.23, T.19 N., R.23 E., Manitowoc County, Hydrologic Unit 04030101, on right bank 300 ft upstream from bridge on County Trunk Highway JJ, just west of the Manitowoc city limits and 6.6 mi upstream from mouth.

DRAINAGE AREA.--526 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1972 to September 1996, December 1997 to current year.

REVISED RECORDS.--WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 610.12 ft above NGVD of 1929.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	56	e38	e37	e20	e24	203	139	147	61	132	27
2	29	60	e43	e35	e23	e22	181	143	141	58	169	25
3	30	59	e40	e36	e25	e20	165	150	126	53	168	24
4	62	49	e38	e39	e24	e19	154	147	110	48	367	23
5	65	45	e37	e39	e22	e17	e100	206	97	45	377	22
6	79	44	e38	e37	e21	e17	e120	321	94	42	401	25
7	68	47	e41	e41	e19	e18	e130	353	95	42	421	23
8	72	51	e39	e44	e20	e17	e110	364	105	38	425	22
9	59	49	e42	e46	e19	e15	141	378	117	53	418	23
10	55	47	e44	e42	e18	e13	163	388	163	74	399	22
11	53	43	e45	e39	e18	e14	178	1,550	213	84	374	22
12	48	44	e45	e36	e17	e14	177	1,310	239	106	328	22
13	46	46	e45	e33	e18	e14	179	1,120	241	108	275	28
14	51	47	e43	e30	e18	e17	174	1,010	227	101	211	40
15	49	46	e38	e27	e17	e50	176	952	192	88	154	64
16	38	46	e34	e26	e17	e380	183	895	159	76	114	92
17	37	44	e36	e25	e19	e430	207	845	188	67	88	89
18	41	43	e39	e23	e19	e430	250	803	224	55	71	76
19	43	52	e43	e22	e21	e420	251	751	172	46	60	63
20	49	56	e42	e20	e22	e400	251	718	121	44	51	61
21	59	60	e39	e19	e25	e390	269	678	93	49	45	57
22	54	59	e37	e18	e24	e380	270	617	79	47	41	46
23	55	63	e34	e17	e21	e380	261	566	69	42	41	38
24	57	61	e32	e16	e19	e400	239	515	63	40	35	42
25	57	61	e30	e16	e18	e700	214	459	57	39	31	41
26	56	e57	e30	e15	e18	e800	193	398	55	38	30	40
27	61	e53	e32	e15	e19	e400	179	329	55	37	29	36
28	66	57	e33	e16	e21	e240	166	269	62	34	29	29
29	58	53	e35	e15	---	266	150	216	54	32	30	33
30	51	53	e39	e16	---	253	133	173	54	33	24	33
31	52	---	e39	e18	---	230	---	148	---	40	26	---
TOTAL	1,628	1,551	1,190	858	562	6,790	5,567	16,911	3,812	1,720	5,364	1,188
MEAN	52.5	51.7	38.4	27.7	20.1	219	186	546	127	55.5	173	39.6
MAX	79	63	45	46	25	800	270	1,550	241	108	425	92
MIN	28	43	30	15	17	13	100	139	54	32	24	22
CFSM	0.10	0.10	0.07	0.05	0.04	0.42	0.35	1.04	0.24	0.11	0.33	0.08
IN.	0.12	0.11	0.08	0.06	0.04	0.48	0.39	1.20	0.27	0.12	0.38	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2003, BY WATER YEAR (WY)

	1972	1973	1974	1975	1976	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
MEAN	184	235	174	110	187	803	934	399	290	138	76.6	137																				
MAX	1,465	1,367	575	503	1,104	1,951	2,672	991	1,396	1,071	343	1,711																				
(WY)	(1987)	(1986)	(1983)	(1973)	(1984)	(1985)	(1979)	(1978)	(1993)	(1993)	(1986)	(1986)																				
MIN	18.8	23.1	16.3	20.4	20.1	219	181	53.8	18.1	13.6	13.7	14.9																				
(WY)	(1977)	(1977)	(1977)	(1977)	(2003)	(2003)	(2000)	(1977)	(1988)	(1988)	(1988)	(1976)																				

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1972 - 2003
ANNUAL TOTAL	87,289	47,141	
ANNUAL MEAN	239	129	308
HIGHEST ANNUAL MEAN			728
LOWEST ANNUAL MEAN			82.7
HIGHEST DAILY MEAN	964	May 10	8,000
LOWEST DAILY MEAN	26	Sep 16,18	7.0
ANNUAL SEVEN-DAY MINIMUM	28	Sep 13	8.1
MAXIMUM PEAK FLOW		2,050	(b)8,280
MAXIMUM PEAK STAGE		8.63	(c)13.30
INSTANTANEOUS LOW FLOW		(a)	6.8
ANNUAL RUNOFF (CFSM)	0.45	0.25	(d)Jul 8, 1988
ANNUAL RUNOFF (INCHES)	6.17	3.33	7.95
10 PERCENT EXCEEDS	689	375	806
50 PERCENT EXCEEDS	64	51	116
90 PERCENT EXCEEDS	34	19	30

- (a) Ice affected
- (b) Gage height, 13.24 ft
- (c) From floodmarks
- (d) Also occurred Oct. 3-5, 1989
- (e) Estimated due to ice effect or missing record

## 04085746 MULLET RIVER AT OLD WADE HOUSE AT GREENBUSH, WI

LOCATION.--Lat 43°46'39", long 88°05'07", in SE 1/4 SE 1/4 sec.10, T.15 N., R.20 E., Sheboygan County, Hydrologic Unit 04030101, on right bank about 300 ft upstream of Plank Road bridge in Greenbush, located in Old Wade House Historic site.

DRAINAGE AREA.--24.3 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 963.96 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Flow partly regulated by sawmill at Old Wade House, May-September. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	4.3	5.8	5.3	1.4	1.9	e17	20	9.5	3.8	3.9	0.49
2	2.9	4.1	5.9	4.6	1.5	1.9	e15	20	8.5	3.2	3.1	0.45
3	3.6	4.0	5.0	4.4	1.6	1.9	14	19	8.0	2.8	3.5	0.44
4	10	4.1	4.8	3.9	1.6	1.8	12	18	7.4	2.9	3.1	0.44
5	13	4.5	4.7	4.0	1.6	1.8	9.8	31	6.9	3.0	2.7	0.48
6	9.1	5.6	4.4	4.0	1.6	1.8	11	35	6.5	3.2	2.4	0.51
7	5.7	5.7	4.4	4.1	1.6	1.8	10	35	7.1	5.6	2.3	0.49
8	4.8	5.8	3.9	4.3	1.4	1.8	9.7	37	9.2	4.7	2.6	0.44
9	4.7	5.8	3.3	4.4	1.4	1.8	12	41	13	4.3	2.7	0.42
10	5.7	5.2	3.3	4.0	1.5	1.9	13	41	16	7.0	2.6	0.45
11	6.7	4.9	3.3	e3.2	1.5	1.9	15	50	20	9.3	3.2	0.45
12	6.9	4.3	3.5	e2.7	1.5	1.8	17	50	20	9.0	2.5	0.47
13	6.9	4.2	3.7	e2.5	1.5	1.8	17	48	20	8.4	2.1	1.0
14	6.8	4.2	3.9	e2.0	1.5	2.0	18	46	18	7.7	1.9	5.9
15	6.9	4.1	4.0	e1.8	1.5	5.7	20	42	15	6.7	1.7	5.3
16	6.9	4.0	3.9	e1.6	1.5	10	20	39	12	5.6	1.4	3.0
17	7.8	3.8	4.0	e1.4	1.5	12	18	36	9.6	4.4	1.2	2.3
18	9.6	3.8	6.2	e1.2	1.6	8.8	17	33	8.2	3.7	1.1	2.1
19	10	5.3	10	e1.1	1.6	12	17	30	7.5	3.0	0.88	1.9
20	9.8	5.0	8.7	e1.0	1.8	22	20	27	6.3	2.6	0.81	1.9
21	9.8	5.9	7.2	e0.90	2.0	23	21	23	5.7	2.4	0.72	1.8
22	9.5	6.8	7.2	e0.70	2.2	e24	20	20	5.1	2.3	0.65	1.8
23	9.3	6.6	6.5	e0.60	2.3	e27	19	18	4.8	2.0	0.63	1.7
24	9.0	6.5	6.5	e0.60	2.2	e26	18	15	4.4	1.8	0.57	1.6
25	9.7	5.7	6.5	e0.60	2.1	e25	17	14	4.3	1.7	0.62	1.4
26	9.9	5.9	6.1	e0.60	2.0	e23	15	12	4.8	1.6	0.94	1.4
27	9.1	5.5	5.9	0.61	2.0	e21	14	11	4.2	1.5	0.62	1.6
28	8.6	5.5	6.0	0.60	1.9	e20	13	9.9	4.7	1.2	0.52	1.7
29	8.1	6.3	5.5	0.68	---	e17	12	9.3	4.9	1.2	0.64	1.7
30	7.7	5.4	5.7	e0.90	---	e15	11	9.1	4.3	1.1	0.53	1.7
31	5.8	---	5.2	1.3	---	e19	---	11	---	1.7	0.48	---
TOTAL	236.8	152.8	165.0	69.59	47.4	336.4	462.5	850.3	275.9	119.4	52.61	45.33
MEAN	7.64	5.09	5.32	2.24	1.69	10.9	15.4	27.4	9.20	3.85	1.70	1.51
MAX	13	6.8	10	5.3	2.3	27	21	50	20	9.3	3.9	5.9
MIN	2.5	3.8	3.3	0.60	1.4	1.8	9.7	9.1	4.2	1.1	0.48	0.42
CFSM	0.31	0.21	0.22	0.09	0.07	0.45	0.63	1.13	0.38	0.16	0.07	0.06
IN.	0.36	0.23	0.25	0.11	0.07	0.51	0.71	1.30	0.42	0.18	0.08	0.07

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

	2001	2002	2003	2001	2002	2003	2001	2002	2003	2001	2002	2003
MEAN	9.49	8.78	9.71	4.19	8.57	19.5	25.5	22.3	12.2	4.40	4.41	5.33
MAX	11.3	12.5	14.1	6.14	15.5	28.1	35.6	27.4	16.3	5.77	8.39	12.1
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2003)	(2001)	(2002)	(2001)	(2001)
MIN	7.64	5.09	5.32	2.24	1.69	10.9	15.4	17.2	9.20	3.59	1.70	1.51
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2001)	(2003)	(2003)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	4,332.9		2,814.03			
ANNUAL MEAN	11.9		7.71		10.6	
HIGHEST ANNUAL MEAN					13.5	
LOWEST ANNUAL MEAN					7.71	
HIGHEST DAILY MEAN	54	Apr 12	50	May 11	54	Apr 12, 2002
LOWEST DAILY MEAN	1.2	Aug 11	0.42	Sep 9	0.42	Sep 9, 2003
ANNUAL SEVEN-DAY MINIMUM	1.6	Sep 12	0.46	Sep 3	0.46	Sep 3, 2003
MAXIMUM PEAK FLOW			52	May 11,12	56	Apr 12, 2002
MAXIMUM PEAK STAGE			4.29	May 11,12	4.30	Apr 12, 2002
ANNUAL RUNOFF (CFSM)	0.49		0.32		0.44	
ANNUAL RUNOFF (INCHES)	6.63		4.31		5.94	
10 PERCENT EXCEEDS	32		20		25	
50 PERCENT EXCEEDS	6.9		4.5		7.1	
90 PERCENT EXCEEDS	2.5		1.0		1.6	

(e) Estimated due to ice effect or missing record



## STREAMS TRIBUTARY TO LAKE MICHIGAN

04085746 MULLET RIVER AT OLD WADE HOUSE AT GREENBUSH, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	13.0	8.0	10.5
2	---	---	---	---	---	---	---	---	---	13.5	9.0	11.0
3	---	---	---	---	---	---	---	---	---	14.0	7.5	10.5
4	---	---	---	---	---	---	---	---	---	12.0	8.5	10.5
5	---	---	---	---	---	---	---	---	---	10.0	8.5	9.0
6	---	---	---	---	---	---	---	---	---	13.0	8.5	10.5
7	---	---	---	---	---	---	---	---	---	11.5	9.0	10.0
8	---	---	---	---	---	---	---	---	---	13.0	8.5	11.0
9	---	---	---	---	---	---	---	---	---	14.5	10.0	12.0
10	---	---	---	---	---	---	---	---	---	15.5	11.0	13.5
11	---	---	---	---	---	---	---	---	---	14.0	9.5	11.5
12	---	---	---	---	---	---	---	---	---	13.5	8.5	10.5
13	---	---	---	---	---	---	---	---	---	16.5	9.5	13.0
14	---	---	---	---	---	---	---	---	---	14.5	11.5	12.5
15	---	---	---	---	---	---	---	---	---	16.0	11.0	13.0
16	---	---	---	---	---	---	---	---	---	16.0	11.5	14.0
17	---	---	---	---	---	---	---	---	---	16.5	13.0	14.5
18	---	---	---	---	---	---	---	---	---	16.5	13.5	15.0
19	---	---	---	---	---	---	---	---	---	15.5	14.5	15.0
20	---	---	---	---	---	---	---	---	---	17.5	14.0	16.0
21	---	---	---	---	---	---	---	---	---	16.5	12.0	14.5
22	---	---	---	---	---	---	---	---	---	17.0	11.5	14.0
23	---	---	---	---	---	---	---	---	---	18.0	12.5	15.0
24	---	---	---	---	---	---	---	---	---	18.0	13.0	15.5
25	---	---	---	---	---	---	---	---	---	19.0	13.5	16.0
26	---	---	---	---	---	---	---	---	---	18.5	14.0	16.5
27	---	---	---	---	---	---	---	---	---	20.5	14.0	17.0
28	---	---	---	---	---	---	---	---	---	18.0	15.5	16.5
29	---	---	---	---	---	---	---	---	---	18.5	14.0	16.0
30	---	---	---	---	---	---	---	---	---	17.0	14.5	15.5
31	---	---	---	---	---	---	---	---	---	16.0	13.5	14.5
MONTH	---	---	---	---	---	---	---	---	---	20.5	7.5	13.4
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.0	11.0	14.0	22.5	18.5	21.0	22.0	19.5	21.0	21.0	15.5	18.0
2	17.0	13.0	15.0	24.0	19.5	22.0	22.0	19.5	21.0	21.5	15.0	18.0
3	18.0	14.0	16.0	24.5	21.0	23.0	21.0	19.0	20.0	22.5	17.0	19.0
4	18.0	14.5	16.0	25.5	21.5	23.5	20.0	18.5	19.0	21.0	16.0	18.0
5	18.0	15.0	16.5	25.5	21.5	24.0	22.0	17.5	19.5	21.5	14.0	17.5
6	16.5	15.0	15.5	24.0	21.5	22.5	23.5	19.5	21.5	22.5	16.5	19.0
7	17.0	14.0	15.5	24.5	20.0	22.0	21.5	19.5	20.5	24.0	18.5	21.0
8	16.0	14.5	15.5	23.0	20.0	21.0	20.5	19.5	20.0	24.5	19.0	21.5
9	17.0	14.0	15.5	20.0	18.0	19.0	20.0	17.5	19.0	24.5	19.5	21.5
10	16.0	15.0	15.5	18.5	17.0	18.0	22.0	17.0	20.0	24.0	19.0	21.0
11	16.5	14.5	15.5	19.0	16.5	17.5	21.0	18.5	19.5	24.5	19.5	21.5
12	17.5	14.5	16.0	22.0	16.5	19.0	20.5	17.5	19.0	22.0	18.5	20.0
13	19.5	15.5	17.5	23.0	18.5	20.5	21.5	17.5	19.5	20.5	19.5	20.0
14	20.5	17.5	19.0	23.0	20.0	21.5	22.5	18.5	20.5	19.5	16.5	18.0
15	21.0	17.5	19.0	24.5	21.0	22.5	24.0	20.5	22.5	17.0	15.0	16.0
16	21.0	17.0	19.0	23.5	19.0	21.5	25.0	22.0	23.5	17.5	14.0	16.0
17	21.5	17.0	19.0	23.5	20.0	22.0	24.0	20.5	22.0	18.5	15.5	17.0
18	22.0	18.5	20.0	22.0	18.0	20.0	24.0	19.5	21.5	19.5	16.5	18.0
19	21.0	17.0	19.0	22.0	17.0	20.0	25.0	20.5	22.0	18.0	14.5	16.0
20	20.5	15.0	17.5	22.0	19.5	21.0	26.0	21.0	23.5	15.5	12.0	14.0
21	21.0	15.5	18.5	22.0	20.0	21.0	27.5	23.0	25.0	16.0	13.0	14.5
22	22.5	17.5	20.0	21.5	18.5	20.0	26.0	21.5	23.5	16.0	14.5	15.5
23	23.0	18.5	21.0	21.0	17.0	19.5	24.5	20.0	21.5	15.5	12.5	14.0
24	24.0	20.0	22.0	21.0	17.0	19.5	25.0	19.5	22.0	16.0	13.5	14.0
25	25.0	21.5	23.5	23.0	18.5	21.0	24.5	21.0	22.5	14.0	11.5	12.5
26	23.0	19.5	21.5	22.0	20.5	21.5	26.0	20.5	22.5	12.5	11.5	12.0
27	22.0	17.5	19.5	25.5	22.0	23.0	25.0	20.0	22.5	12.0	11.0	11.5
28	20.0	17.0	18.0	23.5	20.0	21.5	24.5	18.0	21.0	11.5	10.5	11.0
29	21.5	16.5	19.0	23.5	18.0	21.0	24.5	20.0	22.0	11.5	9.0	10.0
30	22.5	17.5	20.0	24.0	20.0	21.5	22.0	18.0	20.0	11.0	9.0	10.0
31	---	---	---	24.0	20.0	21.5	20.5	17.0	18.5	---	---	---
MONTH	25.0	11.0	18.0	25.5	16.5	21.0	27.5	17.0	21.2	24.5	9.0	16.5



04085746 MULLET RIVER AT OLD WADE HOUSE AT GREENBUSH, WI—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	10.5	8.8	9.5	---	---	---	---	---	---	---	---	---
11	10.3	8.5	9.3	---	---	---	---	---	---	---	---	---
12	10.3	8.5	8.8	---	---	---	---	---	---	---	---	---
13	13.0	8.7	10.4	---	---	---	---	---	---	---	---	---
14	11.7	10.1	10.7	---	---	---	---	---	---	---	---	---
15	12.9	10.0	10.6	---	---	---	---	---	---	---	---	---
16	11.9	10.2	11.0	---	---	---	---	---	---	---	---	---
17	11.9	10.8	11.3	---	---	---	---	---	---	---	---	---
18	12.2	10.6	11.2	---	---	---	---	---	---	---	---	---
19	11.5	10.5	10.9	---	---	---	---	---	---	---	---	---
20	12.4	10.9	11.5	---	---	---	---	---	---	---	---	---
21	11.9	11.1	11.4	---	---	---	---	---	---	---	---	---
22	12.0	11.1	11.6	---	---	---	---	---	---	---	---	---
23	13.1	11.6	12.2	---	---	---	---	---	---	---	---	---
24	13.0	11.8	12.3	---	---	---	---	---	---	---	---	---
25	12.1	11.3	11.8	---	---	---	---	---	---	---	---	---
26	12.0	10.9	11.3	---	---	---	---	---	---	---	---	---
27	12.5	10.8	11.5	---	---	---	---	---	---	---	---	---
28	12.3	10.9	11.5	---	---	---	---	---	---	---	---	---
29	13.4	11.7	12.3	---	---	---	---	---	---	---	---	---
30	13.6	11.8	12.4	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	13.6	8.5	11.1	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	13.2	10.0	11.2
2	---	---	---	---	---	---	---	---	---	13.9	9.8	11.5
3	---	---	---	---	---	---	---	---	---	14.3	10.2	12.0
4	---	---	---	---	---	---	---	---	---	14.1	10.4	11.9
5	---	---	---	---	---	---	---	---	---	10.7	9.2	10
6	---	---	---	---	---	---	---	---	---	11.1	9.0	9.8
7	---	---	---	---	---	---	---	---	---	10.4	8.9	9.3
8	---	---	---	---	---	---	---	---	---	11.2	8.9	9.8
9	---	---	---	---	---	---	---	---	---	9.9	7.8	8.9
10	---	---	---	---	---	---	---	---	---	10.2	7.6	8.7
11	---	---	---	---	---	---	---	---	---	8.5	6.7	7.7
12	---	---	---	---	---	---	---	---	---	10.8	8.0	9.1
13	---	---	---	---	---	---	---	---	---	9.7	6.5	8.3
14	---	---	---	---	---	---	---	---	---	8.9	6.2	7.5
15	---	---	---	---	---	---	---	---	---	10.1	7.0	8.2
16	---	---	---	---	---	---	---	---	---	9.9	7.1	8.3
17	---	---	---	---	---	---	---	---	---	10.0	7.2	8.3
18	---	---	---	---	---	---	---	---	---	9.9	7.5	8.5
19	---	---	---	---	---	---	---	---	---	8.9	7.6	8.2
20	---	---	---	---	---	---	---	---	---	9.5	7.5	8.4
21	---	---	---	---	---	---	---	---	---	10.4	8.3	9.3
22	---	---	---	---	---	---	---	---	---	10.6	8.7	9.6
23	---	---	---	---	---	---	---	---	---	10.4	8.4	9.3
24	---	---	---	---	---	---	---	---	---	10.2	8.2	9.1
25	---	---	---	---	---	---	---	---	---	10.0	7.9	8.8
26	---	---	---	---	---	---	---	---	---	10.3	7.8	9.0
27	---	---	---	---	---	---	---	---	---	10.2	8.1	9.0
28	---	---	---	---	---	---	---	---	---	9.7	8.0	8.6
29	---	---	---	---	---	---	---	---	---	10.2	8.3	9.0
30	---	---	---	---	---	---	---	---	---	9.7	8.1	8.7
31	---	---	---	---	---	---	---	---	---	10.0	8.0	8.9
MONTH	---	---	---	---	---	---	---	---	---	14.3	6.2	9.2

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04085746 MULLET RIVER AT OLD WADE HOUSE AT GREENBUSH, WI—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.7	8.6	9.4	9.3	6.4	7.7	8.3	6.2	7.3	11.7	7.3	9.0
2	10.0	8.5	9.1	9.1	5.9	7.3	8.6	6.8	7.5	11.7	7.4	9.1
3	10.3	8.4	9.1	8.1	5.0	6.4	9.0	6.9	7.5	11.9	7.1	8.9
4	10.9	8.3	9.2	7.7	4.8	6.1	8.9	7.2	8.0	11.3	7.1	8.7
5	10.7	8.5	9.3	7.6	4.7	6.0	9.6	7.1	8.3	11.3	6.8	8.4
6	10.3	8.4	9.0	7.5	4.6	5.9	9.5	6.7	7.9	11.5	6.7	8.6
7	10.3	8.3	8.9	8.0	5.7	6.7	9.2	6.6	7.8	11.7	6.4	8.6
8	9.7	8.2	8.7	8.1	5.7	7.1	9.2	7.1	7.9	11.7	6.2	8.9
9	9.4	8.1	8.7	8.4	6.9	7.6	9.9	7.5	8.4	11.5	7.0	9.2
10	8.6	8.0	8.2	7.6	6.8	7.2	10.0	7.0	8.4	11.6	5.9	8.0
11	8.7	8.0	8.3	8.1	7.2	7.5	8.9	7.0	7.8	11.4	6.2	8.5
12	9.0	8.0	8.4	8.2	7.1	7.6	9.9	7.5	8.4	12.1	6.2	8.0
13	8.7	7.6	8.2	8.6	7.0	7.6	10.1	7.4	8.5	9.0	6.0	7.1
14	8.7	7.5	8.0	8.4	7.0	7.5	10.6	7.4	8.7	8.0	6.1	7.3
15	9.1	7.5	8.1	8.7	6.9	7.4	10.8	6.8	8.4	9.1	7.9	8.4
16	9.0	7.6	8.2	8.7	7.0	7.7	10.4	6.5	8.0	9.9	7.7	8.7
17	9.5	7.6	8.3	8.7	7.0	7.6	10.1	6.7	8.1	10.0	7.7	8.6
18	9.0	7.2	7.9	8.8	7.1	7.9	10.2	6.9	8.2	10.1	7.6	8.5
19	9.6	7.2	8.3	9.0	6.7	7.9	10.1	6.5	8.0	10.5	7.7	8.9
20	10.1	7.6	8.7	---	---	---	9.8	5.7	7.5	11.4	8.8	10.0
21	10.0	7.4	8.5	---	---	---	9.5	5.4	6.9	11.9	9.1	10.3
22	10.0	7.0	8.2	---	---	---	9.6	5.4	7.1	10.5	8.5	9.2
23	9.7	6.7	7.8	---	---	---	10.4	6.0	7.7	10.9	8.7	9.6
24	8.7	6.0	7.3	9.1	7.0	7.9	10.3	5.8	7.8	11.2	8.4	9.4
25	8.2	5.7	6.6	9.5	6.8	8.0	8.8	5.5	6.4	11.9	8.6	10.0
26	8.6	5.9	7.0	8.7	6.7	7.4	9.9	5.7	7.4	11.9	9.2	10.0
27	9.2	6.7	7.7	9.2	6.6	7.6	10.3	5.8	7.5	11.9	9.0	10.1
28	9.0	6.8	7.8	10.0	6.7	8.1	10.4	5.9	7.9	12.3	9.5	10.6
29	9.3	7.1	8.2	10.5	7.1	8.5	10.2	5.7	7.5	13.3	10.1	11.4
30	9.3	6.7	7.9	9.6	6.2	7.7	11.2	6.4	8.4	13.6	10.3	11.6
31	---	---	---	8.9	6.1	7.2	11.3	7.0	8.6	---	---	---
MONTH	10.9	5.7	8.3	10.5	4.6	7.4	11.3	5.4	7.9	13.6	5.9	9.1

04086000 SHEBOYGAN RIVER AT SHEBOYGAN, WI

LOCATION.--Lat 43°44'30", long 87°45'14", in SE ¼ NW ¼ sec.28, T.15 N., R.23 E., Sheboygan County, Hydrologic Unit 04030101, on left bank 0.5 mi upstream from bridge on State Highway 28, near west city limits of Sheboygan, and 3.9 mi upstream from mouth.

DRAINAGE AREA.--418 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1916 to September 1924 (published as "near Sheboygan"), October 1950 to current year. Monthly discharge for some periods published in WSP 1307, 1727.

REVISED RECORDS.--WSP 1307: 1917(M), 1919(M), 1921(M), 1923(M). WSP 1727: 1951. WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 580.49 ft, above NGVD of 1929. June 1916 to June 1924, nonrecording gage 0.4 mi downstream at different datum. November 1950 to June 1951, nonrecording gage near present site at different datum. July 1951 to September 1998, water-stage recorder at site 0.3 mi upstream at different datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	81	e76	e76	e40	e42	235	261	140	69	232	36
2	67	80	e74	e76	e39	e43	230	295	149	61	269	36
3	72	75	e74	e78	e38	e42	221	252	225	56	210	37
4	105	76	e74	e78	e38	e41	233	221	184	55	164	35
5	192	80	e74	e78	e38	e40	204	529	116	55	140	33
6	187	82	e74	e80	e38	e41	175	832	96	62	117	32
7	174	83	e76	e84	e37	e40	171	748	92	88	143	31
8	154	84	e78	e80	e36	e40	183	817	101	81	174	33
9	142	86	e78	e80	e35	e38	190	916	119	72	137	34
10	127	86	e80	e80	e34	e36	215	947	162	68	115	34
11	113	91	e82	e72	e34	e37	230	1,010	210	85	101	34
12	103	89	e84	e66	e34	e38	229	1,180	213	100	89	33
13	96	86	e82	e60	e34	e40	217	1,040	199	103	78	41
14	91	86	e82	e56	e34	e50	211	877	169	119	73	74
15	85	87	e82	e54	e35	e90	211	774	154	120	70	80
16	81	86	e80	e50	e35	e130	224	709	140	116	66	67
17	79	83	e80	e48	e35	e240	220	608	127	112	61	54
18	86	78	e82	e44	e35	e230	210	545	116	101	58	45
19	93	103	e80	e42	e37	e220	215	506	105	91	56	42
20	96	115	e80	e40	e40	e210	231	489	95	84	54	41
21	95	112	e78	e39	e43	e210	249	380	82	77	52	42
22	91	107	e74	e37	e43	e270	254	276	75	73	47	45
23	96	108	e70	e36	e42	e330	243	189	71	67	42	45
24	94	106	e70	e35	e40	e400	229	193	68	60	40	44
25	101	102	e68	e33	e38	e350	215	191	67	57	41	43
26	108	e80	e64	e32	e36	e300	200	179	69	53	45	41
27	106	e70	e66	e32	e37	261	183	168	69	51	43	43
28	101	e80	e68	e32	e40	255	171	161	78	47	40	42
29	94	e76	e72	e32	---	275	162	159	79	42	42	44
30	88	e76	e78	e33	---	265	171	159	77	45	39	44
31	85	---	e76	e37	---	245	---	168	---	128	36	---
TOTAL	3,263	2,634	2,356	1,700	1,045	4,849	6,332	15,779	3,647	2,398	2,874	1,285
MEAN	105	87.8	76.0	54.8	37.3	156	211	509	122	77.4	92.7	42.8
MAX	192	115	84	84	43	400	254	1,180	225	128	269	80
MIN	61	70	64	32	34	36	162	159	67	42	36	31
CFSM	0.25	0.21	0.18	0.13	0.09	0.37	0.50	1.22	0.29	0.19	0.22	0.10
IN.	0.29	0.23	0.21	0.15	0.09	0.43	0.56	1.40	0.32	0.21	0.26	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 2003, BY WATER YEAR (WY)

MEAN	153	200	162	117	188	669	717	309	227	118	116	139
MAX	741	1,372	505	370	887	2,052	1,994	1,027	926	607	1,433	1,143
(WY)	(1987)	(1986)	(1983)	(1960)	(1984)	(1918)	(1993)	(1960)	(1996)	(1993)	(1924)	(1986)
MIN	29.6	31.7	19.7	17.1	20.9	110	141	41.5	25.2	19.8	11.1	20.4
(WY)	(1958)	(1951)	(1959)	(1959)	(1958)	(1968)	(1970)	(1958)	(1958)	(1958)	(1958)	(1958)

STREAMS TRIBUTARY TO LAKE MICHIGAN  
04086000 SHEBOYGAN RIVER AT SHEBOYGAN, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1916 - 2003	
ANNUAL TOTAL	84,996		48,162		260	
ANNUAL MEAN	233		132		526	
HIGHEST ANNUAL MEAN					1986	
LOWEST ANNUAL MEAN					47.1	
HIGHEST DAILY MEAN	1,360	Apr 9	1,180	May 12	7,000	Aug 6, 1924
LOWEST DAILY MEAN	46	Aug 20	31	Sep 7	1.0	Aug 27, 1922
ANNUAL SEVEN-DAY MINIMUM	49	Sep 12	33	Jan 24	8.9	Aug 14, 1958
MAXIMUM PEAK FLOW			(a)1,220	May 12	7,820	Aug 6, 1998
MAXIMUM PEAK STAGE			(b)5.03	Mar 24	12.02	Aug 6, 1998
INSTANTANEOUS LOW FLOW			(c)31	Sep 5	1.0	Aug 27, 1922
ANNUAL RUNOFF (CFSM)	0.56		0.32		0.62	
ANNUAL RUNOFF (INCHES)	7.56		4.29		8.44	
10 PERCENT EXCEEDS	568		237		610	
50 PERCENT EXCEEDS	130		80		119	
90 PERCENT EXCEEDS	64		37		38	

(a) Gage height, 4.40 ft

(b) Backwater from ice

(c) Also occurred Sept. 6, 7, 8

(e) Estimated due to ice effect or missing record

04086500 CEDAR CREEK NEAR CEDARBURG, WI

LOCATION.--Lat 43°19'23", long 87°58'43", in SE 1/4 SW 1/4 sec.14, T.10 N., R.21 E., Ozaukee County, Hydrologic Unit 04040003, on left bank 40 ft upstream from bridge on State Highway 60, 1.9 mi north of Cedarburg, and 6.6 mi upstream from mouth.

DRAINAGE AREA.--120 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1930 to September 1970, July 1973 to September 1981, August 1983 to September 1987, October 1990 to current year.

REVISED RECORDS.--WSP 1307: 1932-34(M), 1937(M), 1939(M), 1945(M), 1948-49(M). WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 795.33 ft above NGVD of 1929 (levels by Corps of Engineers). Nonrecording gage and crest-stage gage August 1930 to September 1970 at same site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	34	e29	e18	e9.0	e14	52	139	60	16	43	8.7
2	22	33	e29	e26	e10	e13	50	197	51	14	50	8.5
3	25	32	e27	e23	e12	e12	47	141	47	12	33	8.6
4	32	32	e24	e19	e11	e12	46	99	44	11	34	8.3
5	56	34	e25	e22	e10	e12	50	164	41	14	32	7.6
6	48	34	e34	e23	e10	e12	54	229	39	16	26	7.4
7	41	36	e36	e22	e9.7	e13	55	193	39	17	32	7.3
8	36	37	e33	e23	e9.0	e12	47	240	53	20	33	7.4
9	33	39	e30	e25	e8.7	e12	51	292	80	18	26	7.7
10	30	41	e32	e18	e8.6	e15	64	319	71	16	21	8.2
11	29	43	48	e14	e8.4	e17	70	409	77	16	18	8.5
12	29	47	48	e10	e8.0	e19	66	589	73	16	16	7.7
13	28	47	48	e10	e8.0	e21	58	550	55	14	16	9.4
14	26	45	46	e9.6	e7.9	e32	53	415	46	12	14	15
15	26	43	44	e9.2	e7.8	e56	53	304	40	12	13	26
16	26	43	e29	e9.0	e7.8	e100	55	218	33	13	13	19
17	25	42	e30	e8.8	e7.8	e98	54	159	30	12	12	13
18	27	e40	e35	e8.3	e7.9	e92	47	129	25	10	11	11
19	33	45	e62	e8.0	e9.0	e85	46	111	23	9.9	11	10
20	32	49	e58	e7.7	e15	e80	56	114	21	9.3	11	10
21	31	47	e42	e7.6	e14	e78	66	110	19	9.1	11	10
22	30	47	e27	e7.6	e13	e74	62	91	18	9.4	10	11
23	29	46	e30	e7.5	e12	e72	54	81	16	9.7	9.0	11
24	30	43	e36	e7.5	e12	e65	46	73	16	9.3	8.7	10
25	33	e28	e32	e7.4	e11	67	43	66	16	9.1	9.4	9.4
26	44	e27	e28	e7.4	e10	58	40	60	16	8.7	11	9.6
27	42	e27	e26	e7.4	e12	57	36	55	16	8.9	14	10
28	38	e29	e26	e7.4	e15	62	34	52	16	8.5	11	10
29	36	e29	e27	e7.5	---	77	33	54	17	8.2	10	9.7
30	34	e27	e32	e7.6	---	63	36	52	19	8.8	9.7	9.3
31	34	---	e24	e8.0	---	55	---	56	---	17	8.6	---
TOTAL	1,009	1,146	1,077	396.5	284.6	1,455	1,524	5,761	1,117	384.9	577.4	309.3
MEAN	32.5	38.2	34.7	12.8	10.2	46.9	50.8	186	37.2	12.4	18.6	10.3
MAX	56	49	62	26	15	100	70	589	80	20	50	26
MIN	22	27	24	7.4	7.8	12	33	52	16	8.2	8.6	7.3
CFSM	0.27	0.32	0.29	0.11	0.08	0.39	0.42	1.55	0.31	0.10	0.16	0.09
IN.	0.31	0.36	0.33	0.12	0.09	0.45	0.47	1.79	0.35	0.12	0.18	0.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2003, BY WATER YEAR (WY)

MEAN	44.6	57.9	50.3	49.8	68.0	190	165	89.4	77.7	43.8	25.7	45.4
MAX	306	376	268	273	253	575	586	291	454	298	106	485
(WY)	(1955)	(1986)	(1992)	(1975)	(1984)	(1976)	(1993)	(1933)	(1996)	(1952)	(1960)	(1986)
MIN	5.65	6.66	4.92	3.74	5.32	19.9	38.9	14.0	3.34	1.40	1.45	2.48
(WY)	(1935)	(1938)	(1964)	(1940)	(1959)	(1940)	(1958)	(1958)	(1934)	(1936)	(1934)	(1932)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1930 - 2003
ANNUAL TOTAL	26,734	15,041.7	
ANNUAL MEAN	73.2	41.2	75.6
HIGHEST ANNUAL MEAN			168
LOWEST ANNUAL MEAN			(a)13.5
HIGHEST DAILY MEAN	516	Mar 11	3,320
LOWEST DAILY MEAN	11	Aug 11,12	0.20
ANNUAL SEVEN-DAY MINIMUM	13	Aug 7	0.24
MAXIMUM PEAK FLOW			606
MAXIMUM PEAK STAGE			7.82
INSTANTANEOUS LOW FLOW			7.0
ANNUAL RUNOFF (CFSM)	0.61	0.34	0.63
ANNUAL RUNOFF (INCHES)	8.29	4.66	8.56
10 PERCENT EXCEEDS	158	71	170
50 PERCENT EXCEEDS	42	27	33
90 PERCENT EXCEEDS	21	8.6	7.4

(a) Published erroneously at 7.16, 1930, in 1999-2001

(b) Ice affected

(c) From graph based on gage readings, backwater from ice

(e) Estimated due to ice effect or missing record

## 04086600 MILWAUKEE RIVER NEAR CEDARBURG, WI

LOCATION.--Lat 43°16'49", long 87°56'34", in NW ¼ NW ¼ sec.6, T.9 N., R.22 E., Ozaukee County, Hydrologic Unit 04040003, on right bank 60 ft downstream from Pioneer Road bridge, 2.6 mi southeast of Cedarburg, 1.0 mi west of I-43, and 26.25 mi upstream from mouth.

DRAINAGE AREA.--607 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 653.56 ft above NGVD of 1929 (Southeastern Wisconsin Regional Planning Commission bench mark).

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127	121	e89	e120	e64	e120	344	470	266	75	324	44
2	102	113	e90	e120	e70	e110	315	775	262	65	231	42
3	119	103	e98	e130	e85	e100	298	724	239	50	188	40
4	160	102	e120	e130	e78	e100	320	615	218	51	158	36
5	214	96	e120	e130	e71	e100	362	786	201	47	269	32
6	368	97	e110	e130	e71	e100	363	944	184	62	210	35
7	323	103	e100	e130	e68	e110	338	974	181	72	151	35
8	293	111	e99	e130	e63	e110	330	1,020	245	102	158	37
9	263	109	e88	e130	e61	e110	314	1,220	312	116	177	40
10	231	112	e85	e130	e70	e120	334	1,310	356	90	186	40
11	205	117	e85	e100	e72	e140	375	1,640	394	85	166	38
12	165	122	e88	e73	e79	e150	383	1,740	403	80	141	38
13	134	141	e91	e70	e82	e170	370	1,660	371	86	116	64
14	120	144	e100	e68	e90	e190	354	1,410	329	88	106	78
15	115	132	e110	e65	e100	e200	337	1,170	281	92	100	169
16	103	134	e110	e64	e100	e230	319	963	237	90	99	259
17	97	129	e130	e61	e100	e270	328	791	195	86	90	158
18	113	125	e180	e60	e100	e400	324	662	161	75	84	121
19	123	139	223	e57	e110	e500	326	570	128	70	76	106
20	140	154	277	e56	e120	e470	333	541	114	67	68	97
21	139	169	e200	e52	e120	e450	367	539	103	64	69	98
22	132	165	e160	e52	e110	e450	390	527	78	64	60	113
23	123	160	e150	e52	e100	e440	388	487	69	62	54	93
24	122	145	e140	e52	e100	e440	365	440	67	59	47	74
25	143	124	e140	e52	e100	439	318	389	60	59	56	56
26	158	e100	e150	e52	e100	392	289	345	56	55	65	53
27	169	e93	e160	e52	e100	369	268	306	60	55	52	55
28	166	e90	e150	e52	e120	365	244	277	60	51	53	51
29	158	e83	e140	e52	---	398	222	272	64	51	56	52
30	147	e86	e130	e52	---	423	225	271	77	53	45	50
31	134	---	e130	e56	---	389	---	257	---	227	42	---
TOTAL	5,106	3,619	4,043	2,530	2,504	8,355	9,843	24,095	5,771	2,349	3,697	2,204
MEAN	165	121	130	81.6	89.4	270	328	777	192	75.8	119	73.5
MAX	368	169	277	130	120	500	390	1,740	403	227	324	259
MIN	97	83	85	52	61	100	222	257	56	47	42	32
CFSM	0.27	0.20	0.21	0.13	0.15	0.44	0.54	1.28	0.32	0.12	0.20	0.12
IN.	0.31	0.22	0.25	0.16	0.15	0.51	0.60	1.48	0.35	0.14	0.23	0.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2003, 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	
MEAN	296	430	350	249	428	867	926	513	488	259	213	289											
MAX	1,157	1,565	757	406	997	1,793	2,501	902	1,887	767	349	1,593											
(WY)	(1987)	(1986)	(1983)	(1985)	(1984)	(1986)	(1993)	(1999)	(1996)	(1993)	(1987)	(1986)											
MIN	99.8	121	120	81.6	89.4	270	328	219	89.5	69.7	69.5	73.5											
(WY)	(1998)	(2003)	(1990)	(2003)	(2003)	(2003)	(2003)	(1988)	(1988)	(1988)	(1988)	(2003)											

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1982 - 2003
ANNUAL TOTAL	124,092	74,116	
ANNUAL MEAN	340	203	442
HIGHEST ANNUAL MEAN			720
LOWEST ANNUAL MEAN			203
HIGHEST DAILY MEAN	1,740	Apr 10	4,870
LOWEST DAILY MEAN	(a)83	Nov 29	32
ANNUAL SEVEN-DAY MINIMUM	(a)90	Nov 27	36
MAXIMUM PEAK FLOW		1,790	5,500
MAXIMUM PEAK STAGE		8.40	12.88
INSTANTANEOUS LOW FLOW		28	28
ANNUAL RUNOFF (CFSM)	0.56	0.33	0.73
ANNUAL RUNOFF (INCHES)	7.60	4.54	9.89
10 PERCENT EXCEEDS	754	393	958
50 PERCENT EXCEEDS	220	120	276
90 PERCENT EXCEEDS	105	53	116

(a) Ice affected

(e) Estimated due to ice effect or missing record

040869416 LINCOLN CREEK AT SHERMAN BOULEVARD AT MILWAUKEE, WI

LOCATION.--Lat 43°05'51", long 87°58'01", in SE ¼ SE ¼ NE ¼ sec.2, T7 N., R.21 E., Milwaukee County, Hydrologic Unit 04040003, on left bank at the corner of Sherman Boulevard and Congress Street.

DRAINAGE AREA.--9.56 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June to September 2003.

GAGE.--Water-stage recorder. Elevation of gage is 635 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated days, June 1-3, which are fair (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	e2.8	4.0	32	1.4
2	---	---	---	---	---	---	---	---	e2.5	4.1	9.7	1.7
3	---	---	---	---	---	---	---	---	e2.8	4.1	11	1.9
4	---	---	---	---	---	---	---	---	2.7	12	2.7	1.8
5	---	---	---	---	---	---	---	---	2.5	22	2.3	2.2
6	---	---	---	---	---	---	---	---	2.5	33	4.1	1.6
7	---	---	---	---	---	---	---	---	2.2	15	3.0	1.3
8	---	---	---	---	---	---	---	---	97	8.8	2.1	1.6
9	---	---	---	---	---	---	---	---	9.2	3.7	1.8	2.5
10	---	---	---	---	---	---	---	---	5.9	2.8	1.6	2.5
11	---	---	---	---	---	---	---	---	8.2	2.6	1.9	4.0
12	---	---	---	---	---	---	---	---	4.1	2.3	5.2	7.3
13	---	---	---	---	---	---	---	---	3.6	1.7	2.0	20
14	---	---	---	---	---	---	---	---	3.0	1.9	1.9	37
15	---	---	---	---	---	---	---	---	3.2	14	2.0	4.2
16	---	---	---	---	---	---	---	---	2.3	3.5	2.3	2.4
17	---	---	---	---	---	---	---	---	2.7	2.5	3.2	2.2
18	---	---	---	---	---	---	---	---	2.8	2.4	1.6	2.3
19	---	---	---	---	---	---	---	---	2.4	2.2	2.8	1.9
20	---	---	---	---	---	---	---	---	2.4	1.6	3.5	1.7
21	---	---	---	---	---	---	---	---	2.1	2.2	4.8	1.4
22	---	---	---	---	---	---	---	---	1.8	5.4	2.8	25
23	---	---	---	---	---	---	---	---	2.1	2.5	2.4	3.0
24	---	---	---	---	---	---	---	---	2.7	2.4	1.7	2.2
25	---	---	---	---	---	---	---	---	5.2	2.8	2.4	2.2
26	---	---	---	---	---	---	---	---	5.1	2.4	3.1	6.7
27	---	---	---	---	---	---	---	---	6.4	1.8	3.6	3.1
28	---	---	---	---	---	---	---	---	14	2.4	2.1	1.8
29	---	---	---	---	---	---	---	---	4.6	3.3	2.3	1.8
30	---	---	---	---	---	---	---	---	3.5	8.2	2.0	1.9
31	---	---	---	---	---	---	---	---	---	3.6	1.4	---
TOTAL	---	---	---	---	---	---	---	---	212.3	181.2	125.3	150.6
MEAN	---	---	---	---	---	---	---	---	7.08	5.85	4.04	5.02
MAX	---	---	---	---	---	---	---	---	97	33	32	37
MIN	---	---	---	---	---	---	---	---	1.8	1.6	1.4	1.3

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

MEAN	---	---	---	---	---	---	---	---	---	5.85	4.04	5.02
MAX	---	---	---	---	---	---	---	---	---	5.85	4.04	5.02
(WY)	---	---	---	---	---	---	---	---	---	(2003)	(2003)	(2003)
MIN	---	---	---	---	---	---	---	---	---	5.85	4.04	5.02
(WY)	---	---	---	---	---	---	---	---	---	(2003)	(2003)	(2003)

FOR 2003 WATER YEAR  
(JUNE-SEPTEMBER)

SUMMARY STATISTICS

HIGHEST DAILY MEAN	97	Jun 8
LOWEST DAILY MEAN	1.3	Sep 7
ANNUAL SEVEN-DAY MINIMUM	1.7	Sep 1
MAXIMUM PEAK FLOW	30	Sep 14
MAXIMUM PEAK STAGE	8.03	Sep 14
INSTANTANEOUS LOW FLOW	1.0	(a)Aug 24

(a) Also occurred Sept. 7  
(e) Estimated

040869416 LINCOLN CREEK AT SHERMAN BOULEVARD AT MILWAUKEE, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--June to September 2003.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June to September 2003.

SPECIFIC CONDUCTANCE: June to September 2003.

INSTRUMENTATION.--Continuous water temperature recorder and specific conductance recorder since June 2003. Sensor located near midstream.

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

EXTREMES FOR CURRENT PERIOD (JUNE-SEPTEMBER).--

WATER TEMPERATURE: Maximum, 30.5°C, Aug. 16 and 26; minimum, 10.0°C, Sept. 30.

SPECIFIC CONDUCTANCE: Maximum, 1,800 microsiemens per centimeter, June 24; minimum, 77 microsiemens per centimeter, Sept. 14.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	26.0	20.0	23.0	26.5	19.5	23.0	23.0	18.0	20.0
2	---	---	---	26.5	20.0	23.5	26.0	20.5	23.0	25.5	17.0	20.5
3	---	---	---	27.5	21.5	24.5	26.0	20.5	22.0	25.5	18.5	21.5
4	19.0	13.5	16.0	28.5	21.5	25.0	24.0	20.0	21.0	24.0	17.5	20.5
5	18.5	14.0	16.0	28.0	21.5	24.5	28.0	19.5	23.0	24.5	16.5	20.0
6	15.5	14.0	15.0	26.0	22.0	23.0	28.5	21.5	24.0	26.0	17.5	21.5
7	19.5	13.0	16.0	28.0	20.5	24.0	27.5	20.5	23.5	26.5	19.5	22.5
8	16.5	13.5	15.0	24.5	20.5	22.0	26.0	21.0	22.5	27.5	21.5	23.5
9	21.0	13.5	17.0	24.0	19.0	21.5	26.0	19.5	22.5	27.0	20.5	23.0
10	19.0	15.0	17.0	25.0	20.0	21.5	28.5	19.5	23.5	26.5	20.0	23.0
11	18.5	15.5	16.5	23.5	18.0	20.5	23.5	20.5	22.0	26.0	20.5	22.5
12	20.5	14.0	17.0	26.5	18.5	22.0	26.5	20.0	22.5	23.5	19.5	21.0
13	23.5	15.5	19.5	27.5	19.5	23.0	28.5	20.0	24.0	22.0	20.5	21.0
14	24.0	17.5	20.5	28.0	20.0	24.0	27.0	21.5	24.5	21.0	19.0	20.5
15	24.5	17.0	20.5	27.5	20.5	24.0	29.0	22.5	25.5	22.0	17.0	19.5
16	24.5	17.0	20.5	26.5	20.0	23.5	30.5	23.5	26.0	24.0	16.5	19.5
17	25.0	17.0	21.0	28.5	21.0	24.0	29.0	22.0	24.5	24.0	17.0	20.0
18	25.0	18.5	21.0	27.0	19.5	23.0	28.5	21.0	24.5	24.5	18.0	20.5
19	23.0	16.0	19.0	28.0	19.0	23.0	27.5	21.5	24.0	20.5	16.0	18.5
20	24.0	15.0	19.5	26.0	21.0	23.5	29.0	22.0	24.5	21.0	14.0	17.0
21	25.5	16.5	20.5	26.5	21.5	23.5	29.5	21.0	24.5	22.0	14.0	17.5
22	27.0	17.5	22.0	26.0	19.5	22.0	28.0	21.0	24.5	18.5	16.0	17.5
23	28.0	18.5	23.0	26.5	19.0	22.5	28.0	21.0	23.5	19.5	13.5	16.5
24	28.5	21.0	24.0	26.5	19.0	22.5	28.5	21.0	24.0	21.0	14.5	17.0
25	30.0	22.0	25.0	27.0	19.5	23.0	26.5	23.0	24.0	17.5	12.5	14.5
26	25.5	20.0	22.5	24.0	21.0	22.5	30.5	22.0	25.0	16.0	13.0	14.5
27	25.5	18.0	21.0	27.0	22.0	24.0	27.5	18.5	23.5	15.0	12.5	14.0
28	21.5	17.5	19.5	27.0	20.5	23.0	28.5	19.5	23.5	15.0	11.5	13.0
29	25.5	17.5	21.5	27.0	19.5	23.0	27.5	22.0	24.0	16.5	10.5	13.0
30	26.5	19.5	22.5	24.5	19.5	22.0	25.5	20.5	22.5	13.5	10.0	11.5
31	---	---	---	27.0	20.5	23.5	22.0	19.0	20.5	---	---	---
MONTH	30.0	13.0	19.6	28.5	18.0	23.0	30.5	18.5	23.5	27.5	10.0	18.8



040869416 LINCOLN CREEK AT SHERMAN BOULEVARD AT MILWAUKEE, WI—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	1,290	1,020	1,200	969	296	638	986	935	965
2	---	---	---	1,330	1,250	1,290	680	255	510	1,050	952	995
3	---	---	---	1,350	1,250	1,320	779	156	621	1,070	962	1,020
4	1,620	1,460	1,540	1,380	404	934	873	676	761	1,050	943	1,000
5	1,630	1,540	1,580	908	193	629	1,040	690	963	1,040	976	1,000
6	1,670	1,470	1,590	981	166	648	1,120	729	1,050	1,050	911	1,000
7	1,620	1,560	1,590	820	179	643	815	661	699	1,060	973	1,010
8	1,600	144	592	978	369	775	998	815	910	1,090	1,050	1,060
9	1,140	668	954	1,040	728	884	1,100	998	1,050	1,100	1,040	1,070
10	1,310	825	1,210	1,210	1,030	1,100	1,120	747	1,070	1,060	923	1,010
11	1,250	812	962	1,240	1,150	1,200	1,100	843	1,010	983	719	888
12	1,400	1,180	1,290	1,270	1,210	1,240	1,080	311	785	815	384	719
13	1,460	1,360	1,420	1,320	1,230	1,260	1,060	927	1,020	608	230	427
14	1,550	1,440	1,500	1,400	1,260	1,330	1,130	1,050	1,090	537	77	382
15	1,660	1,300	1,470	1,420	296	752	1,170	841	1,090	629	388	511
16	1,650	1,400	1,490	1,110	615	951	1,200	805	1,130	741	629	699
17	1,750	1,490	1,680	1,120	1,000	1,060	1,160	623	1,040	804	723	771
18	1,720	1,480	1,640	1,220	1,100	1,160	1,060	962	1,020	859	804	841
19	1,660	1,420	1,520	1,270	1,220	1,240	1,100	985	1,050	862	832	850
20	1,660	1,100	1,610	1,310	1,230	1,260	1,110	601	996	908	840	886
21	1,670	1,400	1,620	1,340	1,110	1,260	1,000	427	836	922	880	904
22	1,690	1,370	1,650	1,300	427	1,050	861	676	820	899	152	482
23	1,750	1,560	1,670	1,110	1,030	1,060	924	803	875	745	548	663
24	1,800	1,570	1,700	1,210	1,100	1,170	971	831	931	846	707	806
25	1,700	1,120	1,570	1,300	1,080	1,230	1,030	925	995	910	835	878
26	1,260	1,010	1,070	1,360	1,270	1,320	1,020	756	965	883	426	755
27	1,300	618	1,180	1,370	1,330	1,360	926	658	821	666	441	583
28	1,090	405	793	1,480	1,300	1,380	893	783	821	826	566	723
29	1,010	693	911	1,480	992	1,360	923	843	889	984	826	916
30	1,200	1,010	1,100	1,260	190	1,110	943	767	895	1,000	901	968
31	---	---	---	1,030	429	835	935	896	906	---	---	---
MONTH	1,800	144	1,370	1,480	166	1,100	1,200	156	912	1,100	77	826

## STREAMS TREIBUTARY TO LAKE MICHIGAN

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI  
(NATIONAL WATER-QUALITY ASSESSMENT PROGRAM STATION)

LOCATION.--Lat 43°06'00", long 87°54'32", in NE ¼ NE ¼, sec.5, T.7 N., R.22 E., Milwaukee County, Hydrologic Unit 04040003, on left bank near northeast limits of Milwaukee in Estabrook Park, 2,000 ft downstream from Port Washington Road bridge and 6.6 mi upstream from mouth.

DRAINAGE AREA.--696 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1914 to current year. Published as "near Milwaukee" prior to 1936.

REVISED RECORDS.--WSP 564: 1918(M). WSP 924: 1940. WSP 1207: 1936(M). WSP 1337: 1915-17(M), 1918, 1919-21(M), 1922, 1923(M), 1924, 1925-33(M). WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 607.23 ft above NGVD of 1929 (levels by U. S. Army Corps of Engineers). Prior to Apr. 6, 1929, nonrecording gage near present site at different datum. Apr. 6, 1929, to Jan. 8, 1934, nonrecording gage at bridge 0.5 mi upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, Oct. 14 and May 16-18, which are fair, and for all other estimated daily discharges, which are poor (see page 11). Occasional regulation caused by recreation dam approximately 1,200 ft upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189	198	e100	e160	e100	e150	372	485	278	146	422	57
2	239	194	e100	e160	e100	e130	330	664	277	136	342	56
3	251	184	e120	e170	e110	e120	316	729	267	123	258	55
4	284	176	e150	e170	e100	e130	413	623	249	132	183	55
5	243	177	e150	e170	e98	e130	421	942	231	178	199	53
6	332	177	e140	e170	e95	e140	415	1,020	221	194	212	51
7	368	171	e130	e160	e90	e140	397	1,050	213	254	185	49
8	319	175	e130	e160	e100	e140	413	1,150	525	189	155	60
9	300	177	e130	e160	e100	e150	386	1,600	361	212	156	68
10	278	179	143	e140	e110	e160	366	1,490	370	201	167	64
11	251	190	146	e140	e110	e170	381	1,670	437	180	160	62
12	223	188	152	e100	e120	e180	392	1,870	422	168	159	61
13	199	195	172	e110	e120	e200	380	1,770	402	152	129	62
14	e190	201	177	e110	e130	e220	366	1,540	370	151	112	156
15	183	197	181	e100	e140	e230	351	1,290	328	179	105	96
16	177	194	182	e100	e140	e260	347	e1,040	291	148	101	189
17	169	195	183	e100	e150	e340	339	e830	255	138	96	190
18	190	202	322	e100	e150	e450	336	e660	227	120	85	138
19	191	244	e250	e96	e160	e550	472	585	201	106	80	107
20	189	220	e280	e95	e170	e510	386	614	176	100	76	95
21	195	267	e250	e94	e170	e480	365	532	167	96	70	87
22	195	256	e200	e98	e160	494	389	524	152	97	68	182
23	193	229	e190	e94	e150	482	389	492	123	85	64	100
24	211	220	e180	e99	e150	450	378	452	124	83	62	89
25	266	210	e180	e96	e140	448	350	409	123	77	58	83
26	220	e190	e200	e96	e140	394	310	371	124	70	63	87
27	222	e140	e210	e96	e140	370	287	341	114	69	68	89
28	224	e130	e180	e98	e150	395	270	314	170	68	62	76
29	221	e130	e180	e96	---	388	253	290	142	67	60	71
30	212	e140	e190	e96	---	414	288	339	136	66	60	83
31	207	---	e180	e98	---	408	---	407	---	136	58	---
TOTAL	7,131	5,746	5,478	3,732	3,593	9,223	10,858	26,093	7,476	4,121	4,075	2,671
MEAN	230	192	177	120	128	298	362	842	249	133	131	89.0
MAX	368	267	322	170	170	550	472	1,870	525	254	422	190
MIN	169	130	100	94	90	120	253	290	114	66	58	49
CFSM	0.33	0.28	0.25	0.17	0.18	0.43	0.52	1.21	0.36	0.19	0.19	0.13
IN.	0.38	0.31	0.29	0.20	0.19	0.49	0.58	1.39	0.40	0.22	0.22	0.14

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

MEAN	279	348	298	253	393	1,030	969	518	412	229	210	267
MAX	1,316	1,956	981	864	2,200	3,545	3,024	1,720	2,007	1,200	2,936	2,304
(WY)	(1987)	(1986)	(1929)	(1916)	(1938)	(1929)	(1993)	(1973)	(1996)	(1952)	(1924)	(1938)
MIN	52.8	62.4	40.7	45.8	47.4	181	237	86.4	56.3	25.0	19.4	27.4
(WY)	(1947)	(1950)	(1964)	(1959)	(1959)	(1940)	(1958)	(1958)	(1934)	(1936)	(1934)	(1932)

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1914 - 2003	
ANNUAL TOTAL	153,893		90,197			
ANNUAL MEAN	422		247		433	
HIGHEST ANNUAL MEAN					874 1986	
LOWEST ANNUAL MEAN					112 1958	
HIGHEST DAILY MEAN	2,030	Apr 9,10	1,870	May 12	14,800	Mar 20, 1918
LOWEST DAILY MEAN	97	Aug 11	49	Sep 7	(a)0.00	Sep 8, 1943
ANNUAL SEVEN-DAY MINIMUM	110	Aug 5	54	Sep 1	8.3	Aug 3, 1936
MAXIMUM PEAK FLOW			2,800	May 9	16,500	Jun 21, 1997
MAXIMUM PEAK STAGE			4.68	May 9	10.00	Jun 21, 1997
INSTANTANEOUS LOW FLOW			48	Sep 6-8	(a)0.00	Sep 8, 1943
ANNUAL RUNOFF (CFSM)	0.61		0.36		0.62	
ANNUAL RUNOFF (INCHES)	8.23		4.82		8.45	
10 PERCENT EXCEEDS	891		422		976	
50 PERCENT EXCEEDS	252		179		230	
90 PERCENT EXCEEDS	148		83		73	

(a) Result of regulation  
(e) Estimated due to ice effect or missing record

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI—Continued  
(NATIONAL WATER-QUALITY ASSESSMENT PROGRAM STATION)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-65, 1967-69, 1971, 1973 to current year. National Stream-Quality Accounting Network data collection began in January 1973 and was discontinued September 1994. National Water-Quality Assessment Program sampling began in April 1993.

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: May 2002 to current year.

SPECIFIC CONDUCTANCE: May 2002 to current year.

INSTRUMENTATION.--Continuous water temperature recorder and specific conductance recorder since May 2002. Sensor located at the left edge of water.

REMARKS.--Chemical analyses of some constituents for Wisconsin District program samples were done by the National Water-Quality Laboratory. Records represent water temperature at sensor within 0.5°C. Records for water temperature were faulty Oct. 2-7, Dec. 3 to Jan. 7, Jan. 20-29, July 24-30, and Aug. 19 to Sept. 2. Records for specific conductance were faulty Oct. 2-7, Dec. 3 to Jan. 7, Jan. 20 to Feb. 4, July 25-30, and Aug. 21 to Sept. 2.

## EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum, 32.5°C, Aug. 1, 2002; minimum, 0.0°C, many days during 2003.

SPECIFIC CONDUCTANCE: Maximum, 2,850 microsiemens per centimeter, Mar. 13, 2003; minimum, 208 microsiemens per centimeter, Aug. 13, 2002.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 28.0°C, July 4; minimum, 0.0°C, many days.

SPECIFIC CONDUCTANCE: Maximum, 2,850 microsiemens per centimeter, Mar. 13; minimum, 519 microsiemens per centimeter, Sept. 15.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	20.0	19.0	19.5	6.0	3.5	4.5	0.0	0.0	0.0	---	---	---
2	---	---	---	7.0	3.5	4.5	0.0	0.0	0.0	---	---	---
3	---	---	---	6.0	3.0	4.5	---	---	---	---	---	---
4	---	---	---	6.5	3.5	4.5	---	---	---	---	---	---
5	---	---	---	4.5	4.0	4.5	---	---	---	---	---	---
6	---	---	---	5.5	4.0	5.0	---	---	---	---	---	---
7	---	---	---	7.5	4.0	5.5	---	---	---	---	---	---
8	14.0	13.0	13.5	9.0	6.0	7.5	---	---	---	1.0	0.0	0.0
9	14.5	13.0	13.5	10.5	7.5	9.0	---	---	---	0.5	0.0	0.0
10	13.5	13.0	13.5	10.5	9.0	10.0	---	---	---	0.0	0.0	0.0
11	14.0	12.0	13.0	9.0	7.0	8.0	---	---	---	0.0	0.0	0.0
12	14.5	13.0	13.5	8.0	6.5	7.0	---	---	---	0.5	0.0	0.0
13	14.0	12.0	13.0	8.0	5.5	6.5	---	---	---	0.0	0.0	0.0
14	12.5	10.0	11.5	7.0	5.5	6.5	---	---	---	0.0	0.0	0.0
15	12.0	9.5	10.5	5.5	4.5	5.0	---	---	---	0.0	0.0	0.0
16	11.5	8.0	9.5	5.0	4.0	4.0	---	---	---	0.0	0.0	0.0
17	9.5	8.0	8.5	4.5	2.5	3.5	---	---	---	0.0	0.0	0.0
18	8.5	7.5	8.0	3.0	1.5	2.0	---	---	---	0.0	0.0	0.0
19	9.0	7.5	8.0	6.0	2.5	3.5	---	---	---	0.0	0.0	0.0
20	10.0	7.0	8.0	4.0	3.0	3.5	---	---	---	---	---	---
21	8.5	8.0	8.0	4.0	3.0	3.5	---	---	---	---	---	---
22	8.5	7.5	8.0	3.5	2.0	2.5	---	---	---	---	---	---
23	8.5	7.0	7.5	4.5	2.0	3.0	---	---	---	---	---	---
24	8.0	7.0	7.5	3.0	1.0	2.0	---	---	---	---	---	---
25	7.5	7.0	7.5	2.0	0.0	1.0	---	---	---	---	---	---
26	9.5	7.5	8.0	0.5	0.0	0.0	---	---	---	---	---	---
27	8.0	6.5	7.5	1.5	0.0	0.0	---	---	---	---	---	---
28	10.0	7.0	8.0	0.5	0.0	0.0	---	---	---	---	---	---
29	8.0	6.5	7.0	1.5	0.0	0.5	---	---	---	---	---	---
30	8.5	6.0	7.0	1.0	0.0	0.0	---	---	---	0.0	0.0	0.0
31	8.0	5.5	6.5	---	---	---	---	---	---	0.0	0.0	0.0
MONTH	20.0	5.5	9.8	10.5	0.0	4.0	0.0	0.0	0.0	1.0	0.0	0.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	0.0	0.0	0.0	9.0	4.5	7.0	12.0	10.5	11.5
2	0.0	0.0	0.0	0.0	0.0	0.0	8.0	6.0	7.0	12.5	10.5	11.5
3	0.0	0.0	0.0	0.0	0.0	0.0	7.0	5.0	6.0	13.5	10.5	12.0
4	0.0	0.0	0.0	0.0	0.0	0.0	5.0	3.0	4.0	13.5	11.5	12.0
5	0.0	0.0	0.0	0.0	0.0	0.0	4.5	2.0	3.5	12.5	11.0	11.5
6	0.0	0.0	0.0	0.0	0.0	0.0	6.0	2.0	3.5	13.0	11.0	12.0
7	0.0	0.0	0.0	0.0	0.0	0.0	4.5	1.5	2.0	13.0	11.5	12.0
8	0.0	0.0	0.0	0.0	0.0	0.0	3.5	1.0	2.0	12.5	11.0	12.0
9	0.0	0.0	0.0	0.0	0.0	0.0	7.0	1.0	4.0	14.0	11.5	12.5
10	0.0	0.0	0.0	0.0	0.0	0.0	9.0	3.5	6.5	14.5	13.0	14.0
11	0.0	0.0	0.0	0.0	0.0	0.0	11.0	6.5	9.0	14.5	13.0	14.0
12	0.0	0.0	0.0	0.0	0.0	0.0	12.0	7.5	10.0	13.5	12.0	12.5
13	0.0	0.0	0.0	0.0	0.0	0.0	13.0	8.0	10.5	15.0	12.5	13.5
14	0.0	0.0	0.0	0.0	0.0	0.0	15.5	9.5	12.5	14.0	13.5	14.0
15	0.0	0.0	0.0	0.0	0.0	0.0	18.5	13.0	15.5	15.0	13.0	13.5
16	0.0	0.0	0.0	0.0	0.0	0.0	16.5	11.0	13.0	16.5	13.5	15.0
17	0.0	0.0	0.0	0.5	0.0	0.0	11.0	9.5	10.0	16.5	15.0	16.0
18	0.0	0.0	0.0	0.0	0.0	0.0	9.5	8.0	9.0	17.0	15.0	16.0
19	0.0	0.0	0.0	0.0	0.0	0.0	10.5	7.5	9.0	17.0	15.5	16.0
20	0.0	0.0	0.0	0.5	0.0	0.0	13.0	10.0	11.5	17.5	16.0	17.0
21	0.0	0.0	0.0	1.0	0.0	0.5	12.0	10.5	11.0	17.5	16.0	17.0
22	0.0	0.0	0.0	2.0	0.0	0.5	14.0	9.0	11.5	17.5	16.0	17.0
23	0.0	0.0	0.0	3.5	0.0	1.0	14.0	9.0	11.5	17.5	16.5	17.0
24	0.0	0.0	0.0	4.5	0.5	2.5	12.5	9.0	11.5	17.5	17.0	17.5
25	0.0	0.0	0.0	6.5	2.0	4.5	13.5	10.0	11.5	19.0	17.5	18.0
26	0.0	0.0	0.0	6.5	3.5	5.0	14.5	9.5	12.0	20.5	18.0	19.0
27	0.0	0.0	0.0	5.5	4.0	5.0	16.5	11.0	13.5	21.0	18.5	19.5
28	0.0	0.0	0.0	6.0	5.0	5.5	18.0	14.5	16.0	20.5	19.0	19.5
29	---	---	---	5.0	4.0	4.5	17.0	13.5	15.5	19.5	17.5	18.5
30	---	---	---	5.0	2.5	4.0	15.0	12.0	13.5	19.0	17.5	18.0
31	---	---	---	6.5	2.5	5.0	---	---	---	17.5	16.0	16.5
MONTH	0.0	0.0	0.0	6.5	0.0	1.2	18.5	1.0	9.4	21.0	10.5	15.0
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.0	15.0	16.0	24.5	22.0	23.0	25.0	23.5	24.0	---	---	---
2	17.5	15.0	16.5	25.0	23.0	24.0	25.0	23.5	24.0	---	---	---
3	17.0	15.5	16.5	26.5	23.5	25.0	24.5	23.0	23.5	24.5	20.0	22.0
4	17.5	16.0	16.5	28.0	25.0	26.0	24.0	22.5	23.0	24.0	19.5	21.0
5	18.0	16.0	17.0	27.0	25.5	26.0	24.0	22.5	23.0	24.0	19.0	20.5
6	17.0	16.5	17.0	27.0	25.5	25.5	25.0	23.0	24.0	24.0	19.0	21.0
7	17.5	16.5	17.0	26.0	24.5	25.0	25.5	23.5	24.5	24.5	20.5	22.0
8	17.0	16.0	16.5	25.0	23.5	24.0	25.0	24.0	24.5	24.5	21.0	22.5
9	18.0	16.0	17.0	24.5	23.5	24.0	24.5	23.5	24.0	25.0	22.0	23.0
10	19.0	17.5	18.0	24.0	23.0	23.5	24.5	23.0	23.5	25.5	22.0	23.5
11	18.5	17.5	18.0	23.5	22.0	22.5	23.5	23.0	23.0	26.0	22.5	23.5
12	18.5	17.0	17.5	24.0	22.0	22.5	24.5	23.0	23.5	24.0	21.5	22.5
13	20.5	18.0	19.0	24.0	22.0	22.5	25.0	23.0	23.5	22.0	21.5	22.0
14	21.5	19.0	20.5	24.5	22.5	23.0	24.5	23.5	24.0	21.5	20.0	21.0
15	22.0	20.0	21.0	25.5	23.0	24.0	26.5	24.0	25.0	21.5	19.0	20.0
16	23.0	20.0	21.5	26.0	24.0	25.0	27.5	25.0	26.0	21.0	19.0	20.0
17	23.0	20.5	21.5	26.0	23.5	24.5	27.5	25.0	26.0	21.0	18.5	19.5
18	23.0	21.5	22.0	25.0	23.0	23.5	27.0	24.5	25.0	22.0	19.5	20.5
19	22.5	20.5	21.5	25.5	22.5	23.5	---	---	---	20.5	18.5	19.5
20	21.5	20.0	20.5	24.5	22.5	23.5	---	---	---	20.5	17.5	18.5
21	22.0	20.0	21.0	25.5	23.0	24.0	---	---	---	20.5	17.0	18.0
22	23.0	20.5	21.5	25.0	22.5	23.5	---	---	---	18.5	17.0	17.5
23	24.5	21.5	22.5	25.0	21.5	22.5	---	---	---	19.0	16.0	17.0
24	25.0	22.5	23.5	---	---	---	---	---	---	19.0	16.0	17.0
25	26.0	23.5	24.5	---	---	---	---	---	---	17.5	14.5	15.5
26	26.5	23.5	25.0	---	---	---	---	---	---	16.5	14.5	15.0
27	25.5	23.0	24.0	---	---	---	---	---	---	15.0	13.0	14.0
28	24.0	22.0	23.0	---	---	---	---	---	---	14.5	13.0	13.5
29	24.0	22.0	22.5	---	---	---	---	---	---	15.5	11.5	13.0
30	24.0	22.0	22.5	---	---	---	---	---	---	13.5	11.0	12.0
31	---	---	---	25.0	22.0	23.5	---	---	---	---	---	---
MONTH	26.5	15.0	20.0	28.0	21.5	23.9	27.5	22.5	24.1	26.0	11.0	19.1

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	636	586	609	819	803	812	940	896	926	---	---	---
2	---	---	---	823	803	812	1,030	924	958	---	---	---
3	---	---	---	827	807	817	---	---	---	---	---	---
4	---	---	---	824	811	819	---	---	---	---	---	---
5	---	---	---	830	809	817	---	---	---	---	---	---
6	---	---	---	837	815	824	---	---	---	---	---	---
7	---	---	---	844	827	834	---	---	---	---	---	---
8	819	791	810	855	738	840	---	---	---	915	888	899
9	791	742	756	860	847	853	---	---	---	916	889	903
10	747	728	738	870	854	863	---	---	---	975	916	946
11	742	728	734	867	848	863	---	---	---	1,020	969	995
12	765	742	755	863	848	857	---	---	---	1,000	949	976
13	769	765	767	866	859	864	---	---	---	972	927	948
14	807	764	787	874	865	872	---	---	---	1,060	972	1,010
15	804	792	799	875	863	871	---	---	---	1,080	1,040	1,060
16	811	787	799	868	860	865	---	---	---	1,100	1,060	1,080
17	821	797	809	863	845	858	---	---	---	1,110	1,070	1,090
18	818	797	807	852	829	847	---	---	---	1,180	1,110	1,140
19	815	787	802	845	826	832	---	---	---	1,240	1,180	1,220
20	832	810	819	848	828	843	---	---	---	---	---	---
21	829	814	821	854	826	838	---	---	---	---	---	---
22	831	808	823	831	825	829	---	---	---	---	---	---
23	828	803	817	837	826	831	---	---	---	---	---	---
24	817	798	805	839	803	831	---	---	---	---	---	---
25	798	727	770	832	820	827	---	---	---	---	---	---
26	802	758	782	835	826	830	---	---	---	---	---	---
27	812	790	803	850	827	840	---	---	---	---	---	---
28	817	798	809	866	842	856	---	---	---	---	---	---
29	818	808	814	867	852	862	---	---	---	---	---	---
30	823	742	811	896	867	879	---	---	---	---	---	---
31	821	804	813	---	---	---	---	---	---	---	---	---
MONTH	832	586	786	896	738	843	1,030	896	942	1,240	888	1,020
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	1,040	976	1,010	724	696	711	821	545	731
2	---	---	---	1,030	978	1,010	723	698	712	821	743	774
3	---	---	---	1,070	1,020	1,040	729	698	717	760	725	750
4	---	---	---	1,170	1,070	1,120	860	703	763	729	697	720
5	1,470	1,330	1,400	1,700	1,140	1,320	971	824	882	794	671	705
6	1,330	1,180	1,240	1,580	1,380	1,440	857	771	812	711	678	686
7	1,260	1,210	1,230	2,040	1,270	1,540	1,110	796	927	718	680	692
8	1,320	1,230	1,250	1,920	1,400	1,690	1,700	1,050	1,240	704	647	673
9	1,390	1,270	1,340	1,400	1,220	1,290	1,480	1,040	1,150	656	603	639
10	1,280	1,240	1,250	1,220	1,140	1,160	1,090	939	1,030	648	640	642
11	1,480	1,280	1,400	1,370	1,140	1,200	939	893	924	646	620	632
12	1,620	1,480	1,550	1,440	1,280	1,350	1,040	893	974	624	573	586
13	1,600	1,430	1,510	2,850	1,380	1,940	939	843	911	592	571	582
14	1,430	1,370	1,390	2,520	1,690	1,960	857	800	842	616	592	606
15	1,380	1,320	1,350	1,980	1,520	1,660	831	759	812	645	616	635
16	1,320	1,230	1,270	1,750	1,170	1,400	828	787	807	657	641	648
17	1,230	1,170	1,200	1,180	951	1,060	801	779	791	666	654	660
18	1,170	1,140	1,150	1,000	874	940	787	768	781	680	666	670
19	1,150	1,110	1,130	898	763	837	867	756	802	703	680	686
20	1,110	1,060	1,090	820	631	708	831	792	811	744	697	718
21	1,080	1,010	1,050	637	588	615	800	786	793	711	700	705
22	1,060	1,020	1,040	594	572	584	821	781	793	718	704	711
23	1,070	1,000	1,040	602	570	589	809	774	796	726	718	722
24	1,080	999	1,030	597	578	588	798	767	785	732	717	723
25	1,050	1,020	1,030	606	590	597	784	747	772	727	534	712
26	1,040	980	1,010	611	599	606	776	744	762	734	722	728
27	1,020	973	999	651	611	636	773	745	760	728	709	716
28	1,050	1,000	1,020	724	651	682	771	755	762	739	720	733
29	---	---	---	729	687	709	776	761	770	747	731	742
30	---	---	---	704	687	694	905	691	770	776	725	754
31	---	---	---	711	690	700	---	---	---	894	665	718
MONTH	1,620	973	1,210	2,850	570	1,050	1,700	691	839	894	534	690

## 04087000 MILWAUKEE RIVER AT MILWAUKEE, WI—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	742	707	723	886	609	861	947	762	871	---	---	---
2	756	742	750	899	756	876	762	677	734	---	---	---
3	761	752	755	897	842	865	697	575	633	959	946	954
4	772	754	761	853	722	827	578	554	565	953	939	948
5	781	709	769	861	801	831	666	578	612	963	942	947
6	792	780	786	835	715	772	745	645	717	979	924	966
7	802	789	797	755	619	709	776	728	766	986	967	976
8	885	525	725	690	542	629	769	740	760	1,020	982	995
9	733	578	647	814	690	748	754	747	750	1,030	1,020	1,020
10	771	733	759	824	801	814	779	753	764	1,030	945	1,030
11	786	771	782	836	727	817	783	765	775	1,040	1,030	1,030
12	775	748	764	837	815	832	793	763	776	1,040	999	1,030
13	763	748	758	824	740	806	810	793	802	1,040	949	1,020
14	767	751	760	817	741	811	830	810	822	1,020	569	882
15	766	755	760	814	781	805	830	800	826	682	519	604
16	777	762	772	815	691	799	835	768	824	878	623	753
17	795	772	780	806	734	793	834	821	827	1,020	842	964
18	790	774	784	814	781	806	846	825	834	1,020	947	1,000
19	793	784	788	823	733	811	862	831	843	983	932	964
20	798	739	792	835	818	825	874	810	840	951	924	938
21	824	794	809	852	650	828	---	---	---	925	863	910
22	833	772	812	869	842	859	---	---	---	917	792	871
23	831	750	805	878	826	871	---	---	---	792	710	763
24	823	745	814	887	839	878	---	---	---	756	702	727
25	840	811	823	---	---	---	---	---	---	711	690	703
26	847	782	828	---	---	---	---	---	---	768	696	725
27	861	780	840	---	---	---	---	---	---	799	767	790
28	877	802	855	---	---	---	---	---	---	823	799	809
29	906	866	886	---	---	---	---	---	---	838	823	831
30	880	850	872	---	---	---	---	---	---	845	835	840
31	---	---	---	943	924	935	---	---	---	---	---	---
MONTH	906	525	785	943	542	816	947	554	767	1,040	519	892

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat fltr inc tit mg/L as CaCO3 (39086)	Bicarbonate, wat fltr incrm. titr., field, mg/L (00453)	Carbonate, wat fltr incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)
OCT 2002													
07...	1435	363	10	749	8.2	8.0	803	14.2	242	280	8	86.8	32.5
NOV													
04...	1310	173	10	741	15.7	8.6	828	5.5	275	321	7	86.8	39.5
DEC													
03...	1310	120	10	754	E18.2	8.3	995	-0.1	305	366	3	115	40.9
JAN 2003													
07...	1425	160	10	737	17.3	8.4	955	0.1	290	343	6	116	40.6
FEB													
04...	1510	100	10	737	16.3	8.2	1,730	-0.2	281	338	3	377	48.3
MAR													
03...	1255	120	40	739	21.5	8.5	1,070	-0.2	305	359	6	141	44.3
17...	1300	315	10	741	16.0	8.1	1,070	0.0	205	245	3	--	--
APR													
09...	1355	383	10	751	13.7	8.2	1,160	4.7	216	251	6	239	43.9
22...	1150	388	10	747	11.6	8.2	829	11.0	245	273	13	--	--
MAY													
05...	1300	1,030	10	729	9.8	7.8	714	10.8	192	234	--	84.5	35.6
12...	1300	1,870	10	741	10.2	7.7	579	12.7	197	240	0.0	--	--
28...	1300	321	10	739	9.0	8.7	743	19.8	260	E266	E25	--	--
JUN													
02...	1310	274	10	--	9.2	8.5	755	17.0	272	276	27	80.5	29.1
19...	0935	201	10	747	8.4	8.1	791	21.2	285	322	4	--	--
JUL													
07...	1400	244	10	741	6.9	8.0	724	25.2	198	E198	E4	98.0	25.4
21...	1355	102	10	737	7.8	8.2	851	25.1	261	292	6	--	--
AUG													
05...	1220	196	10	744	7.7	7.9	615	23.3	158	192	0.0	79.6	28.8
SEP													
02...	1000	26	10	753	6.4	7.8	933	22.1	251	294	6	137	36.6
Date	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	2,6-Diethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)
OCT 2002													
07...	0.56	E.04	1.13	0.012	0.04	0.08	0.104	1.1	<0.1	1.1	5.7	<0.006	E.024
NOV													
04...	0.62	<0.04	1.34	E.006	<0.02	0.08	0.035	0.5	<0.1	0.5	7.7	<0.006	E.022
DEC													
03...	0.59	E.04	2.00	0.012	E.01	0.10	0.039	0.9	<0.1	0.9	5.8	<0.006	E.024
JAN 2003													
07...	0.60	0.06	2.64	0.016	0.02	0.10	0.053	1.1	<0.1	1.0	5.4	<0.006	E.021
FEB													
04...	1.2	0.40	3.71	0.055	0.06	0.12	0.125	1.1	<0.1	1.1	5.8	<0.006	E.031
MAR													
03...	0.54	E.03	3.13	0.018	E.01	0.08	0.041	0.4	<0.1	0.4	4.5	<0.006	E.031
17...	1.3	0.28	2.33	0.029	0.08	--	0.185	--	--	--	--	<0.006	E.023
APR													
09...	0.68	<0.04	1.52	0.015	E.01	0.11	0.049	0.9	<0.1	0.9	9.4	<0.006	E.018
22...	1.1	<0.04	0.61	0.009	<0.02	--	0.111	--	--	--	--	<0.006	E.016
MAY													
05...	1.1	E.03	0.97	0.017	0.03	0.34	0.126	2.9	<0.1	2.8	10.3	<0.006	E.023
12...	1.8	0.06	1.63	0.027	0.06	--	0.20	--	--	--	--	<0.006	E.037
28...	1.3	<0.04	0.10	0.009	<0.02	--	0.100	--	--	--	--	<0.006	E.025
JUN													
02...	1.1	<0.04	0.45	0.018	<0.02	0.25	0.091	1.8	<0.1	1.8	9.8	<0.006	E.039
19...	1.4	<0.04	0.67	0.021	0.06	--	0.194	--	--	--	--	<0.006	E.030
JUL													
07...	1.4	0.14	0.10	0.013	0.15	0.47	0.30	3.5	<0.1	3.5	8.6	<0.006	E.026
21...	1.2	0.06	0.16	0.016	0.12	--	0.21	--	--	--	--	<0.006	E.021
AUG													
05...	--	--	--	--	--	0.40	--	3.6	<0.1	3.6	8.1	<0.006	E.063
SEP													
02...	1.6	0.20	0.07	0.009	0.13	0.35	0.27	2.8	<0.1	2.8	8.3	<0.006	E.017



04087000 MILWAUKEE RIVER AT MILWAUKEE, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)
Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diazi-non-d10 surrog, wat flt 0.7u GF percent recovry (91063)	Diel-drin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Desulf-inyl- fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)
OCT 2002													
07...	<0.006	<0.004	<0.005	110	0.021	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
NOV													
04...	<0.006	<0.004	<0.005	98.1	0.019	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
DEC													
03...	<0.006	<0.004	<0.005	94.4	0.018	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
JAN 2003													
07...	<0.006	<0.004	<0.005	87.1	0.016	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
FEB													
04...	<0.006	<0.004	<0.005	100	0.024	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
MAR													
03...	<0.006	<0.004	<0.005	103	0.018	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
17...	<0.006	<0.004	<0.005	90.6	0.014	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
APR													
09...	<0.006	<0.004	<0.005	84.2	0.023	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
22...	0.011	<0.004	<0.005	86.1	0.032	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
MAY													
05...	0.066	<0.004	<0.005	79.5	0.049	<0.050	<0.010	<0.002	E.005	<0.020	<0.005	<0.006	<0.018
12...	0.137	<0.004	<0.005	105	0.098	<0.050	<0.010	<0.002	E.005	<0.020	<0.005	<0.006	<0.018
28...	0.011	<0.004	<0.005	85.4	0.035	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
JUN													
02...	0.042	0.008	<0.005	105	0.130	<0.050	<0.010	<0.002	E.007	<0.020	<0.005	<0.006	<0.018
19...	<0.006	<0.004	<0.005	90.6	0.259	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
JUL													
07...	<0.006	<0.004	<0.005	97.2	0.063	<0.050	<0.010	<0.002	E.009	<0.020	<0.005	<0.006	<0.018
21...	<0.006	<0.004	<0.005	99.0	0.080	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
AUG													
05...	<0.006	<0.004	<0.005	87.0	0.487	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
SEP													
02...	<0.006	<0.004	<0.005	79.9	0.022	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018

STREAMS TRIBUTARY TO LAKE MICHIGAN

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)
Date	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Pronamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-fluralin, water, fltrd 0.7u GF ug/L (82661)
OCT 2002 07...	<0.003	<0.004	<0.035	<0.027	<0.006	E.007	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
NOV 04...	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
DEC 03...	<0.003	<0.004	<0.035	<0.027	<0.006	E.001	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
JAN 2003 07...	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
FEB 04...	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
MAR 03...	<0.003	<0.004	<0.035	<0.027	<0.006	E.003	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
MAR 17...	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
APR 09...	<0.003	<0.004	<0.035	<0.027	<0.006	E.008	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
APR 22...	<0.003	<0.004	<0.035	<0.027	<0.006	E.010	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
MAY 05...	<0.003	<0.004	<0.035	<0.027	<0.006	0.053	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
MAY 12...	<0.003	<0.004	<0.035	<0.027	<0.006	0.055	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	E.008
MAY 28...	<0.003	<0.004	<0.035	<0.027	<0.006	0.076	0.009	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
JUN 02...	<0.003	<0.004	<0.035	<0.027	<0.006	0.046	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
JUN 19...	<0.003	<0.004	<0.035	<0.027	<0.006	0.163	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
JUL 07...	<0.003	<0.004	<0.035	<0.027	<0.006	E.011	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
JUL 21...	<0.003	<0.004	<0.035	<0.027	<0.006	0.014	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
AUG 05...	<0.003	<0.004	<0.035	<0.027	<0.006	0.042	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
SEP 02...	<0.003	<0.004	<0.035	<0.027	<0.006	E.005	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022
OCT 2002 07...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.010	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
NOV 04...	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.015	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
DEC 03...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.015	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
JAN 2003 07...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.015	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
FEB 04...	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.014	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
MAR 03...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.012	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
MAR 17...	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.008	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
APR 09...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.015	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
APR 22...	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.029	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
MAY 05...	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.047	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
MAY 12...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.042	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
MAY 28...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.027	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
JUN 02...	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.021	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
JUN 19...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.012	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
JUL 07...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.011	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
JUL 21...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.080	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
AUG 05...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
SEP 02...	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.027	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Suspended sediment concentration mg/L (80154)
OCT	
07...	15
NOV	
04...	34
DEC	
03...	47
JAN	
07...	35
FEB	
04...	23
MAR	
03...	31
17...	34
APR	
09...	21
22...	24
MAY	
05...	20
12...	65
28...	12
JUN	
02...	82
19...	126
JUL	
07...	--
21...	86
AUG	
05...	74
SEP	
02...	81

## 04087030 MEMOMONEE RIVER AT MEMOMONEE FALLS, WI

LOCATION.--Lat 43°10'22", long 88°06'14", in SE ¼ NE ¼ sec.10, T.8 N., R.20 E., Waukesha County, Hydrologic Unit 04040003, on right bank, 150 ft upstream from Pilgrim Road (County Trunk Highway YY) bridge in Menomonee Falls, at mile 21.1.

DRAINAGE AREA.--34.7 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1974 to September 1977, July 1979 to current year.

REVISED RECORDS.--WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 755.51 ft above NGVD of 1929 (Wisconsin Department of Transportation benchmark). Prior to Aug. 20, 1996, water-stage recorder at present site at datum 2.01 ft lower.

REMARKS.--Records fair except those for estimated daily discharges and those for discharges less than 5 ft<sup>3</sup>/s, which are poor (see page 11). Occasional regulation caused by dam in Menomonee Falls, about 1.0 mi upstream. Gage-height telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	6.9	e6.6	e6.4	e2.0	e2.3	13	147	28	3.4	68	1.4
2	11	6.9	e6.0	6.4	e2.5	e2.2	12	105	19	2.9	50	1.4
3	18	6.9	e5.2	e6.4	e3.0	e2.1	12	58	15	2.6	19	1.4
4	27	6.9	e5.2	6.3	e2.1	e2.1	41	40	12	3.4	12	1.5
5	22	7.1	e5.2	6.2	e1.7	e2.1	35	97	10	6.7	8.7	1.3
6	13	6.7	e5.8	6.5	e1.5	e2.2	28	82	9.7	28	8.9	1.3
7	8.9	6.5	e5.6	6.6	e1.4	e2.5	25	89	9.9	13	14	1.2
8	8.0	6.6	e5.6	6.6	e1.2	e2.3	23	143	46	8.8	11	1.2
9	6.3	7.1	e5.8	7.0	e1.1	e2.2	26	197	41	6.3	7.9	1.2
10	5.9	7.9	e5.2	e6.0	e1.1	e2.5	36	180	31	5.2	5.8	1.2
11	5.7	11	e5.6	e4.8	e1.1	e2.9	35	178	54	4.5	4.2	1.1
12	6.2	7.8	e5.6	e4.2	e1.1	e3.6	28	202	40	3.7	4.1	1.2
13	5.8	7.1	e5.7	e2.2	e1.1	e5.0	23	165	27	3.0	4.1	4.9
14	5.3	7.0	e5.7	e1.3	e1.1	e1.1	20	106	19	2.9	4.0	12
15	5.3	6.8	e5.5	e1.2	e1.1	e5.7	19	77	13	5.8	3.6	5.7
16	4.8	6.5	e5.5	e1.2	e1.1	e4.0	18	56	10	3.1	3.7	3.7
17	4.2	6.5	e5.5	e1.2	e1.4	e2.8	15	43	8.2	2.8	3.3	2.9
18	7.7	8.0	19	e1.2	e1.6	e2.2	14	35	7.1	2.5	3.2	2.4
19	9.1	9.4	20	e1.2	e1.8	19	22	30	6.1	1.9	3.0	2.3
20	7.7	8.7	15	e1.1	e2.0	20	26	44	5.2	1.8	2.5	2.3
21	6.9	9.3	11	e1.1	e1.9	19	24	31	4.9	2.3	2.3	2.4
22	6.1	9.2	e10	e1.1	e1.8	16	19	24	4.1	2.5	2.2	3.0
23	5.4	8.6	e9.0	e1.1	e1.8	14	15	20	4.0	2.0	2.0	2.2
24	6.7	7.5	e7.0	e1.1	e1.8	14	13	17	4.1	1.9	2.0	2.3
25	15	7.1	e6.0	e1.1	e1.8	13	12	14	4.8	1.8	2.0	2.3
26	15	7.6	e6.0	e1.2	e2.0	12	11	12	4.8	1.8	2.4	2.7
27	11	6.9	6.2	e1.2	e2.1	12	10	11	4.4	1.5	2.2	2.7
28	9.3	7.7	6.3	e1.2	e2.2	20	9.8	11	8.1	1.6	1.9	2.2
29	7.8	7.2	6.2	e1.3	---	20	9.1	11	5.6	1.9	1.8	2.0
30	6.8	e7.0	e6.3	e1.3	---	14	31	23	4.2	1.9	1.5	1.9
31	6.7	---	e6.3	e1.7	---	13	---	47	---	16	1.5	---
TOTAL	283.9	226.4	229.6	97.4	46.4	398.0	624.9	2,295	460.2	147.5	262.8	75.3
MEAN	9.16	7.55	7.41	3.14	1.66	12.8	20.8	74.0	15.3	4.76	8.48	2.51
MAX	27	11	20	7.0	3.0	57	41	202	54	28	68	12
MIN	4.2	6.5	5.2	1.1	1.1	2.1	9.1	11	4.0	1.5	1.5	1.1
CFSM	0.26	0.22	0.21	0.09	0.05	0.37	0.60	2.13	0.44	0.14	0.24	0.07
IN.	0.30	0.24	0.25	0.10	0.05	0.43	0.67	2.46	0.49	0.16	0.28	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

	1975	1976	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	
MEAN	19.5	26.8	22.6	17.6	33.4	56.6	63.8	34.9	32.8	18.7	14.2	18.6																		
MAX	94.3	137	70.4	72.8	95.9	124	193	133	142	86.1	34.9	151																		
(WY)	(1982)	(1986)	(1985)	(1988)	(2001)	(1976)	(1993)	(2000)	(1997)	(1994)	(1986)	(1986)																		
MIN	3.31	3.38	3.00	2.29	1.66	12.8	20.8	3.80	3.33	1.55	1.47	1.86																		
(WY)	(1977)	(1977)	(1977)	(1977)	(2003)	(2003)	(2003)	(1977)	(1988)	(1988)	(1988)	(1976)																		

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	8,454.7		5,147.4			
ANNUAL MEAN	23.2		14.1		29.8	
HIGHEST ANNUAL MEAN					53.4	
LOWEST ANNUAL MEAN					7.32	
HIGHEST DAILY MEAN	364	Jun 4	202	May 12	(e)960	Jun 21, 1997
LOWEST DAILY MEAN	1.4	Aug 11	(a)1.1	(b)Jan 20-25	0.63	Aug 17, 1988
ANNUAL SEVEN-DAY MINIMUM	2.0	Aug 5	(a)1.1	Feb 9	0.82	Aug 11, 1988
MAXIMUM PEAK FLOW			403	Jul 6	(c)1,500	Jun 21, 1997
MAXIMUM PEAK STAGE			5.49	Jul 6	(d)8.31	Jun 21, 1997
ANNUAL RUNOFF (CFSM)	0.67		0.41		0.86	
ANNUAL RUNOFF (INCHES)	9.06		5.52		11.65	
10 PERCENT EXCEEDS	45		29		64	
50 PERCENT EXCEEDS	8.8		6.3		14	
90 PERCENT EXCEEDS	3.4		1.4		4.2	

(a) Ice affected

(b) Also occurred Feb. 9-16 and Sept. 11

(c) From rating curve extended above 717 ft<sup>3</sup>/s

(d) From floodmarks

(e) Estimated due to ice effect or missing record

## 04087088 UNDERWOOD CREEK AT WAUWATOSA, WI

LOCATION.--Lat 43°03'17", long 88°02'46", in SW ¼ NW ¼ sec.20, T.7 N., R.21 E., Milwaukee County, Hydrologic Unit 04040003, at U.S. Highway 45, on right bank, just downstream of the Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, on Milwaukee County Park Commission property, at Wauwatosa, and 0.8 mi upstream from mouth.

DRAINAGE AREA.--18.2 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1974 to November 1979, July 1980 to current year. Unpublished daily discharge records from November 1974 to February 1975 in District files.

REVISED RECORDS.--WDR WI-77-1: Drainage area. WRD WI-85-1: 1984. WRD WI-94-1: 1993(M). WRD WI-98-1: 1978(M, date).

GAGE.--Water-stage recorder, crest-stage gage, and steel plate weir. Datum of gage is 683.78 ft above NGVD of 1929 (Southeastern Wisconsin Regional Planning Commission bench mark). Prior to Sept. 10, 1993, the orifice was located 10 ft downstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge. The orifice was moved to 30 ft upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge on Sept. 10, 1993, and is at same datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	4.6	e3.6	3.6	e7.0	e2.8	6.0	83	8.5	4.3	3.9	2.3
2	59	4.3	e3.5	3.6	e9.0	e2.7	5.2	18	6.8	4.0	3.5	2.6
3	15	4.3	e3.3	3.6	e14	e2.5	4.9	11	6.7	3.8	40	2.5
4	26	4.1	e3.2	3.5	e9.0	e2.5	17	16	6.1	6.8	6.1	2.2
5	12	5.3	e3.1	4.0	e5.0	e2.5	11	65	5.7	17	4.0	2.3
6	9.0	4.8	e3.1	3.7	e4.0	e2.5	6.3	20	5.6	14	19	2.6
7	7.5	4.3	e3.3	3.5	e3.0	e2.9	8.2	35	5.6	11	6.9	2.7
8	6.7	4.5	e3.3	3.8	e2.8	e2.7	11	20	51	16	3.5	2.9
9	6.4	4.4	e3.5	3.6	e2.6	e2.6	16	98	16	6.4	3.0	3.1
10	6.1	4.6	e4.0	e2.8	e2.5	e2.5	16	30	9.4	8.3	2.8	3.1
11	5.9	6.7	e3.5	e2.6	e2.4	e2.8	16	77	8.7	7.3	2.6	3.5
12	5.8	4.8	3.1	e2.4	e2.4	e3.6	11	53	7.4	5.3	6.0	11
13	4.8	4.6	3.1	e2.3	e2.3	e5.3	8.6	25	6.5	4.1	3.4	14
14	4.7	4.4	3.1	e2.3	e2.2	e13	7.8	19	5.8	4.0	3.0	31
15	4.5	4.3	3.0	e2.3	e2.2	32	7.1	18	5.2	29	2.9	6.5
16	4.1	4.3	2.9	e2.3	e2.2	19	6.5	14	4.9	6.1	2.4	4.0
17	5.0	4.3	3.1	e2.3	e2.2	10	6.1	12	4.7	4.3	2.3	3.5
18	10	6.9	26	e2.2	e2.4	6.7	5.9	11	4.6	3.6	2.5	3.5
19	6.1	7.9	8.5	e2.2	e2.8	12	20	9.8	4.2	3.2	2.3	3.5
20	5.0	5.1	4.9	e2.2	e3.1	10	14	19	4.0	3.4	2.6	3.1
21	4.7	12	3.9	e2.2	e4.0	7.4	9.4	9.7	4.1	4.9	2.6	2.8
22	4.5	6.0	3.5	e2.2	e2.4	6.0	7.5	8.3	3.8	4.1	2.3	18
23	4.5	5.0	3.1	e2.2	e2.3	5.6	6.4	7.8	3.8	3.7	2.2	4.8
24	12	4.6	3.1	e2.2	e2.2	5.4	5.9	7.3	4.2	3.2	2.2	3.6
25	26	4.4	3.1	e2.3	e2.2	5.3	5.7	6.8	6.3	3.2	3.3	3.4
26	9.1	4.3	2.9	e2.3	e2.2	5.0	5.3	6.4	6.8	3.2	3.3	6.8
27	6.4	4.2	3.3	e2.3	e2.4	4.8	5.0	6.0	16	3.0	2.3	3.8
28	5.7	3.9	3.2	e2.4	e2.7	15	4.9	9.5	18	2.8	2.3	3.0
29	5.0	4.2	3.4	e2.4	---	7.2	4.7	8.4	6.2	2.9	2.3	3.0
30	5.0	3.6	3.7	e3.0	---	5.4	35	18	4.6	4.5	2.1	3.2
31	4.9	---	3.5	e5.0	---	5.6	---	27	---	3.1	2.2	---
TOTAL	297.9	150.7	131.8	87.3	103.5	213.3	294.4	769.0	251.2	200.5	149.8	162.3
MEAN	9.61	5.02	4.25	2.82	3.70	6.88	9.81	24.8	8.37	6.47	4.83	5.41
MAX	59	12	26	5.0	14	32	35	98	51	29	40	31
MIN	4.1	3.6	2.9	2.2	2.2	2.5	4.7	6.0	3.8	2.8	2.1	2.2
CFSM	0.53	0.28	0.23	0.15	0.20	0.38	0.54	1.36	0.46	0.36	0.27	0.30
IN.	0.61	0.31	0.27	0.18	0.21	0.44	0.60	1.57	0.51	0.41	0.31	0.33

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

MEAN	8.99	10.9	10.1	8.62	13.9	22.4	27.1	17.8	17.3	13.0	16.3	12.9
MAX	26.9	42.1	27.2	39.1	37.9	73.4	73.6	56.9	68.8	37.5	98.1	56.0
(WY)	(1987)	(1986)	(1983)	(1988)	(2001)	(1979)	(1993)	(2000)	(1997)	(1999)	(1998)	(1986)
MIN	2.43	1.81	1.57	0.031	1.83	6.74	6.24	2.28	4.80	3.29	3.49	3.06
(WY)	(1976)	(1977)	(1977)	(1977)	(1977)	(1981)	(1977)	(1977)	(1976)	(1976)	(1976)	(1982)

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04087088 UNDERWOOD CREEK AT WAUWATOSA, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	4,666.6		2,811.7		15.0	
ANNUAL MEAN	12.8		7.70		23.2	
HIGHEST ANNUAL MEAN					4.21	
LOWEST ANNUAL MEAN					1993	
HIGHEST DAILY MEAN	261	Aug 13	98	May 9	1,420	Aug 6, 1998
LOWEST DAILY MEAN	2.9	Dec 16,26	2.1	Aug 30	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	(a)3.1	Dec 11	(b)2.2	Jan 18	0.00	Jan 11, 1977
MAXIMUM PEAK FLOW			531	Aug 3	(c)7,500	Aug 6, 1998
MAXIMUM PEAK STAGE			5.13	Aug 3	13.10	Aug 6, 1998
ANNUAL RUNOFF (CFSM)	0.70		0.42		0.82	
ANNUAL RUNOFF (INCHES)	9.54		5.75		11.17	
10 PERCENT EXCEEDS	26		16		31	
50 PERCENT EXCEEDS	6.1		4.5		7.0	
90 PERCENT EXCEEDS	3.5		2.3		3.2	

(a) No flow on all or part of many days during 1977 winter period

(b) Ice affected

(c) From rating curve extended above 96 ft<sup>3</sup>/s based on slope-area measurement of peak flow

(e) Estimated due to ice effect or missing record

## 04087120 MENOMONEE RIVER AT WAUWATOSA, WI

LOCATION.--Lat 43°02'44", long 87°59'59", in NE ¼ NW ¼ sec.27, T.7 N., R.21 E., Milwaukee County, Hydrologic Unit 04040003, on left bank near upstream side of 70th Street bridge in Wauwatosa, 800 ft downstream from Honey Creek, and at mile 6.2.

DRAINAGE AREA.--123 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 628.86 ft above NGVD of 1929. Prior to Nov. 1, 1974, nonrecording gage at present site and datum then in use. Prior to June 21, 1997 at 0320, datum was 2.00 ft higher.

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	20	e18	19	e17	e12	43	690	93	20	122	5.6
2	235	20	18	19	e24	e11	38	275	61	18	92	5.8
3	132	21	e17	18	e30	e10	35	149	53	17	222	5.8
4	194	20	e16	e18	e27	e10	144	120	46	35	50	5.8
5	121	23	e15	19	e24	e10	126	503	40	100	29	5.5
6	68	22	e15	19	e19	e10	83	237	37	112	95	5.8
7	47	20	e16	19	e14	e12	74	280	36	209	52	5.8
8	36	19	e16	19	e12	e11	90	276	410	97	37	6.4
9	31	19	e17	e19	e10	e11	118	783	199	47	26	5.9
10	27	22	e19	e18	e9.0	e10	142	448	98	39	20	6.5
11	25	37	17	e15	e8.0	e12	134	585	110	35	17	7.0
12	24	28	16	e13	e7.6	e17	97	554	91	25	25	37
13	23	22	16	e12	e7.2	e30	73	348	69	19	15	76
14	20	21	17	e11	e7.0	e60	62	234	55	17	14	162
15	19	20	17	e10	e6.5	e150	56	196	44	107	13	41
16	18	19	16	e9.4	e6.4	e140	51	138	37	27	13	16
17	19	18	16	e8.7	e6.3	89	47	108	33	18	12	11
18	47	27	141	e7.8	e7.0	62	42	90	31	16	12	9.7
19	40	48	71	e7.5	e10	89	166	79	29	14	9.6	9.3
20	25	26	43	e7.2	e11	89	110	205	25	12	11	7.4
21	22	58	32	e7.0	e12	64	78	96	25	18	9.4	6.7
22	20	35	e23	e6.8	e10	53	61	72	23	15	7.9	87
23	19	25	e20	e6.5	e8.0	44	50	62	21	14	7.5	22
24	57	23	e18	e6.3	e7.4	41	44	55	21	12	6.8	10
25	148	21	e17	e6.1	e7.2	39	40	49	33	12	12	7.9
26	63	19	e16	e6.0	e7.0	36	36	45	45	12	12	19
27	39	20	e17	e5.8	e8.8	36	33	40	57	11	8.4	19
28	33	17	18	e5.8	e11	92	32	44	81	10	7.8	12
29	27	19	18	e5.7	---	65	30	46	39	10	7.0	8.6
30	24	17	19	e6.0	---	44	149	96	22	18	6.5	8.3
31	22	---	19	e9.0	---	39	---	283	---	40	5.9	---
TOTAL	1,665	726	754	359.6	334.4	1,398	2,284	7,186	1,964	1,156	977.8	635.8
MEAN	53.7	24.2	24.3	11.6	11.9	45.1	76.1	232	65.5	37.3	31.5	21.2
MAX	235	58	141	19	30	150	166	783	410	209	222	162
MIN	18	17	15	5.7	6.3	10	30	40	21	10	5.9	5.5
CFSM	0.44	0.20	0.20	0.09	0.10	0.37	0.62	1.88	0.53	0.30	0.26	0.17
IN.	0.50	0.22	0.23	0.11	0.10	0.42	0.69	2.17	0.59	0.35	0.30	0.19

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)
1962	64.4	232	(1964)	7.15	(1964)	77.6	422	(1963)	11.9	(1963)	74.6	222	(1964)	4.65	(1964)
1963	57.5	191	(1963)	4.45	(1963)	98.6	277	(1963)	4.18	(1963)	57.5	191	(1963)	4.45	(1963)
1964	196	582	(1968)	17.5	(1968)	196	582	(1968)	17.5	(1968)	205	715	(1963)	28.7	(1963)
1965	205	582	(1963)	28.7	(1963)	119	419	(1977)	17.1	(1977)	114	566	(1962)	12.6	(1962)
1966	119	419	(1963)	12.6	(1963)	114	566	(1962)	10.6	(1962)	77.4	278	(1963)	10.5	(1963)
1967	114	566	(1963)	10.6	(1963)	77.4	278	(1963)	10.5	(1963)	76.8	562	(1962)	6.50	(1962)
1968	77.4	278	(1963)	6.50	(1963)	76.8	562	(1962)	6.50	(1962)	82.7	562	(1963)	6.50	(1963)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1962 - 2003
ANNUAL TOTAL	34,542	19,440.6	
ANNUAL MEAN	94.6	53.3	103
HIGHEST ANNUAL MEAN			195
LOWEST ANNUAL MEAN			24.0
HIGHEST DAILY MEAN	1,170	(a)Jun 4	7,520
LOWEST DAILY MEAN	12	Aug 11	5.5
ANNUAL SEVEN-DAY MINIMUM	15	Aug 5	5.7
MAXIMUM PEAK FLOW			1,780
MAXIMUM PEAK STAGE			6.95
ANNUAL RUNOFF (CFSM)	0.77		0.43
ANNUAL RUNOFF (INCHES)	10.45		5.88
10 PERCENT EXCEEDS	204		121
50 PERCENT EXCEEDS	44		22
90 PERCENT EXCEEDS	18		7.4

(a) Also occurred Aug. 13

(b) Ice affected

(c) From rating curve extended above 6,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow, gage height, 13.92 ft, datum then in use

(d) Also occurred June 21, 1997, discharge determined from rating curve extended above 9,430 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow

(e) Estimated due to ice effect or missing record

(f) High-water mark on gage-house door was 18.87 ft

STREAMS TRIBUTARY TO LAKE MICHIGAN

040871473 WILSON PARK CREEK AT GMIA INFALL AT MILWAUKEE, WI

LOCATION.--Lat 42°56'42"(revised), long 87°53'10", in SW ¼ SW ¼ sec.27, T.6 N., R.22 E., Milwaukee County, Hydrologic Unit 04040003, 150 ft northwest of Grange Avenue gate on General Mitchell International Airport property, at Milwaukee.

DRAINAGE AREA.--0.89 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1996 to May 1997, November 1997 to current year.

REVISED RECORDS.--WDR WI-98-1: 1997 (M, February monthly).

GAGE.--Water-stage recorder. Elevation of gage is 665 ft above NGVD of 1929, from topographic map.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.02	0.00	0.00	e0.50	0.00	0.06	5.6	0.06	0.00	0.01	0.00
2	1.1	0.01	0.00	0.00	e0.30	0.00	0.00	0.28	0.06	0.00	0.00	0.00
3	0.27	0.00	0.00	e0.00	e0.35	e0.00	0.00	0.09	0.08	0.00	0.68	0.00
4	1.2	0.00	0.00	0.00	e0.10	0.00	2.9	0.94	0.04	0.01	0.10	0.00
5	0.09	0.07	0.00	e0.00	e0.00	0.00	0.67	6.2	0.04	0.56	0.02	0.00
6	0.04	0.03	0.00	e0.02	0.00	0.00	0.17	0.52	0.08	2.9	0.00	0.00
7	0.04	0.00	0.00	e0.02	0.00	0.00	0.32	3.9	0.07	1.6	0.00	0.00
8	0.03	0.00	0.00	e0.03	e0.00	0.00	0.61	0.92	4.0	1.5	0.00	0.00
9	0.02	0.00	0.00	e0.02	e0.00	0.00	0.70	7.8	0.30	0.22	0.00	0.00
10	0.06	0.08	0.00	e0.00	e0.00	0.00	0.47	0.67	0.13	0.11	0.00	0.00
11	0.06	0.59	0.00	0.00	e0.00	0.00	0.29	1.4	0.09	0.25	0.00	0.00
12	0.04	0.03	0.00	0.00	0.00	e0.10	0.11	0.59	0.07	0.06	0.00	0.49
13	0.02	0.02	0.02	0.00	0.00	e0.20	0.06	0.30	0.06	0.02	0.00	0.29
14	0.00	0.00	0.03	0.00	0.00	e0.40	0.06	0.73	0.06	0.01	0.00	1.2
15	0.00	0.01	0.03	0.00	0.00	e2.0	0.05	0.76	0.05	1.5	0.00	0.03
16	0.02	0.00	0.03	0.00	0.00	1.4	0.03	0.20	0.04	0.05	0.00	0.03
17	0.05	0.03	0.03	e0.00	0.00	0.42	0.03	0.14	0.05	0.03	0.00	0.00
18	0.43	0.25	2.0	e0.00	0.00	0.12	0.01	0.12	0.05	0.02	0.00	0.00
19	0.04	0.35	0.33	e0.00	0.00	1.6	2.1	0.38	0.04	0.01	0.00	0.00
20	0.02	0.04	0.08	0.00	0.01	0.78	0.48	0.49	0.02	0.00	0.00	0.00
21	0.01	1.2	0.04	0.00	0.04	0.26	0.07	0.10	0.01	0.12	0.00	0.00
22	0.01	0.09	0.03	0.00	0.02	0.05	0.04	0.11	0.03	0.02	0.00	0.76
23	0.00	0.03	0.02	0.00	0.00	0.07	0.06	0.10	0.02	0.00	0.00	0.08
24	0.13	0.03	0.00	0.00	0.00	0.06	0.03	0.09	0.02	0.00	0.00	0.00
25	1.4	0.02	0.00	0.00	e0.00	0.01	0.03	0.08	0.03	0.01	0.08	0.00
26	0.14	0.00	e0.00	e0.00	0.00	0.00	0.02	0.07	0.04	0.00	0.01	0.39
27	0.03	0.02	e0.00	e0.00	0.00	0.00	0.03	0.06	0.58	0.00	0.00	0.11
28	0.00	0.03	e0.00	0.00	0.00	0.82	0.03	0.27	0.89	0.00	0.00	0.00
29	0.00	0.04	e0.01	0.00	---	0.05	0.01	0.10	0.07	0.00	0.00	0.00
30	0.00	0.01	e0.02	0.00	---	0.01	1.7	1.2	0.01	0.00	0.00	0.00
31	0.10	---	e0.01	e0.40	---	0.05	---	0.88	---	0.00	0.00	---
TOTAL	5.35	3.00	2.68	0.49	1.32	8.40	11.14	35.09	7.09	9.00	0.90	3.38
MEAN	0.17	0.10	0.086	0.016	0.047	0.27	0.37	1.13	0.24	0.29	0.029	0.11
MAX	1.4	1.2	2.0	0.40	0.50	2.0	2.9	7.8	4.0	2.9	0.68	1.2
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.00	0.00	0.00
CFSM	0.19	0.11	0.10	0.02	0.05	0.30	0.42	1.27	0.27	0.33	0.03	0.13
IN.	0.22	0.13	0.11	0.02	0.06	0.35	0.47	1.47	0.30	0.38	0.04	0.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
	0.46	1.41	(2002)	0.17	(2003)
	0.31	0.72	(1999)	0.094	(2000)
	0.20	0.50	(2002)	0.078	(2001)
	0.38	1.08	(1999)	0.016	(2003)
	0.95	2.47	(2001)	0.047	(2003)
	0.67	1.48	(1998)	0.27	(2003)
	1.39	2.56	(1999)	0.37	(2003)
	1.33	3.09	(2000)	0.63	(1998)
	1.11	1.88	(1999)	0.24	(2003)
	0.76	2.06	(2000)	0.17	(1998)
	0.76	1.43	(2000)	0.029	(2003)
	0.73	1.91	(2000)	0.11	(2003)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1997 - 2003
ANNUAL TOTAL	245.41	87.84	
ANNUAL MEAN	0.67	0.24	0.77
HIGHEST ANNUAL MEAN			1.04
LOWEST ANNUAL MEAN			0.24
HIGHEST DAILY MEAN	8.9	Apr 8	7.8
LOWEST DAILY MEAN	0.00	Many days	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Many periods	0.00
MAXIMUM PEAK FLOW		24	34
MAXIMUM PEAK STAGE		12.56	16.97
INSTANTANEOUS LOW FLOW		0.00	0.00
ANNUAL RUNOFF (CFSM)	0.76	0.27	0.86
ANNUAL RUNOFF (INCHES)	10.26	3.67	11.73
10 PERCENT EXCEEDS	1.3	0.63	1.4
50 PERCENT EXCEEDS	0.45	0.02	0.22
90 PERCENT EXCEEDS	0.00	0.00	0.00

(e) Estimated due to ice effect or missing record



040871473 WILSON PARK CREEK AT GMIA INFALL AT MILWAUKEE, WI—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1996 to May 1997, November 1997 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1996 to May 1997, November 1997 to current year.

INSTRUMENTATION.--Stage-activated water-quality sampler since November 1996. Continuous water-temperature recorder since November 1996.

REMARKS.--Chemical analyses are by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated. Records represent water temperature at sensor within 0.5°C.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 31.5°C, July 4, 2003; minimum observed, 0.0°C, many days during winter.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 31.5°C, July 4; minimum observed, 0.0°C, many days during winter.

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	19.5	17.0	18.0	6.5	5.0	6.0	1.5	1.0	1.5	0.5	0.0	0.5
2	19.0	16.5	18.0	7.0	4.5	5.5	1.5	0.5	1.0	0.5	0.0	0.0
3	16.5	15.5	16.0	6.5	4.5	5.5	1.5	0.5	1.0	0.5	0.0	0.5
4	17.5	15.5	16.5	7.0	5.0	6.0	1.0	0.5	1.0	0.5	0.0	0.0
5	16.5	14.0	15.0	6.0	5.0	5.5	1.0	0.5	0.5	0.5	0.0	0.0
6	15.5	13.5	14.5	6.5	5.0	6.0	1.0	0.0	0.5	0.5	0.0	0.0
7	14.0	11.5	13.0	7.5	5.0	6.5	0.5	0.0	0.5	0.5	0.0	0.0
8	14.5	12.0	13.0	8.5	6.0	7.5	0.5	0.0	0.0	0.5	0.0	0.5
9	15.0	13.0	13.5	10.5	7.5	9.0	0.0	0.0	0.0	0.5	0.0	0.5
10	13.5	11.5	12.5	11.0	9.5	10.5	0.0	0.0	0.0	0.5	0.0	0.0
11	14.5	11.5	13.0	9.5	7.5	8.5	0.0	0.0	0.0	0.0	0.0	0.0
12	14.5	12.5	13.5	7.5	6.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0
13	13.5	11.0	12.0	7.5	5.5	6.5	0.5	0.0	0.0	0.0	0.0	0.0
14	11.0	9.0	10.0	7.5	6.5	7.0	0.5	0.0	0.0	0.0	0.0	0.0
15	11.0	8.5	10.0	6.5	4.5	5.5	0.5	0.0	0.0	0.0	0.0	0.0
16	10.5	8.0	9.0	5.5	4.0	4.5	0.5	0.0	0.5	0.0	0.0	0.0
17	9.0	7.5	8.0	5.0	3.5	4.0	1.0	0.0	0.5	0.0	0.0	0.0
18	9.5	7.5	8.5	4.5	3.5	4.0	2.0	0.5	1.0	0.0	0.0	0.0
19	9.5	8.5	9.0	5.5	3.5	4.5	3.0	2.0	2.5	0.0	0.0	0.0
20	9.5	7.5	8.5	5.5	3.5	4.5	2.5	1.0	2.0	0.0	0.0	0.0
21	9.0	8.0	8.5	5.5	4.0	5.0	1.5	1.0	1.0	0.0	0.0	0.0
22	9.0	8.0	8.5	4.5	3.0	4.0	1.5	0.5	1.0	0.0	0.0	0.0
23	8.5	7.5	8.0	5.0	3.0	4.0	1.5	0.5	1.0	0.0	0.0	0.0
24	8.5	7.5	8.0	4.0	2.5	3.0	1.0	0.0	0.5	0.0	0.0	0.0
25	8.5	8.0	8.5	3.5	2.0	2.5	1.0	0.0	0.5	0.0	0.0	0.0
26	9.5	8.0	8.5	3.0	2.0	2.5	1.0	0.0	0.5	0.0	0.0	0.0
27	8.5	7.0	8.0	3.0	2.0	2.5	0.5	0.0	0.0	0.0	0.0	0.0
28	8.5	7.0	7.5	2.5	1.5	2.0	0.5	0.0	0.0	0.0	0.0	0.0
29	8.0	7.0	7.5	2.5	1.5	2.0	0.5	0.0	0.0	0.0	0.0	0.0
30	8.5	6.5	7.5	2.5	1.5	2.0	0.5	0.0	0.5	0.0	0.0	0.0
31	8.0	6.5	7.0	---	---	---	0.5	0.0	0.5	0.0	0.0	0.0
MONTH	19.5	6.5	10.9	11.0	1.5	5.1	3.0	0.0	0.6	0.5	0.0	0.1

## STREAMS TRIBUTARY TO LAKE MICHIGAN

040871473 WILSON PARK CREEK AT GMIA INFALL AT MILWAUKEE, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	0.0	0.0	0.0	0.0	0.0	0.0	10.0	3.0	6.0	10.0	8.0	9.0
2	0.0	0.0	0.0	0.0	0.0	0.0	7.0	3.5	5.0	11.5	6.0	8.5
3	0.0	0.0	0.0	0.0	0.0	0.0	4.0	2.0	3.0	13.5	6.0	9.5
4	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.0	2.0	11.0	8.0	9.5
5	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	1.5	11.0	8.5	9.5
6	0.0	0.0	0.0	0.0	0.0	0.0	5.0	1.0	2.5	14.5	9.5	11.5
7	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	1.0	12.5	9.0	10.0
8	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.5	13.5	9.0	11.0
9	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.5	2.5	16.5	9.5	12.5
10	0.0	0.0	0.0	0.0	0.0	0.0	8.0	1.5	4.5	15.5	12.0	13.5
11	0.0	0.0	0.0	0.0	0.0	0.0	9.5	3.5	6.0	13.5	10.5	11.5
12	0.0	0.0	0.0	0.0	0.0	0.0	9.0	4.5	6.5	14.0	9.0	11.5
13	0.0	0.0	0.0	0.0	0.0	0.0	11.0	4.0	7.0	17.0	10.0	13.0
14	0.0	0.0	0.0	0.0	0.0	0.0	15.0	7.0	10.5	14.5	11.0	12.0
15	0.0	0.0	0.0	0.0	0.0	0.0	18.0	11.0	14.0	16.0	10.0	12.5
16	0.0	0.0	0.0	0.0	0.0	0.0	13.5	7.0	9.5	17.0	11.5	14.0
17	0.0	0.0	0.0	0.0	0.0	0.0	7.0	5.5	6.0	16.5	12.0	14.0
18	0.0	0.0	0.0	1.0	0.0	0.0	7.0	5.0	6.0	16.5	12.0	14.0
19	0.0	0.0	0.0	1.0	0.0	0.5	10.5	5.0	7.5	15.5	13.0	14.5
20	0.0	0.0	0.0	3.0	0.5	1.5	15.0	9.5	12.0	18.5	14.0	16.0
21	0.0	0.0	0.0	3.5	1.0	2.0	11.0	7.5	9.5	17.5	12.0	14.5
22	0.0	0.0	0.0	4.5	1.0	2.0	13.5	5.5	9.0	18.0	11.5	14.5
23	0.0	0.0	0.0	7.0	1.5	4.0	14.0	6.5	10.0	18.0	12.0	14.5
24	0.0	0.0	0.0	7.5	2.5	5.0	13.5	7.0	10.0	18.0	12.5	15.0
25	0.0	0.0	0.0	8.0	3.5	5.5	12.0	7.0	9.0	19.5	13.0	16.0
26	0.0	0.0	0.0	6.5	2.5	4.0	14.0	5.0	9.0	19.5	14.0	16.5
27	0.0	0.0	0.0	5.5	3.0	4.0	16.0	8.0	11.5	20.5	14.0	17.0
28	0.0	0.0	0.0	5.5	3.0	4.0	17.0	11.5	14.0	18.0	15.5	16.5
29	---	---	---	3.5	1.0	2.0	15.5	10.0	13.0	18.0	13.5	15.5
30	---	---	---	3.5	0.5	2.0	13.0	8.5	10.0	16.5	14.0	15.0
31	---	---	---	5.5	1.0	3.0	---	---	---	15.5	12.0	14.0
MONTH	0.0	0.0	0.0	8.0	0.0	1.3	18.0	0.0	7.3	20.5	6.0	13.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	18.5	10.0	14.0	28.0	18.5	22.5	30.0	19.5	23.5	18.5	17.0	17.5
2	17.5	12.0	14.5	27.5	18.5	22.5	28.5	19.5	23.5	19.5	14.5	17.5
3	17.5	13.0	15.0	28.5	20.5	24.5	25.5	19.5	21.5	19.5	16.5	18.0
4	17.5	12.5	15.0	31.5	22.5	26.5	23.5	19.5	21.0	18.0	15.5	16.5
5	18.5	13.0	15.5	27.0	21.5	24.0	28.0	18.5	22.5	19.0	14.0	17.0
6	16.0	14.0	15.0	25.5	21.0	22.5	27.0	21.0	23.5	23.0	15.5	19.0
7	19.5	13.0	16.0	26.0	20.0	22.5	26.5	19.5	22.5	23.0	18.0	20.5
8	19.0	14.0	16.5	23.0	19.0	21.0	23.5	19.0	21.0	23.5	19.5	21.5
9	22.0	13.5	17.5	23.0	18.0	20.0	24.5	18.0	21.0	23.0	18.0	21.0
10	20.0	15.0	17.0	27.0	19.0	21.5	26.5	17.5	21.5	22.5	18.0	20.5
11	17.5	13.0	15.5	25.0	17.5	20.5	21.0	19.0	20.0	23.5	19.5	22.0
12	21.0	12.5	16.0	29.5	17.0	22.0	23.5	19.0	20.5	22.5	19.0	21.0
13	25.0	14.5	19.0	28.0	18.5	22.5	26.0	19.0	22.0	22.0	20.0	21.0
14	24.5	16.5	19.5	29.0	19.0	23.0	25.5	20.5	23.0	21.0	18.5	20.0
15	25.0	15.0	19.0	27.5	20.0	23.0	26.5	22.0	24.0	21.5	16.5	18.5
16	26.0	15.5	19.5	28.5	18.5	23.0	26.5	22.0	24.0	23.0	15.0	18.5
17	27.5	15.5	20.5	29.0	20.0	23.0	25.5	21.5	23.0	22.5	16.0	19.0
18	26.0	17.5	21.0	28.5	17.5	21.5	24.0	19.5	22.0	23.0	17.5	19.5
19	24.0	14.5	18.0	28.0	16.0	21.5	23.0	19.5	21.5	19.0	14.5	17.0
20	25.0	13.5	18.5	27.0	19.5	23.0	24.0	19.5	22.0	18.5	12.5	15.0
21	25.5	15.0	19.5	25.5	19.5	23.0	26.5	22.0	23.5	19.0	11.5	15.0
22	28.0	16.5	21.0	27.0	18.0	21.0	22.0	18.5	20.0	18.5	15.0	17.0
23	27.5	17.5	22.5	27.5	16.5	20.5	21.0	17.0	19.0	19.5	13.5	16.0
24	29.0	20.0	24.0	26.5	15.5	20.0	21.5	18.0	20.0	20.0	14.0	16.5
25	30.5	21.5	25.5	29.5	17.0	22.0	26.0	21.0	23.0	16.0	11.5	13.5
26	27.0	20.0	23.5	25.0	20.0	22.0	28.5	21.5	24.5	15.0	12.5	13.5
27	26.5	17.5	21.0	29.5	21.0	24.0	25.0	18.5	22.5	16.0	12.0	13.5
28	20.0	17.5	18.5	29.0	19.0	22.5	23.0	18.0	21.0	14.0	11.5	12.5
29	28.0	17.0	21.5	29.5	16.0	21.0	22.0	18.5	21.0	14.5	10.0	12.0
30	26.5	18.5	22.0	25.0	17.0	21.0	19.0	17.0	17.5	12.5	9.0	11.0
31	---	---	---	27.5	19.0	22.5	18.5	16.0	17.5	---	---	---
MONTH	30.5	10.0	18.7	31.5	15.5	22.3	30.0	16.0	21.7	23.5	9.0	17.4

040871473 WILSON PARK CREEK AT GMIA INFALL AT MILWAUKEE, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DISCRETE SAMPLES

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	ANC, wat unfl fixed end pt, lab, mg/L as CaCO3 (00417)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	COD, low level, water, unfltrd mg/L (00335)	1,2-Propane diol, water, unfltrd mg/L (91080)	1,2-Ethane diol, water, unfltrd mg/L (91075)
OCT 2002 21...	1040	0.01	10	--	--	--	--	--	<2.0	20	<18.0	<18.0
MAR 2003 26...	1425	0.01	10	8.1	1,780	235	1.3	0.475	19.0	68	<18.0	<18.0

COMPOSITE SAMPLES

Beginning Date	Beginning Time	Ending date	Ending time	Sampling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	ANC, wat unfl fixed end pt, lab, mg/L as CaCO3 (00417)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	COD, low level, water, unfltrd mg/L (00335)	1,2-Propane diol, water, unfltrd mg/L (91080)
OCT 01-02	2330	20021002	1200	50	7.7	--	--	44	--	--	3.2	35	<18.0
MAR 14-16	1400	20030316	1725	50	7.3	2,640	64	69	3.2	0.900	16.6	84	<18.0
APR 04-05	2305	20030405	0100	50	7.9	1,530	87	--	0.88	0.268	<12.0	37	51.0

Date	1,2-Ethanediol, water, unfltrd mg/L (91075)	Runoff volume thousands of cubic feet (99904)
OCT 01-02	<18.0	84
MAR 14-16	<18.0	570
APR 04-05	<18.0	11

## 040871475 WILSON PARK CREEK AT GMIA OUTFALL #7 AT MILWAUKEE, WI

LOCATION.--Lat 42°57'24", long 87°54'25", in NW ¼ NW ¼ sec.28, T.6 N., R.22 E., Milwaukee County, Hydrologic Unit 04040003, 200 ft upstream of Howell Avenue culverts on General Mitchell International Airport property, at Milwaukee.

DRAINAGE AREA.--2.25 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1996 to May 1997, October 1997 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1996 to May 1997, October 1997 to current year.

DISSOLVED OXYGEN: October 1997 to November 1998 (discontinued).

INSTRUMENTATION.--Stage-activated water-quality sampler since November 1996. Continuous water-temperature recorder since November 1996.

REMARKS.--Chemical analyses are by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated. Records represent water temperature at sensor within 0.5°C.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 27.5°C, Aug. 9, 2001; minimum observed, 0.0°C, Mar. 11, 2003.

DISSOLVED OXYGEN: Maximum observed, 14.1 mg/L, Feb. 27, 1998; minimum observed, 0.0 mg/L, June 27 and July 7, 1998.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 25.0°C, July 6; minimum observed, 0.0°C, Mar. 11.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	18.0	17.5	18.0	10.5	9.0	9.5	5.5	3.5	4.5	5.5	5.0	5.0
2	19.5	17.5	18.5	9.5	8.5	9.0	5.5	4.0	5.5	5.5	4.0	5.0
3	17.5	16.5	17.5	10.0	9.0	9.5	6.0	5.5	6.0	5.0	4.0	4.5
4	19.0	17.5	18.0	9.5	9.0	9.0	6.0	5.5	6.0	5.0	4.5	4.5
5	18.0	17.0	17.0	10.5	9.0	9.5	6.5	5.5	6.0	5.0	4.5	5.0
6	17.0	16.0	17.0	10.5	9.5	10.0	5.5	5.0	5.5	5.5	5.0	5.0
7	16.5	15.5	16.0	10.0	9.5	10.0	6.0	5.5	5.5	5.0	5.0	5.0
8	16.5	16.0	16.5	10.5	10.0	10.5	6.0	4.5	5.5	5.5	4.5	5.0
9	16.5	16.0	16.5	11.0	10.5	10.5	5.0	5.0	5.0	5.5	4.5	5.0
10	16.0	15.5	16.0	12.5	11.0	11.5	5.5	5.0	5.0	5.0	4.0	4.5
11	16.0	16.0	16.0	11.5	9.5	10.5	6.0	5.0	5.5	4.0	3.0	3.5
12	16.5	16.0	16.0	10.5	10.0	10.5	6.0	5.5	6.0	3.5	2.5	3.5
13	16.0	13.5	14.0	11.0	10.0	10.5	6.5	6.0	6.0	3.5	3.0	3.0
14	15.0	14.0	14.5	11.0	9.5	10.5	6.0	6.0	6.0	3.5	3.0	3.0
15	15.0	13.5	14.5	10.0	9.0	9.0	6.5	5.5	6.0	3.5	2.5	3.0
16	13.5	12.5	13.0	9.0	8.0	9.0	6.0	5.5	5.5	3.0	2.5	2.5
17	13.5	11.5	12.5	9.0	7.5	8.5	6.0	5.0	5.5	2.5	1.5	2.5
18	14.0	10.0	13.0	9.5	7.0	9.0	7.0	3.0	5.0	2.5	2.0	2.0
19	13.0	12.5	12.5	9.0	7.5	8.5	6.0	5.5	6.0	2.5	2.0	2.5
20	13.0	12.5	12.5	9.5	9.0	9.0	6.0	6.0	6.0	2.5	2.0	2.0
21	13.0	12.5	12.5	9.5	6.5	8.0	6.0	5.5	6.0	2.5	1.5	2.0
22	13.0	11.0	11.5	8.5	7.5	8.0	6.0	4.5	5.5	2.5	1.5	2.0
23	11.0	10.5	11.0	8.5	8.0	8.5	5.5	4.5	5.0	2.0	1.5	1.5
24	13.0	11.0	12.0	8.5	7.0	7.5	5.5	5.0	5.0	1.5	1.0	1.5
25	13.0	9.5	11.0	7.5	6.5	7.0	5.0	3.5	4.5	1.5	0.5	1.0
26	12.5	12.0	12.0	7.0	6.0	6.5	5.0	4.0	4.5	1.5	0.5	1.0
27	12.0	11.5	12.0	7.0	6.0	6.5	5.5	4.0	5.0	2.0	0.5	1.5
28	12.0	11.5	11.5	7.0	6.5	6.5	5.5	5.0	5.0	2.5	1.5	2.0
29	11.5	11.0	11.5	7.5	7.0	7.0	5.5	5.0	5.5	2.5	1.5	2.0
30	11.5	11.0	11.0	7.0	4.0	5.0	5.5	5.0	5.5	2.5	2.0	2.0
31	11.0	10.0	10.5	---	---	---	5.5	5.0	5.5	2.5	1.5	2.5
MONTH	19.5	9.5	14.1	12.5	4.0	8.8	7.0	3.0	5.5	5.5	0.5	3.1

040871475 WILSON PARK CREEK AT GMIA OUTFALL #7 AT MILWAUKEE, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	2.5	2.0	2.0	3.0	1.5	2.0	5.0	4.0	4.5	9.0	8.0	8.5
2	2.0	1.0	2.0	2.0	1.0	1.5	4.5	4.5	4.5	8.5	7.0	7.5
3	2.0	1.0	1.5	1.5	1.0	1.0	4.5	4.5	4.5	8.0	7.5	7.5
4	2.0	1.0	1.5	1.5	0.5	1.0	4.5	2.0	3.5	9.5	7.5	7.5
5	2.0	1.5	1.5	1.5	1.0	1.5	4.0	2.0	3.0	9.5	8.0	9.0
6	2.0	1.5	1.5	2.0	1.0	1.5	4.0	3.5	3.5	9.5	8.5	9.0
7	1.5	1.0	1.5	2.0	1.5	2.0	4.0	3.0	3.5	9.5	8.5	9.0
8	1.5	1.0	1.5	2.5	0.5	2.0	4.0	3.0	3.5	10.0	8.5	9.0
9	1.5	1.0	1.0	2.0	1.0	1.5	4.5	3.5	4.0	12.0	9.0	10.5
10	1.5	1.0	1.5	1.0	0.5	1.0	5.5	3.5	4.5	11.5	9.5	10.5
11	1.5	1.0	1.0	1.5	0.0	1.0	6.0	4.0	5.0	10.5	9.5	10.0
12	1.5	1.0	1.0	2.5	1.0	2.0	6.0	5.0	5.5	10.0	9.0	9.5
13	1.5	1.0	1.0	2.5	2.0	2.0	5.5	5.0	5.0	10.0	9.0	9.5
14	1.5	0.5	1.0	2.5	1.0	2.0	5.0	5.0	5.0	10.5	9.5	10.0
15	1.5	1.0	1.0	3.0	1.0	2.0	6.0	5.0	5.5	10.5	9.5	10.0
16	1.5	1.0	1.0	4.5	1.0	3.0	6.0	5.5	6.0	10.5	9.5	10.0
17	1.5	1.0	1.0	4.0	2.5	3.5	6.0	5.5	6.0	10.5	10.0	10.0
18	1.5	1.0	1.0	4.0	2.5	3.5	6.0	5.5	6.0	10.0	10.0	10.0
19	1.5	1.0	1.5	3.5	2.5	3.0	10.5	5.5	7.0	12.0	10.0	10.5
20	2.0	0.5	1.5	4.0	2.0	3.0	9.0	7.5	8.0	12.5	11.0	11.5
21	3.0	1.0	2.0	3.5	2.5	3.0	8.0	7.0	7.5	11.5	10.5	11.0
22	2.5	1.5	2.0	3.5	3.0	3.5	7.5	6.5	7.0	11.0	10.5	10.5
23	2.0	1.0	1.5	3.5	3.0	3.5	7.5	6.5	7.0	10.5	10.0	10.5
24	1.5	1.0	1.0	4.0	3.5	3.5	7.5	6.5	7.0	10.5	10.0	10.5
25	1.0	0.5	1.0	4.0	3.5	4.0	7.5	6.5	7.0	10.5	10.0	10.5
26	1.5	1.0	1.0	4.5	4.0	4.0	7.0	6.5	6.5	10.5	10.5	10.5
27	1.5	0.5	1.0	4.5	4.0	4.0	7.5	6.5	7.0	11.0	10.5	10.5
28	2.5	1.0	1.5	6.5	4.0	5.5	7.0	6.5	7.0	11.0	10.5	11.0
29	---	---	---	5.0	4.0	4.5	7.5	7.0	7.0	12.0	11.0	11.5
30	---	---	---	4.5	4.0	4.0	9.0	7.0	8.0	16.0	11.0	12.0
31	---	---	---	4.5	4.0	4.5	---	---	---	15.0	11.5	13.0
MONTH	3.0	0.5	1.3	6.5	0.0	2.7	10.5	2.0	5.6	16.0	7.0	10.0
	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.0	11.5	11.5	15.0	14.5	15.0	17.0	16.5	17.0	18.0	17.5	18.0
2	12.0	11.0	11.5	15.0	14.5	14.5	17.0	16.5	17.0	18.0	17.5	17.5
3	11.5	11.0	11.5	15.0	14.5	14.5	23.0	16.5	18.5	18.0	17.5	18.0
4	11.5	11.0	11.5	15.5	14.5	15.0	19.5	18.0	18.5	18.0	17.0	17.5
5	11.5	11.0	11.5	21.0	15.0	17.5	18.0	17.5	18.0	17.5	17.0	17.5
6	11.5	11.0	11.5	25.0	16.5	19.5	18.0	17.5	17.5	17.5	17.5	17.5
7	11.5	11.5	11.5	21.0	19.0	20.0	18.0	17.0	17.5	18.0	17.5	17.5
8	17.0	11.5	14.0	20.0	18.5	19.5	17.5	17.0	17.5	18.0	17.5	17.5
9	15.0	13.0	13.5	19.0	17.5	18.0	17.5	17.0	17.0	18.0	17.5	18.0
10	13.0	12.5	13.0	18.0	17.5	17.5	17.5	17.0	17.0	18.0	17.5	18.0
11	13.0	12.5	12.5	20.0	17.0	17.5	17.5	17.0	17.0	18.0	17.5	18.0
12	12.5	12.0	12.5	18.5	17.0	17.5	17.5	17.0	17.0	21.5	18.0	19.0
13	12.5	12.0	12.5	17.5	16.5	17.0	17.5	17.5	17.5	21.0	19.5	20.0
14	12.5	12.0	12.5	17.0	16.5	16.5	17.5	17.0	17.5	20.5	19.5	20.0
15	12.5	12.0	12.5	21.0	16.5	18.5	17.5	17.0	17.5	20.0	18.5	19.0
16	12.5	12.0	12.5	18.5	17.5	18.0	17.5	17.0	17.5	19.0	18.5	18.5
17	12.5	12.0	12.5	17.5	17.0	17.5	17.5	17.0	17.5	18.5	18.0	18.5
18	12.5	12.5	12.5	17.5	16.5	17.0	17.5	17.0	17.5	18.5	18.0	18.5
19	13.0	12.5	12.5	17.0	16.5	17.0	17.5	17.5	17.5	18.5	16.5	17.5
20	12.5	12.0	12.5	17.0	16.5	16.5	18.0	17.5	17.5	17.5	16.5	17.0
21	13.0	12.5	12.5	17.5	16.5	17.0	18.0	17.5	17.5	17.0	16.5	17.0
22	13.0	12.5	12.5	17.5	16.5	17.0	18.0	17.5	17.5	18.0	17.0	17.5
23	13.0	12.5	13.0	17.0	16.5	16.5	18.0	17.5	17.5	17.5	17.0	17.5
24	13.0	12.5	13.0	17.0	16.0	16.5	18.0	17.5	17.5	17.5	16.5	17.0
25	13.5	13.0	13.0	16.5	16.0	16.5	23.0	17.5	19.5	16.5	16.0	16.0
26	13.5	13.0	13.5	16.5	16.0	16.5	21.5	19.0	20.0	17.0	16.0	16.5
27	20.5	13.5	14.5	16.5	16.5	16.5	19.0	18.5	19.0	16.5	16.0	16.0
28	18.0	16.0	17.0	17.0	16.5	16.5	19.0	18.5	18.5	16.0	15.0	15.5
29	16.0	15.0	15.5	17.0	16.5	16.5	19.0	18.5	18.5	15.0	15.0	15.0
30	15.0	14.5	15.0	17.0	16.5	16.5	18.5	18.0	18.5	15.0	14.0	14.5
31	---	---	---	17.0	16.5	16.5	18.5	18.0	18.0	---	---	---
MONTH	20.5	11.0	12.8	25.0	14.5	17.0	23.0	16.5	17.8	21.5	14.0	17.5

## STREAMS TRIBUTARY TO LAKE MICHIGAN

040871475 WILSON PARK CREEK AT GMIA OUTFALL #7 AT MILWAUKEE, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

## DISCRETE SAMPLES

Date	Time	Sam- pling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conduc- tance, wat unfl lab, uS/cm 25 degC (90095)	ANC, wat unfl fixed end pt, lab, mg/L as CaCO3 (00417)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	COD, low level, water, unfltrd mg/L (00335)	Oil and grease, water, unfltrd freon extract mg/L (00556)	1,2- Propane -diol, water, unfltrd mg/L (91080)	1,2- Ethane- diol, water, unfltrd mg/L (91075)
OCT 2002												
21...	1130	10	--	--	--	--	--	>25.0	540	--	120	<18.0
FEB 2003												
21...	1530	50	--	--	--	--	--	--	810	--	--	--
MAR												
16...	1400	70	--	--	--	--	--	--	--	2	--	--
26...	1215	10	8.0	2,890	652	9.1	7.89	746	1,700	--	200	<18.0
SEP												
03...	1220	10	9.0	1,250	344	0.99	0.088	3.4	43	--	<18.0	<18.0

040871475 WILSON PARK CREEK AT GMIA OUTFALL #7 AT MILWAUKEE, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

COMPOSITE SAMPLES

Beginning Date	Beginning Time	Ending date	Ending time	Sam-pling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conduc-tance, wat unfl lab, uS/cm 25 degC (90095)	ANC, wat unfl fixed end pt, lab, mg/L as CaCO3 (00417)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	COD, low level, water, unfltrd mg/L (00335)	1,2-Propane -diol, water, unfltrd mg/L (91080)
OCT 02-02	0235	20021002	1050	50	7.8	--	--	31	--	--	3.4	25	<18.0
DEC 02-11	1234	20021211	1045	50	--	--	--	--	--	--	--	1,300	--
DEC 11-19	1932	20,021219	0912	50	--	--	--	--	--	--	--	330	--
DEC 20-27	1323	20021227	0828	50	--	--	--	--	--	--	--	340	--
DEC 27													
2002- JAN 03													
2003 JAN 03-10	1525	20030103	0341	50	--	--	--	--	--	--	--	190	--
JAN 10-17	1149	20030110	0623	50	--	--	--	--	--	--	--	2,900	--
JAN 17-22	1258	20030117	0015	50	--	--	--	--	--	--	--	3,000	--
JAN 25-29	1714	20030122	0732	50	--	--	--	--	--	--	--	620	--
JAN 31-31	1713	20030129	0255	50	--	--	--	--	--	--	--	120	--
JAN 31- FEB 05	0805	20030131	1740	50	--	14,300	--	--	17	6.74	2,900	4,400	2,300
FEB 15-20	2011	20030205	0800	50	--	--	--	--	--	--	--	7,500	--
MAR 01-07	1027	20030220	1811	50	--	--	--	--	--	--	--	1,900	--
MAR 04-08	0349	20030307	0154	50	--	--	--	--	--	--	--	3,700	--
MAR 07-09	1620	20030308	1155	50	--	--	--	--	7.8	1.50	--	5,600	1,900
MAR 12-14	1600	20030309	0906	50	--	--	--	--	--	--	--	9,600	--
MAR 14-16	1546	20030314	0911	50	--	--	--	--	--	--	--	7,500	--
MAR 14-15	1340	20030316	1910	50	7.4	2,430	351	96	4.8	0.223	738	1,300	410
MAR 16-17	1359	20030315	1331	50	--	--	--	--	--	--	--	2,000	--
MAR 18-21	1408	20030317	1023	50	--	--	--	--	--	--	--	1,000	--
MAR 21-28	2011	20030321	0319	50	--	--	--	--	--	--	--	720	--
MAR 28- APR 04	1252	20030328	1322	50	--	--	--	--	--	--	--	940	--
APR 04-09	1357	20030404	0927	50	--	--	--	--	--	--	--	360	--
APR 04-05	1117	20030409	1623	50	--	--	--	--	--	--	--	1,300	--
APR 11-18	1635	20030405	0155	50	7.5	1,070	178	--	2.3	0.547	552	950	470
APR 19-24	1609	20030418	0002	50	--	--	--	--	--	--	--	620	--
APR 25- MAY 01	0017	20030424	1904	50	--	--	--	--	--	--	--	280	--
	0607	20030501	0159	50	--	--	--	--	--	--	--	120	--

## STREAMS TRIBUTARY TO LAKE MICHIGAN

040871475 WILSON PARK CREEK AT GMIA OUTFALL #7 AT MILWAUKEE, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	1,2- Ethandiol, water, unfltrd mg/L (91075)
OCT 02-02	<18.0
DEC 02-11	--
DEC 11-19	--
DEC 20-27	--
DEC 27 2002- JAN 03 2003	--
JAN 03-10	--
JAN 10-17	--
JAN 17-22	--
JAN 25-29	--
JAN 31-31	<18.0
JAN 31- FEB 05	--
FEB 15-20	--
MAR 01-07	--
MAR 04-08	48.0
MAR 07-09	--
MAR 12-14	--
MAR 14-16	32.0
MAR 14-15	--
MAR 16-17	--
MAR 18-21	--
MAR 21-28	--
MAR 28- APR 04	--
APR 04-09	--
APR 04-05	<18.0
APR 11-18	--
APR 19-24	--
APR 25- MAY 01	--



040871476 HOLMES AVENUE CREEK TRIB AT GMIA OUTFALL #1 AT MILWAUKEE, WI

LOCATION.--Lat 42°56'43", long 87°54'38" (revised), in SE 1/4 SE 1/4 sec.29, T.6 N., R.22 E., Milwaukee County, Hydrologic Unit 04040003, 100 ft west of intersection at corner of Air Cargo Way and Howell Avenue, at Milwaukee.

DRAINAGE AREA.--0.03 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1996 through May 1997, November 1997 to current year.

GAGE.--Water-stage recorder in culvert. Elevation of gage is 690 ft above NGVD of 1929, from topographic map.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
2	0.31	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.06	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.14	0.00
4	0.35	0.00	0.00	0.00	0.00	0.01	0.31	0.19	0.00	0.00	0.00	0.00
5	0.01	0.04	0.00	0.00	0.00	0.01	0.04	0.16	0.00	0.07	0.00	0.00
6	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.43	0.01	0.00
7	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.20	0.00	0.12	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.38	0.17	0.00	0.00
9	0.00	0.02	0.00	0.00	0.00	0.01	0.06	0.34	0.00	0.00	0.00	0.00
10	0.00	0.04	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
11	0.00	0.21	0.00	0.00	0.00	0.01	0.00	0.04	0.00	0.00	0.00	0.00
12	0.02	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.12
13	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.04
14	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.01	0.00	0.00	0.00	0.24
15	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.22	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
17	0.04	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
18	0.16	0.13	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.01	0.02	0.00	0.00	0.00	0.16	0.30	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.03	0.03	0.05	0.01	0.00	0.00	0.00	0.00
21	0.00	0.20	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
24	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
26	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.09	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.22	0.07	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.03	---	0.01	---	0.00	---	0.00	0.00	---
TOTAL	1.47	0.67	0.30	0.03	0.19	0.90	1.05	1.32	0.52	1.02	0.17	0.57
MEAN	0.047	0.022	0.010	0.001	0.007	0.029	0.035	0.043	0.017	0.033	0.005	0.019
MAX	0.40	0.21	0.30	0.03	0.12	0.21	0.31	0.34	0.38	0.43	0.14	0.24
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFSM	1.58	0.74	0.32	0.03	0.23	0.97	1.17	1.42	0.58	1.10	0.18	0.63
IN.	1.82	0.83	0.37	0.04	0.24	1.12	1.30	1.64	0.64	1.26	0.21	0.71

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

MEAN	0.036	0.024	0.014	0.027	0.050	0.032	0.068	0.075	0.067	0.062	0.077	0.066
MAX	0.083	0.047	0.041	0.057	0.12	0.061	0.10	0.18	0.12	0.16	0.12	0.16
(WY)	(2002)	(2001)	(1997)	(1999)	(2001)	(1998)	(1999)	(2000)	(1999)	(2000)	(2001)	(2000)
MIN	0.008	0.007	0.001	0.001	0.007	0.004	0.035	0.035	0.017	0.023	0.005	0.019
(WY)	(2000)	(2000)	(2001)	(2003)	(2003)	(1999)	(2003)	(1998)	(2003)	(1998)	(2003)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1997 - 2003

ANNUAL TOTAL	16.28	8.21	
ANNUAL MEAN	0.045	0.022	0.050
HIGHEST ANNUAL MEAN			0.066 2000
LOWEST ANNUAL MEAN			0.022 2003
HIGHEST DAILY MEAN	0.95 Aug 12	0.43 Jul 6	(e)2.9 Jul 2, 2000
LOWEST DAILY MEAN	0.00 Many days	0.00 Many days	0.00 Many days
ANNUAL SEVEN-DAY MINIMUM	0.00 Many periods	0.00 Many periods	0.00 Many periods
MAXIMUM PEAK STAGE		2.31 Jul 6	(e)4.45 Jul 2, 2000
INSTANTANEOUS LOW FLOW		0.00 Many days	0.00 Many days
ANNUAL RUNOFF (CFSM)	1.49	0.75	1.66
ANNUAL RUNOFF (INCHES)	20.19	10.18	22.52
10 PERCENT EXCEEDS	0.14	0.06	0.12
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

(e) Estimated

040871476 HOLMES AVENUE CREEK TRIB AT GMIA OUTFALL #1 AT MILWAUKEE, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1996 to May 1997, November 1997 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1996 to May 1997, November 1997 to August 1999, November 2000 to current year.

INSTRUMENTATION.--Stage-activated water-quality sampler since November 1996. Continuous water-temperature recorder from November 1996 to September 1999.

REMARKS.--Chemical analyses are by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated. Records represent water temperature at sensor within 0.5°C.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 29.5°C, July 20-21, 2001; minimum observed, 0.0°C, many days during winter.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE; Maximum observed, 26.0°C, July 6; minimum observed, 0.0°C, many days during winter.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	19.0	15.5	16.0	12.5	10.5	11.5	10.0	7.5	8.0	8.5	5.5	6.5
2	19.0	13.0	16.5	12.5	10.0	11.0	10.0	0.0	5.0	7.5	3.5	6.0
3	16.0	13.5	15.0	12.5	10.0	11.0	8.0	2.5	5.5	8.0	3.5	6.5
4	19.0	15.5	16.5	12.5	9.0	10.5	9.0	7.0	8.0	8.0	6.0	6.5
5	17.0	15.5	16.0	12.5	7.5	10.0	9.0	7.5	8.0	8.0	0.0	5.5
6	16.5	14.5	15.5	13.0	10.5	11.5	9.5	7.5	8.0	8.5	3.0	6.5
7	15.5	13.0	14.5	12.5	10.0	11.0	10.5	8.5	9.0	9.0	7.0	8.0
8	16.0	14.5	15.0	13.0	11.5	12.0	9.0	6.5	7.5	9.0	7.5	8.0
9	15.0	13.5	14.0	14.0	11.5	12.5	9.0	6.0	7.5	9.5	4.0	7.5
10	15.0	13.5	14.5	13.0	9.5	12.5	10.0	7.5	9.0	8.5	6.5	7.5
11	15.5	14.0	14.5	12.0	4.5	8.5	10.0	7.5	8.5	8.5	7.0	7.5
12	16.0	14.5	15.0	13.0	10.0	11.5	10.0	8.0	9.0	8.0	6.0	7.0
13	15.0	13.0	13.5	12.5	10.5	11.5	10.0	8.5	9.0	8.0	6.0	7.0
14	14.5	12.5	13.5	12.5	8.5	10.5	10.5	8.5	9.5	8.0	6.0	6.5
15	14.5	11.0	13.0	10.5	6.0	8.5	10.5	7.0	9.0	8.0	6.5	7.0
16	12.0	9.5	10.5	7.0	5.0	6.0	9.0	6.0	7.5	7.5	5.0	6.5
17	13.5	8.0	11.5	10.0	6.0	8.0	10.0	8.0	9.0	6.5	4.0	5.0
18	13.0	6.0	10.5	11.5	3.0	8.0	10.0	1.5	5.5	7.5	5.0	6.0
19	13.5	10.5	12.5	10.5	3.5	8.5	9.5	6.5	8.0	7.0	5.5	6.0
20	13.5	10.5	12.0	11.5	10.0	10.5	9.5	8.5	8.5	7.5	5.5	6.0
21	13.5	11.0	12.5	11.0	3.0	7.0	10.0	8.0	9.0	7.0	5.0	6.0
22	13.0	11.0	12.0	10.5	8.0	9.0	10.0	8.0	8.5	7.0	4.5	5.5
23	11.5	8.5	9.5	11.5	9.0	10.0	9.5	8.0	8.5	6.0	4.0	4.5
24	11.5	7.0	10.0	11.0	8.5	9.5	9.0	6.0	7.5	5.5	4.5	4.5
25	12.5	5.5	8.5	10.0	8.5	9.0	8.5	6.0	6.5	6.5	4.5	5.0
26	13.0	9.5	11.0	10.0	7.5	8.5	8.5	6.5	7.0	5.5	3.0	4.0
27	13.5	10.5	11.5	10.5	8.0	9.0	8.0	6.5	7.0	5.5	3.5	4.0
28	12.0	9.5	10.5	10.0	8.0	8.5	9.0	7.5	8.0	5.5	0.0	3.5
29	12.0	8.5	10.0	11.5	9.5	10.5	9.5	7.5	8.0	5.5	0.0	3.0
30	11.0	8.5	9.5	11.0	7.5	8.5	10.0	8.0	8.5	6.5	3.5	5.0
31	12.0	10.0	11.0	---	---	---	10.0	7.5	8.5	6.5	0.5	3.5
MONTH	19.0	5.5	12.8	14.0	3.0	9.8	10.5	0.0	7.9	9.5	0.0	5.9

040871476 HOLMES AVENUE CREEK TRIB AT GMIA OUTFALL #1 AT MILWAUKEE, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	7.5	4.0	5.5	5.5	1.5	3.5	6.5	4.0	5.0	10.0	7.0	8.0
2	7.5	1.5	5.0	5.5	0.0	2.5	6.0	4.0	4.5	8.5	5.5	6.0
3	6.5	0.0	2.5	3.5	0.0	2.5	6.0	4.0	4.5	7.0	5.0	5.5
4	6.0	0.5	4.0	5.0	0.0	2.5	6.0	0.0	1.5	9.5	5.0	6.0
5	6.0	4.0	4.5	5.0	0.0	2.5	5.0	0.0	2.5	10.0	6.5	8.0
6	6.0	3.5	4.5	4.0	0.0	2.0	5.5	3.0	3.5	9.0	6.5	7.0
7	5.5	3.0	4.0	4.5	0.0	2.5	5.0	0.0	2.0	10.0	6.0	7.5
8	5.5	4.0	4.5	5.0	2.5	3.5	3.5	0.0	1.0	9.0	6.5	7.0
9	5.5	3.5	4.0	4.5	1.5	3.0	6.5	0.5	2.5	10.5	6.5	8.0
10	5.5	2.0	3.5	5.5	3.5	4.0	10.5	1.5	5.0	12.0	7.0	8.0
11	5.0	2.5	3.5	5.5	3.5	4.0	6.0	4.0	4.5	12.0	7.0	8.5
12	5.5	0.0	3.0	5.5	3.0	4.0	6.0	3.5	4.5	9.5	7.0	8.0
13	6.5	3.5	5.0	6.0	0.0	2.0	6.0	3.5	4.5	8.5	7.0	7.5
14	6.0	3.0	4.5	4.5	0.0	1.5	6.0	4.0	5.0	13.5	7.0	8.5
15	3.0	0.0	1.0	4.0	0.0	1.5	6.5	4.5	5.0	10.0	7.5	8.0
16	1.5	0.0	0.5	7.5	1.5	4.0	6.5	4.5	5.0	8.5	7.5	7.5
17	2.5	0.0	1.5	6.5	4.0	4.5	6.5	4.0	5.0	9.0	7.0	7.5
18	5.5	2.0	3.0	6.5	2.5	4.5	6.0	4.0	5.0	8.5	7.0	7.5
19	7.0	4.0	5.0	6.0	1.0	3.0	15.0	3.5	7.5	17.5	7.0	9.5
20	7.0	1.0	4.5	8.0	1.5	4.5	12.5	6.5	8.0	15.5	8.5	10.5
21	6.0	2.5	4.0	6.0	3.0	4.0	8.5	6.0	6.5	10.0	7.5	8.0
22	5.0	1.0	2.5	5.5	2.5	3.5	7.5	5.0	6.0	9.5	7.0	7.5
23	2.0	0.0	0.5	6.0	3.0	4.0	7.0	4.5	5.5	9.0	7.0	7.5
24	4.0	0.0	2.0	6.5	3.0	4.5	8.0	4.5	5.5	8.5	7.0	7.5
25	5.0	1.5	3.0	6.5	4.5	5.0	6.5	4.5	5.0	9.0	7.5	7.5
26	3.5	2.0	2.5	6.5	4.0	5.0	6.5	4.0	5.0	9.0	7.5	7.5
27	5.0	2.5	3.5	6.5	4.5	5.0	8.5	4.5	5.5	9.0	7.5	8.0
28	5.5	2.5	3.5	10.5	4.5	6.0	7.0	5.0	5.5	13.5	7.5	8.5
29	---	---	---	6.5	4.5	5.0	7.0	5.0	5.5	11.0	8.0	9.0
30	---	---	---	6.5	4.5	5.0	9.5	4.5	7.0	18.0	8.0	9.5
31	---	---	---	6.5	3.5	5.0	---	---	---	15.0	8.5	10.0
MONTH	7.5	0.0	3.4	10.5	0.0	3.7	15.0	0.0	4.8	18.0	5.0	7.9
	JUNE			JULY			AUGUST			SEPTEMBER		
1	10.0	8.0	8.5	11.5	10.5	11.0	15.5	12.5	13.5	15.5	14.0	14.5
2	8.5	8.0	8.0	12.0	10.5	11.0	14.0	12.5	13.0	15.5	14.0	14.5
3	12.0	8.0	9.0	11.5	10.5	10.5	23.0	12.5	16.0	15.5	14.0	14.5
4	10.0	8.0	8.5	16.5	10.5	12.0	17.0	14.0	15.0	15.0	14.0	14.0
5	10.0	8.0	8.5	22.0	11.0	14.5	15.0	13.5	14.0	15.5	14.0	14.5
6	14.5	8.0	9.5	26.0	12.0	18.0	22.5	13.5	14.5	15.5	14.0	14.5
7	11.0	8.5	9.5	21.5	15.0	17.5	18.5	14.0	15.0	15.5	14.0	14.5
8	19.0	8.5	13.0	21.5	13.5	17.0	16.5	14.0	14.5	15.5	14.5	15.0
9	13.5	9.5	11.0	18.5	13.5	15.0	16.0	14.0	14.5	15.5	14.5	14.5
10	13.0	9.5	10.0	17.5	13.5	14.5	15.0	14.0	14.0	15.5	14.5	15.0
11	12.5	9.0	9.5	19.0	12.5	14.5	15.5	13.5	14.5	15.5	14.5	15.0
12	10.5	9.0	9.5	15.0	12.5	13.5	16.0	14.5	15.0	21.5	14.0	16.5
13	10.5	9.0	9.5	13.5	12.0	12.5	18.0	14.5	15.0	21.5	16.0	18.0
14	10.5	9.0	9.5	13.5	12.0	12.5	18.5	14.0	15.0	20.5	16.0	18.0
15	10.5	9.0	9.5	21.0	12.0	15.5	15.0	14.0	14.5	17.5	15.5	16.0
16	10.5	9.0	9.5	14.5	12.5	13.0	17.0	13.5	14.5	16.5	15.0	15.5
17	9.5	9.0	9.0	13.5	12.5	12.5	15.5	14.0	14.5	16.0	15.0	15.5
18	10.5	9.0	9.5	13.5	12.0	12.5	15.0	13.5	14.0	16.0	15.0	15.0
19	11.0	9.0	9.5	13.5	12.0	12.5	15.0	13.5	14.0	16.0	14.5	15.0
20	10.0	9.0	9.5	13.5	12.0	12.5	15.0	13.5	14.0	16.0	14.0	14.5
21	10.5	9.0	9.5	24.0	12.0	15.0	15.0	14.0	14.0	15.5	14.0	14.5
22	10.5	9.0	9.5	15.0	13.0	13.5	15.5	14.0	14.5	17.0	11.0	15.5
23	10.5	9.0	9.5	14.0	12.5	13.0	21.0	14.0	15.5	16.0	13.5	14.5
24	10.5	9.0	9.5	14.0	12.5	12.5	15.5	14.0	15.0	15.5	14.5	14.5
25	11.5	9.5	10.0	13.5	12.5	13.0	22.5	14.0	16.5	15.0	13.5	14.0
26	11.5	9.5	10.5	13.5	12.5	13.0	17.0	14.5	15.5	16.5	12.5	14.5
27	23.0	9.5	12.0	14.0	12.0	13.0	15.5	14.5	15.0	15.5	14.0	14.5
28	18.5	12.0	14.5	14.0	12.5	13.0	15.5	14.5	14.5	15.0	12.0	13.5
29	13.5	11.0	12.0	14.0	12.5	13.0	16.0	14.0	15.0	15.5	10.5	14.0
30	12.0	10.5	11.0	14.0	12.5	13.0	15.5	14.0	14.5	15.0	13.0	13.5
31	---	---	---	14.0	12.5	13.0	15.5	14.0	14.5	---	---	---
MONTH	23.0	8.0	9.9	26.0	10.5	13.5	23.0	12.5	14.6	21.5	10.5	14.9

## STREAMS TRIBUTARY TO LAKE MICHIGAN

040871476 HOLMES AVENUE CREEK TRIB AT GMIA OUTFALL #1 AT MILWAUKEE, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

## DISCRETE SAMPLES

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Oil and grease, water, unfltrd freon extract mg/L (00556)
MAR 2003 15...	2015	0.08	70	2

## COMPOSITE SAMPLES

Beginning Date	Beginning Time	Ending date	Ending time	Sam-pling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conduc-tance, wat unfltrd lab, uS/cm 25 degC (90095)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (00417)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	COD, low level, water, unfltrd mg/L (00335)	1,2-Propane -diol, water, unfltrd mg/L (91080)
OCT 02-02	0128	20021002	0656	50	7.8	--	--	27	--	--	<2.0	21	<18.0
JAN 31-31	0754	20030131	1734	50	7.7	27,800	5,410	--	6.0	1.24	12,800	20,000	5,700
MAR 04-07	1626	20030307	1842	50	--	--	--	--	<0.14	0.196	--	20,000	7,300
MAR 14-16	1320	20030316	1207	50	7.6	2,100	630	42	5.0	0.423	>1000	5,800	2,900
APR 04-05	1640	20030405	0133	50	7.4	548	188	--	2.9	0.321	3,140	5,800	2,700

Date	1,2-Ethanediol, water, unfltrd mg/L (91075)	Runoff volume thousand of cubic feet (99904)
OCT 02-02	<18.0	20
JAN 31-31	<18.0	2.3
MAR 04-07	<18.0	5.3
MAR 14-16	<18.0	30
APR 04-05	<18.0	7.8

040871488 WILSON PARK CREEK AT ST. LUKES HOSPITAL AT MILWAUKEE, WI

LOCATION.--Lat 42°59'16", long 87°57'07", in SE 1/4 SE 1/4 sec.12, T.6 N., R.21 E., Milwaukee County, Hydrologic Unit 04040003, on left bank 50 ft upstream from the Kinnickinnic River and 100 ft upstream of Kinnickinnic River Parkway bridge, at Milwaukee.

DRAINAGE AREA.--11.34 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1996 to May 1997, November 1997 to current year.

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	2.3	1.5	1.4	2.6	1.6	4.4	88	6.3	2.2	4.0	1.6
2	27	2.0	1.8	1.4	2.8	1.5	2.9	9.6	4.8	2.1	2.8	1.6
3	9.4	2.0	2.2	1.7	8.8	1.5	2.6	5.7	5.4	2.2	59	1.8
4	37	2.0	2.0	1.5	4.6	2.1	47	15	3.6	4.8	7.2	2.0
5	5.7	3.9	2.2	1.8	1.9	2.3	17	82	2.9	16	3.9	2.0
6	3.6	2.8	1.9	1.9	1.6	2.4	6.7	12	3.4	57	17	1.8
7	3.0	2.1	1.9	1.7	e1.4	3.0	9.4	42	3.5	20	5.6	1.8
8	2.5	2.0	1.6	1.8	1.2	2.4	11	15	56	26	2.7	2.2
9	2.6	1.9	1.4	1.8	1.1	1.9	14	107	7.6	6.4	2.4	2.3
10	2.3	2.4	1.7	1.7	1.1	1.6	12	16	4.7	6.8	2.0	2.6
11	2.3	11	1.9	1.0	1.0	2.3	7.9	34	4.1	6.2	2.9	2.6
12	2.7	2.8	2.1	0.94	e0.94	3.1	5.2	15	4.0	3.2	2.8	24
13	2.4	2.1	2.2	1.0	e0.88	6.2	4.2	7.6	3.6	2.3	3.1	15
14	1.9	1.9	2.0	1.2	e1.0	16	3.9	13	3.1	2.2	2.7	33
15	1.9	1.8	1.7	0.98	e0.94	41	3.7	15	2.9	23	2.6	4.1
16	1.8	1.7	1.7	1.1	e0.90	16	3.4	6.4	2.9	3.0	2.6	2.9
17	2.9	1.9	1.7	0.99	e1.0	8.5	3.0	5.5	2.8	2.6	2.5	2.4
18	11	6.2	33	1.0	e1.2	5.6	2.7	5.0	3.2	2.3	2.3	2.2
19	3.2	8.7	6.5	0.83	2.0	25	36	6.6	3.2	2.0	2.4	2.3
20	2.1	2.7	3.0	0.70	2.0	14	11	12	2.5	2.0	2.5	2.4
21	2.0	19	2.3	0.65	2.6	8.9	5.0	4.5	2.1	5.3	2.5	3.0
22	2.0	3.7	1.9	0.57	2.0	5.5	3.7	4.2	2.0	2.8	2.3	19
23	1.9	2.5	1.8	e0.50	1.7	3.8	3.2	4.1	2.0	1.8	2.3	5.4
24	5.2	2.3	1.9	e0.50	1.5	3.4	3.0	3.9	2.1	1.8	2.0	2.8
25	30	2.1	1.9	e0.90	1.6	3.2	2.7	3.8	2.2	2.7	6.8	2.5
26	4.5	1.9	1.5	e0.82	1.5	3.3	2.4	3.7	2.2	1.9	4.0	10
27	2.4	1.8	1.5	e0.76	1.6	2.6	2.3	4.0	17	1.7	2.7	5.0
28	2.2	1.8	1.5	1.4	1.6	19	2.3	8.1	21	2.0	2.5	3.0
29	1.9	1.7	1.5	2.0	---	4.6	2.3	5.8	3.4	5.8	2.8	2.7
30	1.9	1.7	1.7	1.5	---	2.7	33	25	2.3	2.9	2.0	2.3
31	1.9	---	1.5	2.6	---	3.3	---	29	---	2.1	1.8	---
TOTAL	183.9	102.7	93.0	38.64	53.06	218.3	267.9	608.5	186.8	223.1	164.7	166.3
MEAN	5.93	3.42	3.00	1.25	1.90	7.04	8.93	19.6	6.23	7.20	5.31	5.54
MAX	37	19	33	2.6	8.8	41	47	107	56	57	59	33
MIN	1.8	1.7	1.4	0.50	0.88	1.5	2.3	3.7	2.0	1.7	1.8	1.6
CFSM	0.52	0.30	0.26	0.11	0.17	0.62	0.79	1.73	0.55	0.63	0.47	0.49
IN.	0.60	0.34	0.31	0.13	0.17	0.72	0.88	2.00	0.61	0.73	0.54	0.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

	1997	1998	1999	2000	2001	2002	2003
MEAN	9.60	7.01	4.95	9.00	15.6	11.0	20.9
MAX	20.6	12.2	6.40	21.9	31.7	22.3	39.6
(WY)	(2002)	(1999)	(2002)	(1999)	(2001)	(1998)	(1999)
MIN	5.05	3.42	3.00	1.25	1.90	7.04	8.55
(WY)	(2000)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1997 - 2003
ANNUAL TOTAL	3,690.0	2,306.90	
ANNUAL MEAN	10.1	6.32	13.7
HIGHEST ANNUAL MEAN			17.6
LOWEST ANNUAL MEAN			6.32
HIGHEST DAILY MEAN	170	107	508
LOWEST DAILY MEAN	1.4	0.50	0.50
ANNUAL SEVEN-DAY MINIMUM	1.6	0.66	0.66
MAXIMUM PEAK FLOW		527	3,090
MAXIMUM PEAK STAGE		16.09	20.82
INSTANTANEOUS LOW FLOW		(a)0.43	(a)0.43
ANNUAL RUNOFF (CFSM)	0.89	0.56	1.21
ANNUAL RUNOFF (INCHES)	12.10	7.57	16.42
10 PERCENT EXCEEDS	19	15	27
50 PERCENT EXCEEDS	4.8	2.6	5.2
90 PERCENT EXCEEDS	1.9	1.5	2.2

(a) Result of freezeup

(e) Estimated due to ice effect or missing record

040871488 WILSON PARK CREEK AT ST. LUKES HOSPITAL AT MILWAUKEE, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1996 to April 1997, November 1997 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1996 to April 1997, November 1997 to current year.

DISSOLVED OXYGEN: November, 1996 to April 1997, November 1997 to current year.

SPECIFIC CONDUCTANCE: January 2001 to current year.

INSTRUMENTATION.--Stage-activated water-quality sampler since November 1996. Continuous water-temperature recorder since November 1996.

Dissolved-oxygen recorder since November 1996. Specific conductance recorder since January 2001.

REMARKS.--Chemical analyses are by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated. Dissolved-oxygen concentrations greater than 30 mg/L are out of calibration range of meter. Records represent water temperature at sensor within 0.5°C.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 29.5°C, July 30, 1999; minimum observed, 0.0°C, many days during winter.

DISSOLVED OXYGEN: Maximum observed, 22.7 mg/L, Oct. 14, 2000; minimum observed, 0.0 mg/L, Feb. 24, 1997.

SPECIFIC CONDUCTANCE: Maximum observed, 23,600 microsiemens per centimeter, Mar. 13, 2003; minimum observed, 38 microsiemens per centimeter, Aug. 13, 2002.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 27.5°C, Aug. 21; minimum observed, 0.0°C, many days during winter.

DISSOLVED OXYGEN: Maximum observed, 22.0 mg/L, Nov. 4; minimum observed, 2.4 mg/L, May 30.

SPECIFIC CONDUCTANCE: Maximum observed, 23,600 microsiemens per centimeter, Mar. 13; minimum observed, 77 microsiemens per centimeter, Aug. 3.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	22.0	17.5	19.5	9.0	4.0	6.5	3.0	1.0	1.5	3.0	1.5	2.0
2	---	---	---	9.5	4.5	6.5	3.0	1.0	2.0	3.0	1.5	2.0
3	---	---	---	9.5	4.0	7.0	2.5	0.5	1.0	3.5	1.0	2.0
4	---	---	---	10.0	4.0	7.0	2.0	0.5	1.0	3.0	1.0	2.0
5	21.5	11.0	15.0	---	---	---	2.5	0.5	1.5	4.0	2.0	2.5
6	22.5	12.0	15.0	---	---	---	2.5	0.5	1.0	2.5	1.0	1.5
7	16.0	9.0	12.5	11.0	5.5	8.0	3.5	1.5	2.5	4.5	1.0	2.5
8	16.0	10.5	13.0	12.5	7.5	10.0	2.5	0.5	1.0	6.0	2.5	4.0
9	---	---	---	---	---	---	3.0	1.0	2.0	4.5	1.0	3.5
10	---	---	---	---	---	---	3.5	1.0	2.0	2.5	0.0	1.0
11	---	---	---	---	---	---	3.5	1.0	2.0	2.0	0.0	1.0
12	---	---	---	---	---	---	3.5	1.5	2.5	2.5	0.5	1.5
13	---	---	---	12.5	4.5	8.5	5.0	2.0	3.5	2.5	0.5	1.0
14	13.5	8.5	11.5	9.5	6.0	8.0	4.0	2.5	3.0	2.0	0.0	1.0
15	13.0	8.5	11.0	7.5	5.0	6.5	4.5	2.0	3.5	2.5	0.0	1.0
16	12.5	7.5	10.0	6.5	4.5	5.5	4.0	2.0	2.5	2.5	0.5	1.5
17	---	---	---	7.5	3.5	5.0	4.5	1.5	3.0	2.0	0.0	1.0
18	---	---	---	7.0	3.0	5.0	6.5	2.5	5.0	2.5	0.5	1.0
19	12.0	8.0	10.0	9.5	5.0	6.5	6.5	4.5	5.5	2.0	0.5	1.0
20	12.5	6.5	9.5	8.5	5.5	7.0	5.0	2.5	3.5	2.5	0.5	1.0
21	---	---	---	8.0	5.0	6.0	4.0	1.5	2.5	2.0	0.5	1.0
22	---	---	---	7.0	3.5	5.0	3.0	1.5	2.0	2.0	0.0	1.0
23	---	---	---	7.5	4.0	5.5	2.5	1.0	1.5	1.5	0.0	0.5
24	---	---	---	5.0	3.0	4.5	2.0	1.0	1.5	2.0	0.0	1.0
25	---	---	---	4.5	2.0	3.0	2.5	0.5	1.5	2.0	0.0	1.0
26	---	---	---	4.5	1.5	2.5	3.0	1.0	2.0	1.5	0.0	0.5
27	13.0	5.0	9.0	5.0	2.0	3.0	3.5	1.0	2.0	2.5	0.0	0.5
28	---	---	---	4.0	1.5	2.5	4.5	2.0	3.0	2.0	0.5	1.0
29	---	---	---	6.5	2.5	4.5	4.5	2.0	3.0	1.0	0.0	0.5
30	---	---	---	4.5	0.5	2.5	6.5	3.0	5.0	1.5	0.0	0.5
31	---	---	---	---	---	---	4.5	1.5	3.0	2.0	0.0	0.5
MONTH	22.5	5.0	12.4	12.5	0.5	5.7	6.5	0.5	2.5	6.0	0.0	1.4

040871488 WILSON PARK CREEK AT ST. LUKES HOSPITAL AT MILWAUKEE, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	0.0	0.5	2.0	0.5	1.0	12.0	5.5	8.0	10.5	8.5	9.5
2	2.0	0.0	0.5	1.5	0.0	1.0	10.0	5.5	7.0	12.5	6.5	9.0
3	1.0	0.0	0.0	1.5	0.0	0.5	6.5	4.0	5.0	14.5	7.0	10.5
4	0.5	0.0	0.0	1.5	0.0	0.5	4.5	2.0	3.0	11.5	7.5	10.0
5	1.5	0.0	0.5	1.0	0.0	0.0	5.0	1.0	3.0	11.5	9.0	10.0
6	1.5	0.0	0.5	1.0	0.0	0.0	8.0	1.5	4.0	16.5	9.5	12.5
7	---	---	---	1.0	0.0	0.0	4.5	0.5	2.0	11.5	9.5	10.0
8	2.0	0.0	1.0	1.0	0.0	0.0	4.0	1.0	2.0	14.5	9.0	11.0
9	1.5	0.0	1.0	1.0	0.0	0.0	10.0	0.0	4.5	16.0	9.5	12.5
10	2.0	0.0	1.0	1.5	0.0	0.5	11.5	2.0	6.5	15.5	11.5	13.0
11	2.0	0.0	1.0	1.5	0.0	0.5	12.5	4.5	8.0	12.5	10.5	11.0
12	1.5	0.0	0.5	0.5	0.0	0.0	11.0	5.0	7.5	15.0	9.5	12.0
13	1.5	0.0	0.5	0.5	0.0	0.0	13.0	5.0	8.5	18.0	9.0	13.0
14	1.5	0.0	1.0	1.0	0.0	0.0	16.5	7.5	11.5	13.0	10.5	11.5
15	1.5	0.5	1.0	1.5	0.0	0.5	19.0	11.5	14.5	17.0	10.0	13.0
16	1.5	0.5	1.0	6.0	0.0	2.5	13.0	7.0	10.0	18.0	10.5	13.5
17	2.0	1.0	1.5	9.0	3.0	5.0	7.5	6.0	7.0	17.0	12.0	13.5
18	2.0	0.5	1.5	5.0	3.5	4.5	8.5	6.0	7.0	17.0	11.5	14.0
19	1.5	0.0	1.0	4.0	2.0	3.0	12.5	6.0	9.0	16.0	13.0	14.0
20	1.5	0.0	1.0	5.5	2.0	3.5	15.0	10.5	12.0	18.5	13.5	15.5
21	1.5	0.0	0.5	6.5	3.5	4.5	11.0	7.5	9.5	17.5	10.5	14.0
22	1.5	0.0	0.5	7.5	3.5	5.0	13.5	6.0	9.5	18.0	10.0	14.0
23	1.0	0.0	0.5	11.5	4.0	7.5	14.0	6.5	10.0	17.5	11.0	14.0
24	1.5	0.0	0.5	12.5	6.5	9.0	13.0	6.5	9.5	18.0	11.5	14.5
25	1.0	0.0	0.5	11.5	6.5	9.0	11.5	7.0	9.0	19.0	12.5	15.5
26	1.5	0.5	1.0	10.5	5.5	7.5	14.0	6.0	9.5	19.0	12.5	16.0
27	2.0	0.5	1.0	8.5	5.5	7.0	16.0	7.5	11.5	20.0	13.5	16.5
28	1.5	0.5	1.0	8.5	4.5	6.5	16.5	11.5	13.5	18.0	14.5	15.5
29	---	---	---	5.0	3.0	4.0	15.5	10.0	12.5	18.5	13.5	15.0
30	---	---	---	6.5	1.5	4.0	11.5	9.0	10.0	18.5	13.0	15.0
31	---	---	---	8.5	2.5	5.5	---	---	---	16.0	12.0	14.0
MONTH	2.0	0.0	0.8	12.5	0.0	3.0	19.0	0.0	8.2	20.0	6.5	13.0
	JUNE			JULY			AUGUST			SEPTEMBER		
1	18.5	10.0	14.0	23.5	18.0	20.5	25.0	20.0	22.5	20.5	18.5	19.0
2	17.0	12.0	14.5	23.0	18.5	21.0	24.5	20.0	22.0	22.0	17.0	19.5
3	17.0	13.0	14.5	25.0	19.5	22.0	23.5	19.5	21.0	22.0	18.0	19.5
4	17.5	13.0	14.5	26.5	21.0	23.5	21.5	19.5	20.0	20.5	16.5	18.5
5	18.0	13.5	15.0	26.0	21.5	23.0	25.5	18.5	21.5	21.0	16.5	18.5
6	15.5	13.5	14.5	27.0	20.5	22.5	24.5	20.0	22.0	21.5	17.0	19.0
7	19.0	13.0	16.0	25.5	20.0	22.5	25.0	19.5	22.0	22.5	19.0	20.5
8	17.5	13.5	15.5	22.5	19.5	20.5	22.0	19.5	20.5	23.0	20.0	21.0
9	19.5	13.5	16.5	21.5	18.0	20.0	23.0	18.5	20.5	23.5	19.5	21.5
10	18.0	14.5	16.5	22.5	18.5	20.0	23.5	19.0	21.0	24.0	19.5	21.5
11	16.5	14.0	15.5	22.5	17.0	19.5	21.5	20.0	20.5	23.5	20.0	21.5
12	18.5	13.0	15.5	23.0	17.0	20.0	23.5	20.0	21.5	22.0	18.5	20.5
13	21.5	14.5	17.5	24.0	18.0	20.5	25.0	20.0	22.5	22.0	19.0	20.5
14	21.0	15.5	18.0	24.0	19.0	21.5	25.0	20.5	22.5	21.0	18.5	20.0
15	21.5	15.0	18.0	25.5	20.5	22.5	26.0	21.5	24.0	20.0	16.5	18.0
16	21.0	15.5	18.0	25.0	19.0	22.0	26.5	22.5	24.0	21.5	15.5	18.0
17	22.0	15.0	18.5	25.0	19.5	21.5	25.5	21.5	23.5	21.0	16.5	18.5
18	22.5	16.5	19.0	22.5	17.5	20.0	24.5	21.0	22.5	21.0	17.0	19.0
19	19.0	14.5	16.5	23.5	17.0	20.0	24.5	20.5	22.5	18.5	15.5	17.0
20	21.0	13.5	17.0	23.5	19.0	21.5	26.5	21.0	23.5	18.0	14.0	16.0
21	21.5	15.0	18.0	24.5	20.0	22.0	27.5	22.5	24.5	18.5	14.0	16.0
22	22.5	16.0	19.5	22.5	18.5	20.0	24.5	20.5	22.5	18.5	15.5	17.0
23	23.5	17.5	20.5	22.0	17.5	19.5	23.5	20.0	21.5	18.0	13.5	15.5
24	25.0	19.0	22.0	21.5	17.5	19.5	24.0	20.0	22.0	19.0	14.5	16.0
25	26.0	20.5	23.0	23.5	17.0	20.5	26.0	22.0	23.5	16.0	12.5	14.0
26	22.5	18.5	21.0	22.5	20.0	21.0	27.0	21.5	24.0	16.5	13.0	14.5
27	23.5	17.0	19.5	23.5	21.0	22.5	24.0	20.5	22.5	15.0	12.5	14.0
28	20.0	17.5	18.5	24.0	19.5	21.0	25.0	19.0	22.0	14.0	12.0	13.0
29	23.0	17.5	20.0	23.5	16.5	20.5	24.0	21.0	22.5	15.0	11.0	12.5
30	22.5	18.0	20.0	25.5	18.5	21.0	22.0	19.5	20.5	13.0	10.5	11.5
31	---	---	---	25.0	20.0	22.5	20.0	18.5	19.5	---	---	---
MONTH	26.0	10.0	17.6	27.0	16.5	21.1	27.5	18.5	22.1	24.0	10.5	17.7

040871488 WILSON PARK CREEK AT ST. LUKES HOSPITAL AT MILWAUKEE, WI—Continued

## DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14.6	7.2	10.4	18.6	12.4	14.8	18.0	13.6	15.0	18.8	13.8	15.4
2	12.2	7.3	9.4	18.4	13.1	15.1	17.2	13.5	14.8	18.6	13.5	15.3
3	15.3	8.4	10.6	19.9	12.5	15.2	17.8	12.8	14.6	19.1	13.3	15.6
4	9.6	7.7	8.7	22.0	12.5	15.9	17.7	11.3	13.5	19.9	12.3	15.7
5	14.6	8.8	11.3	17.9	9.4	13.5	16.5	11.7	13.2	17.0	12.0	14.1
6	14.4	6.8	10.4	18.6	9.0	12.6	16.3	11.5	13.7	17.9	10.4	13.4
7	15.0	8.7	11.1	21.2	12.0	15.0	17.8	13.5	14.8	15.8	9.3	11.9
8	13.9	7.1	10.5	21.4	12.1	15.3	18.2	13.0	15.0	14.4	8.5	10.6
9	14.6	7.4	10.4	20.5	10.7	14.4	17.4	12.6	14.4	14.8	8.9	10.9
10	13.0	8.9	10.5	17.0	9.8	12.4	16.9	13.3	14.5	16.8	10.3	13.0
11	14.1	8.3	10.5	12.6	8.7	10.6	---	---	---	16.1	9.2	12.1
12	12.8	5.9	8.8	17.9	9.2	12.6	16.5	12.5	13.7	---	---	---
13	14.9	6.4	10.6	17.8	10.9	13.4	17.2	10.9	13.4	---	---	---
14	15.7	9.2	11.5	16.4	11.0	12.7	17.5	10.9	13.6	17.4	9.6	13.6
15	16.1	9.8	12.0	17.3	11.3	13.4	17.0	11.6	13.4	---	---	---
16	16.4	10.7	12.9	16.7	11.8	13.4	18.3	13.5	15.1	15.7	11.9	13.4
17	17.2	9.2	12.4	17.2	11.0	13.4	18.9	13.2	14.9	16.4	12.3	13.8
18	10.7	8.3	9.3	18.6	9.4	12.9	14.1	9.8	11.5	---	---	---
19	15.1	8.7	11.5	15.0	8.9	10.9	13.8	8.6	10.3	16.1	12.6	14.0
20	15.6	10.0	12.2	15.7	9.3	11.3	14.4	8.4	10.6	---	---	---
21	15.8	9.7	11.6	12.0	8.3	10	15.8	10.1	12.4	---	---	---
22	15.2	9.9	12.2	16.6	9.6	12.1	16.1	11.4	13.0	---	---	---
23	16.0	10.9	12.8	15.9	10.8	12.4	---	---	---	---	---	---
24	13.1	8.9	10.6	16.3	11.0	13.0	---	---	---	14.8	11.6	13.2
25	10.9	9.2	10.1	18.5	12.4	14.5	---	---	---	13.3	11.5	12.1
26	15.7	9.2	11.3	17.2	12.7	14.5	---	---	---	13.4	11.6	12.4
27	16.5	9.7	12.4	16.8	12.6	14.2	18.2	12.8	15.0	12.9	11.4	12.2
28	17.5	10.3	12.9	18.0	13.0	14.6	17.8	12.6	14.4	12.8	11.5	12.1
29	17.5	10.6	13.1	16.7	11.3	13.4	17.9	12.5	14.4	12.7	11.2	12.0
30	17.7	11.1	13.5	17.6	11.9	14.7	15.4	11.6	12.7	12.2	11.2	11.7
31	18.9	11.3	14.2	---	---	---	18.3	12.0	14.7	11.5	9.8	10.7
MONTH	18.9	5.9	11.3	22.0	8.3	13.4	18.9	8.4	13.7	19.9	8.5	13.0
	FEBRUARY			MARCH			APRIL			MAY		
1	10.5	8.7	9.4	15.7	13.6	14.6	---	---	---	---	---	---
2	9.8	8.4	9.0	15.7	12.4	13.9	---	---	---	11.6	8.4	9.9
3	10.2	8.5	9.5	14.4	11.8	13.1	---	---	---	11.1	8.3	9.7
4	10.0	8.6	9.4	13.5	10.4	12.2	---	---	---	---	---	---
5	10.7	9.0	9.8	12.0	9.4	10.9	13.3	9.8	11.0	---	---	---
6	---	---	---	10.8	9.3	10.0	12.8	7.6	9.8	---	---	---
7	---	---	---	14.6	8.5	9.8	11.6	7.8	10.0	---	---	---
8	13.2	11.3	12.1	12.2	7.7	9.4	10.5	7.8	9.4	---	---	---
9	14.5	12.4	13.2	11.2	8.2	9.8	---	---	---	13.3	8.9	11.5
10	14.6	12.8	13.7	11.3	7.2	10.4	---	---	---	13.4	6.0	10.6
11	14.9	13.0	13.8	11.6	7.2	10.2	---	---	---	13.1	5.9	9.9
12	15.5	12.7	14.0	11.5	9.1	9.9	9.5	4.8	7.7	13.4	9.9	11.6
13	15.4	13.3	14.1	12.6	8.5	10.8	8.6	5.5	7.1	14.1	9.5	11.5
14	14.3	13.2	13.8	11.9	7.8	10.0	14.1	5.8	8.4	14.0	3.5	9.6
15	15.5	13.9	14.8	11.2	9.3	10.2	12.5	9.1	10.8	12.1	7.2	10.4
16	16.1	14.6	15.3	---	---	---	11.0	9.2	10.2	13.9	10.2	12.0
17	16.2	14.6	15.3	---	---	---	11.1	8.5	10.2	---	---	---
18	16.2	13.6	15.2	---	---	---	10.6	9.0	9.9	---	---	---
19	17.7	15.0	15.9	---	---	---	---	---	---	15.0	8.1	11.4
20	16.6	12.6	15.3	---	---	---	---	---	---	15.2	6.0	10.4
21	12.6	10.1	11.5	---	---	---	---	---	---	17.8	6.5	12.3
22	13.6	10.1	12.3	---	---	---	---	---	---	17.2	7.5	12.1
23	14.0	11.9	12.7	7.7	4.5	6.0	---	---	---	16.9	7.2	11.8
24	13.8	12.9	13.4	6.1	3.6	4.8	---	---	---	15.4	7.3	11.2
25	15.6	12.2	13.5	5.7	3.5	4.2	---	---	---	14.3	7.2	10.5
26	16.2	13.4	14.6	---	---	---	---	---	---	13.1	7.0	9.8
27	16.8	14.4	15.2	---	---	---	---	---	---	12.6	6.3	9.3
28	16.8	14.4	15.4	---	---	---	---	---	---	12.3	4.5	8.3
29	---	---	---	---	---	---	9.5	6.0	8.0	10.6	4.2	6.5
30	---	---	---	10.3	8.0	9.2	---	---	---	12.6	2.4	8.0
31	---	---	---	---	---	---	---	---	---	9.8	4.5	7.2
MONTH	17.7	8.4	13.2	15.7	3.5	10.0	14.1	4.8	9.4	17.8	2.4	10.2



040871488 WILSON PARK CREEK AT ST. LUKES HOSPITAL AT MILWAUKEE, WI—Continued

## DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.4	6.8	9.6	9.6	6.8	8.3	9.9	5.8	7.8	10.8	8.0	9.1
2	---	---	---	9.9	6.8	8.5	11.1	5.8	8.2	10.9	7.8	9.1
3	15.7	5.7	9.8	10.3	6.4	8.1	10.7	6.7	8.0	10.9	7.9	9.0
4	15.8	5.0	9.9	9.3	6.0	7.5	12.0	7.3	9.5	11.2	8.1	9.4
5	13.0	6.6	9.5	8.8	3.8	6.9	14.1	8.1	10	10.8	8.0	9.2
6	11.7	6.0	9.0	8.8	4.5	6.4	---	---	---	---	---	---
7	8.7	5.4	6.5	7.8	5.1	6.7	---	---	---	10.5	7.3	8.5
8	7.7	4.9	6.2	8.7	6.2	7.4	11.7	6.6	8.5	9.6	7.3	8.3
9	10.7	5.7	8.3	10.8	7.1	8.9	13.0	7.0	8.9	9.7	7.5	8.3
10	12.2	6.3	8.7	10.4	6.9	8.2	10.3	7.0	8.4	9.9	7.3	8.3
11	15.2	6.1	10.2	10.8	6.2	8.4	11.1	7.0	8.7	9.6	7.3	8.2
12	16.5	6.6	10.8	10.7	6.5	8.4	10.6	7.4	8.7	10.3	5.3	8.1
13	8.6	5.2	7.4	10.7	7.2	9.0	10.9	7.2	8.8	8.5	6.2	7.3
14	8.4	7.3	7.9	10.6	7.3	8.8	10.9	7.0	8.8	8.4	6.7	7.4
15	8.4	6.8	7.7	10.2	6.4	8.2	11.1	6.9	8.6	11.9	7.5	9.4
16	8.4	7.2	7.8	11.6	7.1	9.4	10.2	6.9	8.4	11.8	8.2	9.5
17	8.9	7.2	8.2	11.6	7.4	9.5	10.8	7.4	8.8	11.1	8.0	9.3
18	9.7	7.1	8.3	12.3	8.2	10.0	11.0	7.5	8.9	10.6	8.0	9.1
19	10.9	7.2	9.1	11.8	7.9	9.7	11.5	7.6	9.3	11.6	8.0	9.7
20	---	---	---	11.1	7.6	9.2	12.3	7.1	9.2	11.6	8.9	10.0
21	---	---	---	12.4	6.5	8.7	11.4	7.1	8.7	11.5	8.7	9.9
22	---	---	---	12.2	6.8	9.5	11.5	7.1	9.0	11.5	7.5	9.0
23	---	---	---	11.5	8.2	9.7	11.6	7.0	9.1	12.8	7.5	10.0
24	---	---	---	11.3	8.3	9.9	11.6	7.2	9.0	11.7	8.7	9.9
25	---	---	---	13.5	7.9	10.2	9.9	3.3	6.9	12.2	9.0	10.5
26	7.8	5.3	6.8	11.9	7.8	9.4	9.9	3.4	6.7	14.6	7.2	9.6
27	8.4	5.2	7.4	11.3	7.5	9.3	10.8	5.6	8.1	13.3	7.2	10.2
28	8.3	4.8	6.4	12.8	8.2	10.1	11.1	6.7	8.5	13.2	9.3	10.7
29	8.6	6.4	7.6	10.5	7.4	9.1	---	---	---	13.7	9.2	11.0
30	9.1	6.8	7.9	10.8	6.3	8.9	---	---	---	13.6	8.9	11.4
31	---	---	---	10.2	6.7	8.3	11.0	7.7	9.0	---	---	---
MONTH	16.5	4.8	8.3	13.5	3.8	8.7	14.1	3.3	8.6	14.6	5.3	9.3

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	957	773	887	1,160	743	1,020	1,200	1,000	1,110	1,430	1,230	1,320
2	1,010	169	450	1,150	892	1,050	13,600	1,120	3,400	1,530	1,250	1,360
3	793	341	581	1,160	828	1,010	12,300	2,460	8,120	4,720	1,480	2,630
4	887	123	550	1,100	957	1,040	11,100	5,660	8,520	7,550	1,580	2,210
5	974	601	839	1,080	614	932	5,660	1,810	3,540	7,550	3,060	5,120
6	1,020	868	960	995	663	834	1,980	1,310	1,670	8,350	4,620	6,610
7	961	820	916	1,100	947	1,010	3,070	1,660	1,980	5,530	2,930	4,250
8	1,120	904	983	1,100	993	1,060	2,600	2,040	2,330	3,140	1,830	2,460
9	1,140	978	1,070	1,130	962	1,070	2,450	1,520	1,850	3,290	1,770	2,110
10	1,000	838	924	1,160	943	1,070	1,740	1,300	1,560	2,350	1,130	1,910
11	987	815	926	983	323	577	---	---	---	3,190	1,090	2,060
12	1,000	594	883	975	649	789	1,260	727	1,130	1,720	855	1,190
13	1,010	775	878	1,000	884	958	1,400	991	1,260	1,600	781	1,190
14	---	---	---	1,010	853	969	1,560	859	1,310	2,070	720	1,280
15	1,000	840	928	1,040	916	999	1,480	932	1,280	---	---	---
16	995	829	921	995	851	922	1,510	879	1,190	1,250	694	1,070
17	995	605	883	1,000	834	928	1,660	802	1,150	1,330	635	1,130
18	887	281	502	---	---	---	6,900	952	1,610	---	---	---
19	910	514	721	909	576	762	2,080	1,240	1,720	---	---	---
20	982	880	942	1,000	849	932	2,000	1,600	1,790	---	---	---
21	1,040	917	966	1,060	249	643	1,780	1,410	1,610	---	---	---
22	1,040	900	961	1,040	713	920	1,670	1,420	1,530	---	---	---
23	1,020	884	958	1,070	918	1,020	---	---	---	---	---	---
24	1,020	518	710	1,080	955	1,030	---	---	---	---	---	---
25	708	185	424	1,180	890	1,060	---	---	---	---	---	---
26	903	613	780	1,380	1,000	1,140	---	---	---	---	---	---
27	1,090	872	1,000	1,100	929	1,010	1,470	1,170	1,350	---	---	---
28	1,180	962	1,080	1,150	791	1,010	1,380	1,210	1,310	---	---	---
29	1,180	967	1,060	1,230	947	1,140	1,340	1,110	1,250	---	---	---
30	1,150	1,010	1,080	1,250	662	1,090	1,320	1,200	1,260	---	---	---
31	1,180	991	1,100	---	---	---	1,370	1,200	1,270	---	---	---
MONTH	1,180	123	862	1,380	249	965	13,600	727	2,160	8,350	635	2,370

## STREAMS TRIBUTARY TO LAKE MICHIGAN

040871488 WILSON PARK CREEK AT ST. LUKES HOSPITAL AT MILWAUKEE, WI—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	1,630	1,240	1,410	3,000	2,250	2,550	---	---	---
2	---	---	---	4,780	1,280	1,850	3,250	1,500	2,790	1,660	1,260	1,490
3	---	---	---	8,570	1,770	2,600	3,100	2,520	2,850	1,680	1,530	1,620
4	---	---	---	13,500	2,900	8,040	4,150	419	1,320	---	---	---
5	---	---	---	17,600	7,200	12,000	5,990	1,620	4,090	---	---	---
6	---	---	---	14,400	10,300	12,700	2,220	1,120	1,970	---	---	---
7	---	---	---	21,700	6,100	13,700	9,040	2,030	4,990	---	---	---
8	1,550	1,190	1,350	15,700	9,030	12,900	9,680	4,320	7,150	---	---	---
9	1,220	998	1,150	16,600	7,290	10,200	5,580	2,460	3,780	1,520	270	806
10	1,470	1,050	1,190	11,200	7,320	8,670	3,500	2,570	3,050	1,360	1,000	1,260
11	1,220	683	1,140	11,000	5,380	8,100	3,270	2,460	2,960	1,540	524	1,060
12	13,200	1,080	3,390	11,100	7,390	9,110	3,160	2,700	2,990	1,560	740	1,290
13	6,040	1,800	3,080	23,600	8,170	15,300	3,280	2,880	3,100	1,690	1,510	1,600
14	4,890	3,050	3,830	13,900	4,430	8,510	3,340	2,910	3,110	1,720	829	1,410
15	3,970	2,600	3,330	5,720	2,030	3,840	3,450	2,790	3,110	1,580	782	1,170
16	2,670	2,050	2,330	4,650	2,380	3,790	3,260	2,770	3,020	1,810	1,580	1,710
17	2,320	1,900	2,040	5,360	3,270	4,650	3,230	2,820	3,050	1,870	1,750	1,800
18	3,840	1,650	2,260	5,400	3,880	4,600	3,230	2,820	3,010	1,930	1,810	1,860
19	2,820	1,380	2,330	5,380	1,270	3,750	3,100	523	1,530	2,000	1,310	1,850
20	3,700	2,140	2,780	4,200	2,260	3,350	2,420	1,180	1,970	1,510	601	1,120
21	3,790	2,960	3,460	4,320	2,280	3,720	3,320	2,290	2,760	1,770	1,510	1,650
22	3,680	2,410	2,780	4,300	3,710	4,050	3,040	2,360	2,740	1,860	1,600	1,760
23	2,820	1,950	2,390	4,220	3,810	4,100	2,940	2,220	2,540	1,860	1,650	1,770
24	6,090	2,030	3,200	4,140	3,590	3,870	2,870	1,800	2,400	2,030	1,680	1,790
25	3,590	2,000	2,950	3,980	3,170	3,560	2,280	1,500	2,120	2,010	1,660	1,850
26	2,900	2,040	2,430	3,490	1,110	2,730	2,310	2,080	2,170	2,000	1,660	1,810
27	2,140	1,550	1,860	3,490	2,920	3,290	2,340	1,810	2,190	2,370	1,630	1,960
28	2,970	1,490	1,830	3,440	469	2,040	2,270	1,660	2,060	2,370	476	1,700
29	---	---	---	---	---	---	1,970	1,460	1,720	1,780	1,360	1,520
30	---	---	---	3,380	3,000	3,240	---	---	---	1,610	257	1,320
31	---	---	---	3,360	1,970	3,040	---	---	---	1,300	321	850
MONTH	13,200	683	2,430	23,600	469	6,090	9,680	419	2,870	2,370	257	1,520
DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1,520	1,250	1,390	1,440	1,290	1,370	955	531	818	1,150	1,040	1,090
2	1,610	1,340	1,470	1,430	1,260	1,350	1,040	569	882	1,100	980	1,050
3	1,620	1,290	1,490	1,500	1,260	1,350	1,040	77	720	1,130	996	1,060
4	1,550	1,330	1,420	1,340	358	1,140	1,110	741	974	1,080	950	1,000
5	1,830	1,380	1,550	1,330	182	784	1,180	1,030	1,110	1,040	744	908
6	1,830	1,530	1,660	972	171	568	---	---	---	1,150	744	927
7	1,680	1,480	1,570	1,000	386	740	---	---	---	1,240	836	1,130
8	1,580	228	651	1,100	307	773	928	811	879	1,060	693	913
9	1,520	791	1,270	1,310	739	1,070	906	590	793	971	861	919
10	1,650	1,490	1,540	1,210	692	1,050	867	775	827	1,020	839	921
11	1,660	1,440	1,540	1,260	530	1,100	920	640	807	1,020	815	929
12	1,610	1,280	1,480	1,160	862	1,050	919	752	841	891	138	658
13	2,940	1,420	1,880	1,240	1,140	1,180	971	831	910	706	350	519
14	1,760	1,570	1,700	1,250	1,130	1,210	945	791	871	875	85	516
15	1,760	1,590	1,670	1,260	229	694	942	840	891	1,260	604	1,030
16	1,850	1,560	1,700	1,220	1,040	1,150	960	825	874	1,260	852	1,140
17	1,800	1,580	1,690	1,170	994	1,070	982	861	931	1,230	1,120	1,180
18	1,770	1,560	1,640	1,060	885	990	972	856	911	1,170	1,040	1,110
19	1,630	1,460	1,550	1,050	936	984	972	848	905	1,180	994	1,070
20	---	---	---	1,080	958	1,030	990	716	881	1,150	967	1,070
21	---	---	---	1,180	311	894	1,030	892	949	1,150	769	1,070
22	---	---	---	849	743	792	994	780	904	860	174	564
23	---	---	---	1,100	849	972	1,000	750	897	957	587	799
24	---	---	---	1,100	1,020	1,050	1,080	967	1,020	1,070	809	958
25	---	---	---	1,070	713	896	1,240	257	937	1,040	843	924
26	1,340	1,100	1,240	912	780	850	838	548	716	1,130	318	856
27	1,320	248	995	978	889	935	879	693	789	959	394	739
28	832	195	579	1,010	821	947	1,020	773	948	1,150	834	1,020
29	1,320	831	1,130	990	314	703	1,030	680	839	1,170	1,010	1,070
30	1,470	1,270	1,360	870	343	745	1,090	623	822	1,150	977	1,070
31	---	---	---	1,010	583	914	1,080	1,000	1,040	---	---	---
MONTH	2,940	195	1,420	1,500	171	979	1,240	77	886	1,260	85	940

040871488 WILSON PARK CREEK AT ST. LUKES HOSPITAL AT MILWAUKEE, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

## DISCRETE SAMPLES

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (00417)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	COD, low level, water, unfltrd mg/L (00335)	1,2-Propane diol, water, unfltrd mg/L (91080)	1,2-Ethane diol, water, unfltrd mg/L (91075)
OCT 2002 21...	1300	2.0	10	--	--	--	--	--	<2.0	12	19.0	<18.0
MAR 2003 26...	0950	5.3	10	8.0	3,300	275	1.2	0.360	73.4	170	<18.0	<18.0
SEP 03...	1430	2.1	10	8.8	1,060	154	0.38	0.076	<2.0	18	<18.0	<18.0

## COMPOSITE SAMPLES

Beginning Date	Beginning Time	Ending date	Ending time	Sampling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (00417)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	COD, low level, water, unfltrd mg/L (00335)	1,2-Propane diol, water, unfltrd mg/L (91080)
OCT 02-02	0120	20021002	1310	50	7.8	--	--	143	--	--	4.8	36	<18.0
JAN 31-31	0850	20030131	2230	50	7.5	10,400	156	--	3.1	1.04	17.2	83	<18.0
MAR 04-08	2325	20030308	1440	50	--	--	--	--	1.2	0.054	--	330	140
MAR 14-16	1435	20030316	2015	50	7.3	4,320	171	152	3.9	0.028	201	480	130
APR 04-05	1750	20030405	0545	50	7.5	2,600	110	--	1.8	0.161	166	340	120

Date	1,2-Ethanediol, water, unfltrd mg/L (91075)	Runoff volume thousands of cubic feet (99904)
OCT 02-02	<18.0	2,000
JAN 31-31	<18.0	150
MAR 04-08	<18.0	810
MAR 14-16	<18.0	5,800
APR 04-05	<18.0	2,100

## 04087159 KINNICKINNIC RIVER AT SOUTH 11TH STREET AT MILWAUKEE, WI

LOCATION.--Lat 42°59'51", long 87°55'35", in SW ¼ NW ¼ sec.8, T.6 N., R.22 E., Milwaukee County, Hydrologic Unit 04040003, on left bank 150 ft upstream from footbridge on South 11th Street, 3.2 mi upstream from mouth, at Milwaukee.

DRAINAGE AREA.--18.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year. Low-flow records equivalent to records for Kinnickinnic River at Milwaukee, WI (04087160) September 1976 to January 1983 (discontinued). Discontinued gage was located 0.3 mi downstream from present gage.

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

GAGE.--Water-stage recorder and steel plate weir. Elevation of gage is 590 ft above NGVD of 1929, from river-profile map.

REMARKS.--Records good except those for estimated daily discharges, which are poor, and those for discharges greater than 500 ft<sup>3</sup>/s, which are fair (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	5.2	3.6	3.5	e6.4	e4.3	11	201	6.9	4.7	16	3.7
2	84	4.8	e3.8	3.8	e8.6	e4.2	8.4	15	6.3	4.7	10	4.0
3	17	4.7	e3.8	4.2	e11	e4.1	8.0	9.2	7.5	5.0	154	4.2
4	69	4.7	e3.7	3.7	e7.0	e4.0	76	20	5.8	14	12	4.2
5	9.7	8.2	e3.7	4.5	e5.7	e4.0	35	150	5.6	e50	6.6	4.5
6	6.6	6.0	e3.7	4.8	e5.0	e4.0	13	18	6.2	e140	32	4.2
7	6.3	4.7	e3.7	4.4	e4.4	e4.3	19	69	7.5	e52	12	4.0
8	6.4	4.5	e3.7	4.5	e4.2	e4.2	26	25	105	e70	5.5	4.2
9	5.6	4.5	e3.7	4.4	e4.0	e4.0	32	208	12	10	5.0	4.1
10	6.2	4.8	e4.0	3.9	e3.9	e4.0	22	27	7.2	14	4.5	4.3
11	6.1	20	e4.3	e3.9	e3.9	e4.0	16	67	6.7	11	5.4	4.5
12	5.6	5.9	4.7	e3.9	e3.8	e5.0	12	28	6.6	6.1	6.3	4.5
13	5.1	5.0	4.6	e3.9	e3.8	e15	10	13	6.8	5.0	5.4	3.1
14	5.4	4.4	4.2	e3.9	e3.8	e30	9.6	22	6.0	4.8	5.5	7.0
15	5.7	4.4	3.9	e3.8	e3.7	e60	9.3	28	5.9	4.1	5.8	7.0
16	5.3	4.9	4.1	e3.8	e3.7	29	8.8	11	5.9	6.1	5.7	5.5
17	5.5	4.9	4.1	e3.8	e3.8	16	8.3	8.9	5.6	5.3	5.2	4.7
18	23	12	69	e3.8	e4.0	12	7.9	7.8	5.4	4.9	5.1	4.4
19	6.4	17	12	e3.8	e5.0	45	63	9.6	5.4	4.3	6.0	4.3
20	4.6	5.0	5.9	e3.7	e5.6	31	22	26	4.8	4.4	6.9	3.8
21	4.6	37	4.9	e3.7	e6.5	17	11	8.7	4.8	15	6.8	3.6
22	4.6	6.6	4.4	e3.7	e5.0	12	9.4	7.4	4.4	6.1	5.8	3.4
23	4.5	4.8	3.8	e3.7	e4.4	9.4	8.5	6.7	4.7	4.7	4.4	7.3
24	14	4.5	4.0	e3.7	e4.2	8.9	8.0	6.2	5.0	4.7	4.0	4.2
25	57	4.3	3.9	e3.7	e4.2	8.6	7.8	5.8	5.6	5.9	14	3.8
26	8.9	4.8	3.6	e3.8	e4.1	8.5	7.4	5.6	7.2	4.9	9.2	1.6
27	5.7	4.1	3.8	e3.8	e4.4	8.3	7.2	5.6	35	4.7	5.3	8.0
28	5.4	4.0	4.0	e3.8	e4.6	40	7.3	15	40	4.8	5.2	5.2
29	5.1	3.8	4.2	e3.8	---	11	7.3	8.6	6.8	10	5.4	4.5
30	5.0	3.9	4.3	e4.0	---	8.3	65	41	5.0	9.2	4.2	4.4
31	4.9	---	4.0	e5.0	---	9.2	---	46	---	6.3	3.7	---
TOTAL	410.0	213.4	199.1	122.7	138.7	429.3	556.2	1,120.1	347.6	533.6	382.9	312.6
MEAN	13.2	7.11	6.42	3.96	4.95	13.8	18.5	36.1	11.6	17.2	12.4	10.4
MAX	84	37	69	5.0	11	60	76	208	105	140	154	70
MIN	4.5	3.8	3.6	3.5	3.7	4.0	7.2	5.6	4.4	4.3	3.7	3.6
CFSM	0.70	0.38	0.34	0.21	0.26	0.74	0.99	1.92	0.62	0.92	0.66	0.55
IN.	0.81	0.42	0.39	0.24	0.27	0.85	1.10	2.22	0.69	1.06	0.76	0.62

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

	1992	1986	1983	1988	2001	1993	1993	2000	1999	2000	1986	2000
MEAN	19.9	23.4	16.7	14.7	21.3	23.9	35.1	27.3	30.0	28.3	34.8	25.8
MAX	60.5	67.8	48.9	43.7	56.3	44.9	104	79.2	81.6	66.8	82.3	69.5
(WY)	(1992)	(1986)	(1983)	(1988)	(2001)	(1993)	(1993)	(2000)	(1999)	(2000)	(1986)	(2000)
MIN	6.81	7.11	3.96	3.96	4.95	8.87	14.1	9.07	11.4	12.6	11.8	8.41
(WY)	(1995)	(2003)	(1990)	(2003)	(2003)	(1996)	(1989)	(1992)	(1985)	(1996)	(1999)	(1995)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	7,167.9		4,766.2			
ANNUAL MEAN	19.6		13.1		25.1	
HIGHEST ANNUAL MEAN					39.8	
LOWEST ANNUAL MEAN					13.1	
HIGHEST DAILY MEAN	509	Aug 13	208	May 9	1,630	Aug 6, 1986
LOWEST DAILY MEAN	3.6	Dec 1	3.5	Jan 1	(a)2.9	Dec 26-28, 1989
ANNUAL SEVEN-DAY MINIMUM	(a)3.7	Dec 1	(a)3.7	(b)Dec 1	(a)3.0	Dec 23, 1989
MAXIMUM PEAK FLOW			1,300	Aug 3	(c)10,600	Aug 6, 1986
MAXIMUM PEAK STAGE			9.88	Aug 3	(d)14.41	Aug 6, 1986
ANNUAL RUNOFF (CFSM)	1.04		0.69		1.33	
ANNUAL RUNOFF (INCHES)	14.18		9.43		18.14	
10 PERCENT EXCEEDS	41		29		48	
50 PERCENT EXCEEDS	7.5		5.5		9.4	
90 PERCENT EXCEEDS	4.5		3.8		5.6	

(a) Ice affected

(b) Also occurred Jan. 19

(c) From rating curve extended above 600 ft<sup>3</sup>/s on basis of step-backwater analysis at peak gage height

(d) From inside gage, 16.01 ft, from floodmarks

(e) Estimated due to ice effect or missing record

04087170 MILWAUKEE RIVER, AT MOUTH, AT MILWAUKEE, WI

LOCATION.--Lat 43°01'28", long 87°53'54", in SW ¼ NE ¼, sec.33, T.7 N., R.22 E., Milwaukee County, Hydrologic Unit 04040003, at mouth.

DRAINAGE AREA.--872 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1994 to October 1995, October 2001 to September 2003.

REMARKS.--Records estimated from sum of discharges measured at upstream stations 04087000, 04087120, and 04087159, plus the sum of 04087120 and 04087159 discharges, multiplied by an area/basin ration of 0.229. Records are poor (see page 11).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e368	e817	e574	e261	e405	e514	e622	e1,090	e434	e294	e157	e194
2	e330	e547	e552	e262	e309	e457	e770	e1,260	e401	e268	e146	e1,120
3	e297	e509	e524	e262	e303	e386	e688	e1,020	e2,840	e252	e132	e972
4	e285	e462	e505	e263	e290	e361	e680	e913	e2,940	e233	e239	e632
5	e258	e427	e514	e263	e289	e462	e663	e815	e2,210	e207	e161	e490
6	e241	e406	e523	e263	e293	e565	e631	e751	e1,730	e194	e136	e368
7	e228	e390	e510	e273	e309	e546	e842	e771	e1,380	e180	e143	e293
8	e213	e367	e571	e276	e324	e956	e1,980	e749	e1,090	e415	e138	e252
9	e196	e349	e488	e283	e336	e2,220	e3,640	e802	e843	e1,080	e133	e227
10	e391	e334	e450	e278	e712	e2,280	e2,780	e526	e989	e552	e128	e209
11	e327	e319	e426	e274	e509	e2,090	e2,360	e919	e899	e505	e124	e191
12	e392	e310	e431	e271	e456	e1,930	e2,000	e1,730	e739	e429	e1,800	e183
13	e880	e427	e721	e267	e442	e1,730	e1,700	e1,480	e961	e381	e2,580	e170
14	e697	e361	e594	e322	e427	e1,580	e1,480	e1,340	e1,170	e370	e1,310	e161
15	e498	e354	e595	e337	e411	e1,450	e1,340	e1,130	e995	e340	e431	e154
16	e456	e341	e577	e301	e426	e1,300	e1,160	e975	e850	e311	e302	e146
17	e401	e324	e611	e305	e450	e1,140	e1,030	e824	e721	e272	e246	e150
18	e366	e313	e592	e299	e464	e1,040	e973	e736	e625	e245	e193	e404
19	e342	e322	e614	e296	e806	e944	e1,100	e672	e536	e226	e205	e622
20	e313	e305	e547	e284	e1,180	e998	e919	e620	e466	e230	e182	e408
21	e302	e302	e493	e274	e1,440	e944	e886	e575	e770	e268	e626	e350
22	e844	e309	e441	e287	e1,220	e880	e904	e539	e649	e207	e1,840	e327
23	e1,660	e323	e448	e294	e1,130	e780	e826	e493	e566	e198	e779	e296
24	e1,550	e538	e429	e299	e1,020	e735	e829	e464	e495	e177	e554	e254
25	e1,210	e486	e316	e295	e910	e681	e794	e958	e464	e174	e396	e233
26	e1,070	e500	e244	e297	e799	e633	e758	e683	e483	e771	e329	e216
27	e944	e530	e252	e303	e700	e592	e847	e645	e434	e190	e290	e202
28	e829	e509	e258	e314	e624	e589	e1,200	e569	e370	e181	e265	e186
29	e744	e593	e256	e311	---	e600	e1,310	e1,000	e336	e344	e246	e620
30	e670	e653	e253	e313	---	e572	e1,220	e529	e310	e196	e232	e233
31	e624	---	e262	e345	---	e580	---	e474	---	e169	e214	---
TOTAL	17,926	12,727	14,571	8,972	16,984	30,535	36,932	26,052	27,696	9,859	14,657	10,263
MEAN	578	424	470	289	607	985	1,231	840	923	318	473	342
MAX	1,660	817	721	345	1,440	2,280	3,640	1,730	2,940	1,080	2,580	1,120
MIN	196	302	244	261	289	361	622	464	310	169	124	146
CFSM	0.66	0.49	0.54	0.33	0.70	1.13	1.41	0.96	1.06	0.36	0.54	0.39
IN.	0.76	0.54	0.62	0.38	0.72	1.30	1.58	1.11	1.18	0.42	0.63	0.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994-1995, 2002 BY WATER YEAR (WY)

	409	384	372	276	394	799	976	644	473	394	494	273
MEAN	409	384	372	276	394	799	976	644	473	394	494	273
MAX	578	424	470	289	607	985	1,231	840	923	684	662	342
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1994)	(1995)	(2002)
MIN	177	343	274	263	182	613	634	357	227	179	348	178
(WY)	(1995)	(1995)	(1995)	(1995)	(1995)	(1995)	(1994)	(1994)	(1994)	(1995)	(1994)	(1994)

SUMMARY STATISTICS

	2002 WATER YEAR	WATER YEARS 1994 - 2002
ANNUAL TOTAL	227,174	
ANNUAL MEAN	622	498
HIGHEST ANNUAL MEAN		622
LOWEST ANNUAL MEAN		405
HIGHEST DAILY MEAN	3,640	3,640
LOWEST DAILY MEAN	124	88
ANNUAL SEVEN-DAY MINIMUM	138	110
ANNUAL RUNOFF (CFSM)	0.71	0.57
ANNUAL RUNOFF (INCHES)	9.69	7.76
10 PERCENT EXCEEDS	1,200	1,020
50 PERCENT EXCEEDS	464	333
90 PERCENT EXCEEDS	211	148

(e) Estimated

04087170 MILWAUKEE RIVER, AT MOUTH, AT MILWAUKEE, WI—Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e247	e229	e127	e187	e128	e170	e438	e1,580	e401	e177	e592	e68
2	e631	e225	e127	e188	e141	e148	e387	e1,020	e359	e164	e467	e68
3	e434	e216	e146	e197	e160	e137	e369	e923	e341	e150	e720	e67
4	e607	e207	e175	e197	e142	e147	e683	e795	e313	e192	e259	e67
5	e404	e215	e173	e200	e135	e147	e619	e1,750	e288	e362	e243	e65
6	e424	e211	e163	e200	e124	e157	e533	e1,340	e274	e504	e368	e63
7	e433	e202	e155	e188	e112	e160	e511	e1,480	e267	e575	e264	e61
8	e371	e204	e155	e190	e120	e158	e556	e1,520	e1,160	e394	e207	e74
9	e346	e206	e156	e188	e117	e168	e570	e2,820	e620	e282	e194	e80
10	e319	e212	e171	e167	e126	e177	e568	e2,070	e499	e266	e196	e78
11	e289	e260	e172	e163	e125	e190	e565	e2,470	e581	e237	e187	e77
12	e260	e230	e178	e121	e134	e207	e526	e2,580	e542	e206	e197	e162
13	e233	e228	e198	e130	e134	e255	e482	e2,210	e495	e182	e154	e194
14	e221	e232	e203	e128	e144	e331	e454	e1,860	e445	e178	e137	e441
15	e214	e226	e207	e117	e152	e488	e431	e1,560	e389	e361	e128	e155
16	e205	e224	e207	e116	e152	e468	e421	e1,220	e344	e189	e124	e216
17	e198	e223	e208	e115	e162	e469	e407	e974	e303	e166	e117	e210
18	e276	e250	e580	e115	e164	e541	e397	e780	e271	e146	e106	e155
19	e248	e324	e352	e110	e178	e715	e753	e694	e243	e128	e100	e124
20	e226	e258	e340	e108	e191	e657	e548	e898	e213	e120	e98	e108
21	e228	e384	e296	e108	e192	e580	e474	e661	e204	e137	e90	e99
22	e226	e308	e233	e110	e178	e574	e475	e621	e185	e123	e85	e331
23	e222	e266	e220	e106	e165	e547	e460	e577	e155	e108	e79	e136
24	e298	e254	e207	e111	e165	e511	e442	e527	e156	e104	e76	e106
25	e518	e241	e206	e108	e154	e507	e409	e477	e171	e99	e90	e98
26	e308	e220	e225	e108	e154	e448	e363	e434	e188	e91	e89	e130
27	e277	e170	e236	e108	e156	e424	e336	e398	e227	e89	e85	e122
28	e271	e156	e207	e110	e170	e557	e318	e387	e319	e86	e78	e97
29	e260	e158	e207	e108	---	e481	e298	e358	e199	e92	e75	e87
30	e248	e166	e218	e108	---	e478	e551	e507	e169	e99	e74	e99
31	e240	---	e208	e115	---	e467	---	e811	---	e193	e70	---
TOTAL	9,682	6,905	6,656	4,325	4,175	11,464	14,344	36,302	10,321	6,200	5,749	3,838
MEAN	312	230	215	140	149	370	478	1,171	344	200	185	128
MAX	631	384	580	200	192	715	753	2,820	1,160	575	720	441
MIN	198	156	127	106	112	137	298	358	155	86	70	61
CFSM	0.36	0.26	0.25	0.16	0.17	0.42	0.55	1.34	0.39	0.23	0.21	0.15
IN.	0.41	0.29	0.28	0.18	0.18	0.49	0.61	1.55	0.44	0.26	0.25	0.16

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994-95, 2002- 03, BY WATER YEAR (WY)

MEAN	385	333	320	231	313	656	851	776	441	345	417	237
MAX	578	424	470	289	607	985	1,231	1,171	923	684	662	342
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(1994)	(1995)	(2002)
MIN	177	230	215	140	149	370	478	357	227	179	185	128
(WY)	(1995)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(1994)	(1994)	(1995)	(2003)	(2003)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1994 - 2003

ANNUAL TOTAL	205,193	119,961	
ANNUAL MEAN	562	329	451
HIGHEST ANNUAL MEAN			622
LOWEST ANNUAL MEAN			329
HIGHEST DAILY MEAN	3,640	2,820	3,640
LOWEST DAILY MEAN	124	61	61
ANNUAL SEVEN-DAY MINIMUM	138	66	66
ANNUAL RUNOFF (CFSM)	0.64	0.38	0.52
ANNUAL RUNOFF (INCHES)	8.75	5.12	7.03
10 PERCENT EXCEEDS	1,160	580	933
50 PERCENT EXCEEDS	340	208	298
90 PERCENT EXCEEDS	182	105	133

(e) Estimated

04087204 OAK CREEK AT SOUTH MILWAUKEE, WI

LOCATION.--Lat 42°55'30", long 87°52'12", in SW ¼ NW ¼ sec.2, T.5 N., R.22 E., Milwaukee County, Hydrologic Unit 04040002, on left bank 25 ft downstream from 15th Avenue bridge in South Milwaukee and 2.8 mi upstream from mouth.

DRAINAGE AREA.--25.0 mi<sup>2</sup>.

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

REVISED RECORDS.--WDR WI-80-1: 1979 (average discharge).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 631.40 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Low flows may occasionally be affected by construction and activity at gravel pit upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	2.0	e1.8	1.7	e1.5	e1.8	6.6	108	14	2.8	1.4	0.57
2	27	1.8	1.5	1.6	e2.2	e1.5	5.7	30	8.7	2.3	1.6	0.54
3	18	2.0	e1.5	1.5	e2.8	e1.4	4.9	15	7.8	2.1	9.1	0.53
4	27	2.5	e1.5	e1.5	e1.8	e1.3	28	14	7.3	2.3	20	0.49
5	26	2.5	e1.5	e1.5	e1.4	e1.2	47	112	6.3	9.0	5.3	0.47
6	10	2.9	e1.4	e1.7	e1.3	e1.1	21	40	6.0	27	3.4	0.45
7	6.8	2.6	e1.4	1.8	e1.1	e1.3	14	62	6.0	37	18	0.44
8	5.7	2.0	e1.4	1.9	e1.0	e1.1	16	94	34	26	6.1	0.44
9	3.9	1.9	e1.4	2.4	e0.90	e1.0	20	184	27	21	3.2	0.44
10	3.1	2.6	e1.4	1.9	e0.82	e1.0	34	71	11	8.0	2.0	0.46
11	2.5	6.5	e1.4	1.4	e0.77	e6.0	28	40	7.5	6.0	1.6	0.49
12	2.0	6.2	e1.4	1.2	e0.74	e20	18	45	5.9	6.7	1.5	2.4
13	1.8	3.3	e1.4	1.2	e0.73	e30	13	25	5.2	4.2	1.4	9.3
14	1.7	2.5	e1.5	e0.97	e0.72	e39	9.4	22	4.8	3.3	1.3	15
15	1.7	2.4	e1.5	e0.90	e0.72	e50	8.3	30	4.6	34	1.1	10
16	2.0	2.0	e1.5	e0.85	e0.70	e40	7.1	20	4.2	11	1.2	3.5
17	2.2	2.1	1.5	e0.80	e0.70	23	6.5	15	4.0	5.1	1.2	1.8
18	6.1	2.6	20	e0.77	e0.70	12	6.0	12	3.7	3.8	1.3	1.3
19	8.1	6.5	25	e0.76	e0.80	14	28	13	3.6	3.0	0.86	0.93
20	3.7	4.2	8.0	e0.72	e1.0	26	27	22	3.2	2.5	0.78	0.67
21	2.5	8.2	4.7	e0.68	e2.3	24	15	13	2.8	3.8	0.84	0.61
22	2.0	8.0	4.1	e0.65	e2.0	13	9.6	10	2.6	3.7	1.2	5.6
23	1.9	3.9	3.3	e0.62	e1.8	9.1	7.8	8.9	2.3	2.5	0.62	4.6
24	2.1	2.8	e3.0	e0.62	e1.6	8.3	7.1	7.9	2.2	1.9	0.57	2.3
25	20	2.3	2.0	e0.60	e1.5	7.4	6.3	7.2	2.1	1.8	0.83	1.4
26	13	2.1	e1.9	e0.60	e1.4	6.2	5.4	6.7	2.0	1.5	0.58	2.6
27	5.1	e2.0	e1.8	e0.60	e1.4	5.6	4.9	6.3	2.9	1.5	0.56	5.8
28	3.4	e1.9	1.7	e0.60	e1.5	13	4.6	7.2	13	1.4	0.55	2.9
29	2.2	2.0	1.7	e0.60	---	16	4.5	13	8.6	1.3	1.2	1.8
30	2.2	1.9	1.9	e0.60	---	7.6	13	11	3.9	1.2	0.95	1.4
31	2.0	---	1.9	e0.77	---	6.0	---	34	---	1.1	0.65	---
TOTAL	221.4	96.2	106.0	34.01	35.90	388.9	426.7	1,099.2	217.2	238.8	90.89	79.23
MEAN	7.14	3.21	3.42	1.10	1.28	12.5	14.2	35.5	7.24	7.70	2.93	2.64
MAX	27	8.2	25	2.4	2.8	50	47	184	34	37	20	15
MIN	1.7	1.8	1.4	0.60	0.70	1.0	4.5	6.3	2.0	1.1	0.55	0.44
CFSM	0.29	0.13	0.14	0.04	0.05	0.50	0.57	1.42	0.29	0.31	0.12	0.11
IN.	0.33	0.14	0.16	0.05	0.05	0.58	0.63	1.64	0.32	0.36	0.14	0.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

MEAN	12.0	17.1	18.3	14.5	25.4	46.2	48.8	26.4	23.9	15.5	14.3	17.6
MAX	48.4	85.3	65.3	77.3	84.5	149	151	96.7	85.8	95.8	52.7	110
(WY)	(1992)	(1986)	(1983)	(1974)	(2001)	(1979)	(1993)	(2000)	(1968)	(1969)	(1986)	(1972)
MIN	1.86	1.83	0.79	0.021	1.28	2.24	9.14	2.15	2.15	3.34	1.89	1.78
(WY)	(1976)	(1977)	(1977)	(1977)	(2003)	(1968)	(1968)	(1977)	(1988)	(1988)	(1970)	(1982)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	5,955.4		3,034.43			
ANNUAL MEAN	16.3		8.31		23.3	
HIGHEST ANNUAL MEAN					41.7	
LOWEST ANNUAL MEAN					6.67	
HIGHEST DAILY MEAN	398		184		855	
LOWEST DAILY MEAN	(a)1.2		0.44		0.00	
ANNUAL SEVEN-DAY MINIMUM	(c)1.4		0.46		0.00	
MAXIMUM PEAK FLOW			267		1,140	
MAXIMUM PEAK STAGE			5.22		9.88	
INSTANTANEOUS LOW FLOW					0.00	
ANNUAL RUNOFF (CFSM)	0.65		0.33		0.93	
ANNUAL RUNOFF (INCHES)	8.86		4.52		12.65	
10 PERCENT EXCEEDS	32		22		49	
50 PERCENT EXCEEDS	6.8		2.5		7.9	
90 PERCENT EXCEEDS	1.8		0.74		1.9	

- (a) Also occurred Sept. 17
- (b) Several days during 1977
- (c) Ice affected
- (e) Estimated due to ice effect or missing record

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04087220 ROOT RIVER NEAR FRANKLIN, WI

LOCATION.--Lat 42°52'25", long 87°59'45", in SW ¼ SE ¼ sec.22, T.5 N., R.21 E., Milwaukee County, Hydrologic Unit 04040002, on right bank 400 ft upstream from State Highway 100, 2.1 mi upstream from Root River Canal, 2.4 mi southeast of Franklin, 5.5 mi southeast of Hales Corners, and about 24 mi upstream from mouth.

DRAINAGE AREA.--49.2 mi<sup>2</sup>.

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

REVISED RECORD.--WDR WI-81-1: Drainage area. WDR WI-83-1: 1981.

GAGE.--Water-stage recorder. Datum of gage is 674.5 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Flow affected by urbanization in the drainage basin. Gage-height telemeter at station.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Flood of Mar. 30, 1960, reached a stage of 9.57 ft, discharge, 5,130 ft<sup>3</sup>/s, from rating curve extended above 2,000 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	5.0	e8.0	e5.1	e4.1	e3.1	15	200	44	5.2	4.5	1.6
2	39	4.9	e6.8	e5.0	e5.2	e3.0	15	126	22	4.2	4.3	1.5
3	47	6.1	e7.1	e5.0	e7.0	e2.8	13	49	18	5.7	12	1.4
4	37	7.7	e6.2	e5.0	e4.2	e2.7	27	32	16	3.3	59	1.3
5	60	5.7	e5.7	e5.0	e3.4	e2.6	67	174	14	10	14	1.1
6	23	12	e5.5	e5.1	e3.0	e2.5	44	135	12	26	7.5	0.94
7	15	9.7	e5.3	e5.4	e2.6	e2.4	32	82	12	69	41	1.0
8	11	7.3	e5.2	e5.9	e2.4	e2.3	29	149	49	43	15	1.1
9	10	6.0	e5.2	e5.7	e2.1	e2.3	33	301	63	48	7.2	1.0
10	7.9	6.2	e5.0	e5.1	e1.9	e2.3	62	284	28	19	4.9	0.96
11	7.6	13	e5.1	e4.7	e1.8	e3.0	71	111	19	15	3.7	0.96
12	6.2	23	e5.2	e3.8	e1.8	e4.0	52	155	15	18	3.6	0.97
13	5.6	13	e5.3	e3.4	e1.7	e12	37	97	13	11	3.6	13
14	5.0	9.5	e5.5	e2.8	e1.7	e20	30	60	11	6.0	3.2	22
15	7.2	9.2	e6.0	e2.6	e1.6	e60	25	67	9.7	36	2.6	34
16	5.3	7.8	e6.4	e2.3	e1.6	e120	23	48	8.0	31	2.2	6.5
17	6.9	7.2	e7.0	e2.1	e1.5	101	21	35	6.9	12	2.3	2.9
18	8.8	7.8	e12	e2.0	e1.5	59	20	29	6.2	6.9	2.2	1.8
19	21	16	e46	e1.9	e1.9	40	24	25	6.0	6.1	2.0	1.5
20	11	19	e26	e1.8	e3.0	49	40	31	5.4	4.5	1.8	1.6
21	6.0	16	e17	e1.7	e5.0	44	29	28	4.9	5.5	1.7	1.5
22	5.3	33	e14	e1.6	e4.4	30	21	19	4.6	7.1	1.7	6.8
23	6.8	18	e11	e1.5	e4.0	23	18	17	4.7	4.0	1.5	13
24	5.8	11	e9.0	e1.5	e3.5	21	18	16	4.1	3.2	1.5	3.8
25	25	11	e6.8	e1.4	e3.3	17	16	14	4.0	3.2	1.5	2.3
26	43	9.7	e6.6	e1.3	e2.9	16	13	13	7.9	3.5	1.5	1.6
27	16	7.2	e6.0	e1.3	e2.9	13	11	13	7.9	3.5	2.2	3.2
28	8.9	6.3	e5.7	e1.3	e3.3	15	10	16	26	2.9	2.1	4.2
29	6.9	7.5	e5.4	e1.3	---	34	9.8	65	25	2.5	2.0	2.5
30	5.7	e9.0	e5.2	e1.6	---	22	12	27	9.4	2.5	1.7	3.8
31	4.7	---	e5.1	e2.5	---	16	---	78	---	3.2	1.6	---
TOTAL	484.6	324.8	276.3	96.7	83.3	745.0	837.8	2,496	476.7	421.0	215.6	139.83
MEAN	15.6	10.8	8.91	3.12	2.98	24.0	27.9	80.5	15.9	13.6	6.95	4.66
MAX	60	33	46	5.9	7.0	120	71	301	63	69	59	34
MIN	4.7	4.9	5.0	1.3	1.5	2.3	9.8	13	4.0	2.5	1.5	0.94
CFSM	0.32	0.22	0.18	0.06	0.06	0.49	0.57	1.64	0.32	0.28	0.14	0.09
IN.	0.37	0.25	0.21	0.07	0.06	0.56	0.63	1.89	0.36	0.32	0.16	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

MEAN	23.8	30.4	34.3	30.9	48.1	89.6	88.5	47.6	45.8	27.8	26.2	31.5
MAX	95.5	151	118	190	161	315	316	148	164	142	72.3	214
(WY)	(1992)	(1986)	(1983)	(1974)	(1971)	(1979)	(1973)	(2000)	(1999)	(1969)	(1987)	(1972)
MIN	2.38	4.26	2.02	2.47	2.75	13.6	21.5	5.32	3.55	3.09	3.82	3.05
(WY)	(1964)	(1964)	(1964)	(1977)	(1977)	(1968)	(1977)	(1977)	(1988)	(1988)	(1971)	(1971)



## 04087220 ROOT RIVER NEAR FRANKLIN, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	11,597.8		6,597.63			
ANNUAL MEAN	31.8		18.1		43.6	
HIGHEST ANNUAL MEAN					84.0 1974	
LOWEST ANNUAL MEAN					12.7 1977	
HIGHEST DAILY MEAN	662	Apr 9	301	May 9	2,390	Apr 21, 1973
LOWEST DAILY MEAN	3.0	Aug 10	0.94	Sep 6	0.44	Aug 9, 10, 1971
ANNUAL SEVEN-DAY MINIMUM	3.7	Aug 6	0.99	Sep 6	0.99	Sep 6, 2003
MAXIMUM PEAK FLOW			449	May 10	(a)3,700	Apr 21, 1973
MAXIMUM PEAK STAGE			6.88	May 10	(b)9.43	Jul 3, 2000
INSTANTANEOUS LOW FLOW			0.88	Sep 6	0.38	Aug 10, 1971
ANNUAL RUNOFF (CFSM)	0.65		0.37		0.89	
ANNUAL RUNOFF (INCHES)	8.77		4.99		12.05	
10 PERCENT EXCEEDS	59		44		92	
50 PERCENT EXCEEDS	14		6.8		16	
90 PERCENT EXCEEDS	5.3		1.7		4.4	

(a) Gage height, 9.31 ft

(b) Discharge, 2,420 ft<sup>3</sup>/s

(c) Estimated due to ice effect or missing record

## STREAMS TRIBUTARY TO LAKE MICHIGAN

## 04087233 ROOT RIVER CANAL NEAR FRANKLIN, WI

LOCATION.--Lat 42°48'55", long 87°59'40", in SE 1/4 SE 1/4 sec.10, T.4 N., R.21 E., Racine County, Hydrologic Unit 04040002, on right bank 10 ft downstream from highway bridge 3.5 mi upstream from mouth, 5.5 mi southeast of intersection U.S. 45 and State Highway 100 in Franklin, and 8.7 mi southeast of Hales Corners.

DRAINAGE AREA.--57.0 mi<sup>2</sup>.

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

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

GAGE.--Water-stage recorder. Elevation of gage is 670 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges and Sept. 16-25, which are poor (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	1.8	1.9	e2.9	e3.0	e1.5	19	78	33	5.3	3.4	1.6
2	7.8	2.1	2.3	e2.8	e4.2	e1.4	17	93	25	4.3	4.7	1.5
3	13	2.0	2.4	e2.7	e5.0	e1.3	15	58	22	3.6	11	1.3
4	13	2.6	2.0	e2.5	e4.0	e1.3	17	42	19	3.9	90	1.3
5	31	2.5	1.9	e2.6	e3.2	e1.2	62	146	16	4.7	35	1.2
6	14	2.6	1.7	e2.7	e2.5	e1.2	53	134	14	6.9	26	1.0
7	9.2	2.7	e1.7	e2.8	e2.1	e1.3	41	91	14	55	36	1.1
8	6.3	2.3	e1.7	e3.2	e1.8	e1.3	34	117	20	36	17	1.1
9	4.8	2.4	e1.6	e3.0	e1.5	e1.3	32	257	31	56	12	1.0
10	3.6	2.5	e1.6	e2.9	e1.2	e1.2	79	233	22	33	8.7	0.91
11	2.9	3.0	e1.6	e2.5	e1.1	e1.3	103	128	19	20	7.8	1.0
12	2.7	4.3	e1.7	e2.3	e1.0	e1.5	70	154	16	14	6.8	1.2
13	3.2	3.2	e1.7	e2.2	e1.0	e2.0	50	105	14	10	5.8	1.6
14	3.0	2.9	e1.8	e1.9	e0.99	e5.0	40	77	12	8.4	5.3	1.5
15	3.0	2.9	e2.0	e1.7	e0.98	e12	34	77	11	66	4.9	1.6
16	2.8	2.8	e2.2	e1.6	e0.99	e66	28	68	9.8	69	4.5	1.2
17	2.6	2.6	e2.5	e1.5	e1.0	e40	24	55	8.5	27	4.2	1.3
18	3.2	2.7	5.1	e1.4	e1.1	e30	21	47	8.1	16	3.8	1.6
19	3.8	3.0	27	e1.3	e1.7	e24	24	41	13	11	3.7	2.0
20	3.4	3.2	18	e1.2	e3.0	e32	37	48	12	9.1	3.2	2.2
21	2.8	3.2	11	e1.1	e5.0	e43	32	44	9.6	8.2	2.8	2.0
22	2.8	3.7	8.1	e1.0	e3.5	e30	26	37	8.6	7.6	3.0	3.1
23	2.5	3.3	5.9	e0.99	e2.7	e22	21	32	7.0	6.3	2.4	4.0
24	2.4	3.0	5.0	e0.97	e2.0	18	18	27	6.0	5.2	2.4	3.3
25	3.4	2.9	e4.4	e0.95	e1.6	20	17	23	5.9	4.7	2.7	3.1
26	6.7	2.5	e3.7	e0.94	e1.4	20	14	20	5.4	4.5	2.4	e3.5
27	4.7	e2.5	e3.3	e0.94	e1.3	17	13	17	4.8	4.7	1.9	e4.0
28	3.6	e2.4	e3.2	e0.94	e1.7	18	12	17	5.6	4.2	1.8	e2.0
29	3.1	e2.7	e3.1	e0.95	---	30	11	33	7.5	3.9	1.8	e1.7
30	3.1	e2.5	e3.6	e0.98	---	24	11	26	6.7	3.6	2.0	e1.6
31	2.6	---	e3.3	e1.2	---	20	---	35	---	3.5	1.7	---
TOTAL	175.5	82.8	137.0	56.66	60.56	488.8	975	2,360	406.5	515.6	318.7	55.51
MEAN	5.66	2.76	4.42	1.83	2.16	15.8	32.5	76.1	13.6	16.6	10.3	1.85
MAX	31	4.3	27	3.2	5.0	66	103	257	33	69	90	4.0
MIN	2.4	1.8	1.6	0.94	0.98	1.2	11	17	4.8	3.5	1.7	0.91
CFSM	0.10	0.05	0.08	0.03	0.04	0.28	0.57	1.34	0.24	0.29	0.18	0.03
IN.	0.11	0.05	0.09	0.04	0.04	0.32	0.64	1.54	0.27	0.34	0.21	0.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
	23.1	120	(2002)	1.05	(1964)
	34.5	154	(1993)	1.27	(1964)
	40.8	200	(1983)	0.86	(1964)
	33.7	219	(1974)	0.56	(1977)
	62.0	193	(2001)	0.69	(1977)
	105	352	(1979)	6.03	(1968)
	105	312	(1993)	10.9	(1977)
	56.7	229	(2000)	2.47	(1977)
	49.2	156	(1996)	2.51	(1977)
	24.3	141	(1978)	2.18	(1991)
	19.8	138	(1978)	2.16	(1999)
	31.1	212	(1972)	1.28	(1971)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1964 - 2003
ANNUAL TOTAL	11,747.6	5,632.63	
ANNUAL MEAN	32.2	15.4	48.6
HIGHEST ANNUAL MEAN			98.4
LOWEST ANNUAL MEAN			4.57
HIGHEST DAILY MEAN	729	257	1,410
LOWEST DAILY MEAN	1.2	0.91	(a)0.40
ANNUAL SEVEN-DAY MINIMUM	1.6	(b)0.95	(b)0.45
MAXIMUM PEAK FLOW		356	(c)1,440
MAXIMUM PEAK STAGE		7.33	(d)11.26
ANNUAL RUNOFF (CFSM)	0.56	0.27	0.85
ANNUAL RUNOFF (INCHES)	7.67	3.68	11.60
10 PERCENT EXCEEDS	62	40	121
50 PERCENT EXCEEDS	11	3.7	15
90 PERCENT EXCEEDS	2.0	1.3	2.3

- (a) Result of freezeup  
 (b) Ice affected  
 (c) Gage height, 9.88 ft  
 (d) Backwater from ice  
 (e) Estimated due to ice effect or missing record

04087240 ROOT RIVER AT RACINE, WI

LOCATION.--Lat 42°45'05", long 87°49'25", in NW ¼ NE ¼ sec.6, T.3 N., R.23 E., Racine County, Hydrologic Unit 04040002, on left bank 30 ft downstream from State Highway 38 bridge in Racine, 350 ft downstream from Horlick Dam, and 5.2 mi upstream from mouth.

DRAINAGE AREA.--190 mi<sup>2</sup>, of which 1.24 mi<sup>2</sup> is probably noncontributing.

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

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

GAGE.--Water-stage recorder. Elevation of gage is 610 ft above NGVD of 1929, from topographic map. Prior to Feb. 5, 1964, nonrecording gage on bridge 30 ft upstream.

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	14	12	15	3.2	4.6	57	103	142	29	6.7	5.0
2	42	12	13	15	4.4	5.0	51	298	117	24	6.6	5.1
3	44	10	13	14	6.1	5.2	49	278	86	18	7.5	4.1
4	74	7.9	12	12	7.0	5.3	57	150	73	13	33	3.5
5	65	7.3	12	13	7.3	5.6	105	242	66	12	157	3.0
6	76	7.5	11	12	7.5	5.3	170	416	58	15	90	2.7
7	49	8.4	10	12	8.2	5.5	143	413	52	70	63	2.5
8	31	16	10	13	8.1	5.7	116	371	58	137	109	2.2
9	25	18	9.5	14	6.9	6.0	106	562	94	135	66	1.7
10	23	15	9.4	13	5.9	5.4	134	653	116	126	44	1.5
11	20	15	9.6	14	5.2	5.9	225	750	76	79	34	1.7
12	17	15	9.2	12	4.6	6.0	239	546	60	54	30	2.2
13	15	16	9.5	10	4.2	6.3	169	418	51	44	21	2.3
14	13	19	10	8.6	4.0	7.1	127	323	43	34	18	2.9
15	11	20	11	7.6	4.1	13	104	237	36	63	16	11
16	10	18	12	7.0	4.1	49	89	210	31	146	14	28
17	11	17	12	5.8	4.0	169	78	166	29	126	11	32
18	11	15	16	4.8	4.2	139	67	134	27	64	9.2	23
19	11	15	24	e4.5	4.5	91	65	116	27	41	7.5	16
20	12	15	69	e4.2	4.9	79	84	116	26	31	6.8	11
21	15	18	60	e3.9	5.8	99	102	120	26	26	6.6	8.1
22	16	21	35	e3.7	6.8	111	87	111	24	26	4.9	7.2
23	14	23	30	e2.7	6.8	91	71	94	21	23	4.4	4.8
24	12	25	24	e2.0	e6.7	71	58	85	19	20	3.7	6.5
25	13	24	23	e2.0	e6.4	63	55	77	17	17	3.8	11
26	14	21	20	e2.0	e6.0	56	49	72	15	13	3.4	11
27	26	19	17	e2.0	5.4	54	44	67	13	11	3.4	10
28	32	16	16	e1.8	4.8	54	39	65	14	9.7	3.2	8.9
29	24	16	15	e1.8	---	59	35	75	19	8.7	7.8	7.2
30	20	15	15	e2.1	---	75	37	127	30	7.5	5.4	7.0
31	16	---	15	2.7	---	67	---	106	---	6.4	5.2	---
TOTAL	824	479.1	564.2	238.2	157.1	1,418.9	2,812	7,501	1,466	1,429.3	802.1	243.1
MEAN	26.6	16.0	18.2	7.68	5.61	45.8	93.7	242	48.9	46.1	25.9	8.10
MAX	76	25	69	15	8.2	169	239	750	142	146	157	32
MIN	10	7.3	9.2	1.8	3.2	4.6	35	65	13	6.4	3.2	1.5
CFSM	0.14	0.08	0.10	0.04	0.03	0.24	0.50	1.28	0.26	0.24	0.14	0.04
IN.	0.16	0.09	0.11	0.05	0.03	0.28	0.55	1.48	0.29	0.28	0.16	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

MEAN	68.1	103	120	95.6	177	327	347	190	150	85.7	64.5	89.4
MAX	335	454	568	401	641	1,149	1,071	649	493	485	237	683
(WY)	(1987)	(1986)	(1983)	(1974)	(2001)	(1979)	(1993)	(1990)	(1996)	(1969)	(1987)	(1972)
MIN	2.79	8.90	3.08	2.21	3.98	30.6	61.8	8.73	7.75	5.18	6.60	2.58
(WY)	(1964)	(1964)	(1964)	(1977)	(1977)	(1968)	(1977)	(1977)	(1988)	(1988)	(1971)	(1963)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1963 - 2003	
ANNUAL TOTAL	36,314.5		17,935.0			
ANNUAL MEAN	99.5		49.1		151	
HIGHEST ANNUAL MEAN					268	
LOWEST ANNUAL MEAN					23.3	
HIGHEST DAILY MEAN	1,230	Jun 6	750	May 11	4,010	Mar 5, 1974
LOWEST DAILY MEAN	6.8	Aug 12	1.5	Sep 10	0.00	Jul 9-15, 1988
ANNUAL SEVEN-DAY MINIMUM	8.9	Jul 19	2.0	Jan 24	0.00	Jul 9, 1988
MAXIMUM PEAK FLOW			789	May 11	4,500	Mar 5, 1974
MAXIMUM PEAK STAGE			4.33	May 11	8.54	Mar 5, 1974
INSTANTANEOUS LOW FLOW			1.5	Sep 9-11	0.00	Jul 9-15, 1988
ANNUAL RUNOFF (CFSM)	0.53		0.26		0.80	
ANNUAL RUNOFF (INCHES)	7.16		3.53		10.88	
10 PERCENT EXCEEDS	201		116		396	
50 PERCENT EXCEEDS	36		16		54	
90 PERCENT EXCEEDS	11		4.3		9.4	

(e) Estimated due to ice effect or missing record

## STREAMS TRIBUTARY TO LAKE MICHIGAN

04087257 PIKE RIVER NEAR RACINE, WI

LOCATION.--Lat 42°38'49", long 87°51'38", in SE ¼ NE ¼ sec.11, T.2 N., R.22 E., Kenosha County, Hydrologic Unit 04040002, on right bank just downstream from unnamed tributary, 1.7 mi downstream from Pike Creek, 6.8 mi southwest of Racine Post Office and 9.0 mi upstream from mouth.

DRAINAGE AREA.--38.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1971 to current year.

REVISED RECORDS.--WDR WI-76-1: 1975. WDR WI-80-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 620.09 ft above NGVD of 1929 (Southeastern Wisconsin Regional Planning Commission).

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Low flows considerably affected by effluent discharge in upper portion of basin, and by occasional regulation of small recreation dam 1.1 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	10	7.1	6.2	e7.0	e6.1	23	115	24	11	17	8.0
2	39	9.9	7.4	e6.3	e7.2	e6.1	20	69	20	12	17	9.0
3	32	9.9	8.3	e6.3	e7.0	e6.3	20	45	19	11	25	11
4	54	11	e8.4	e6.3	e6.8	e6.3	46	36	19	11	25	11
5	44	13	e8.0	e6.2	e6.6	e6.5	84	212	17	22	15	11
6	23	13	e6.4	e7.0	e6.4	e6.7	46	113	16	65	15	9.9
7	18	12	5.2	e8.0	e6.0	e7.0	39	70	16	89	15	9.1
8	16	11	6.0	e9.2	e6.1	e7.0	38	56	30	52	12	9.7
9	14	11	e7.2	11	e6.0	e7.0	43	206	25	43	10	10
10	13	9.8	8.5	11	e6.0	e7.3	74	119	19	27	11	10
11	13	18	7.8	10	e5.9	e7.9	57	78	18	22	13	11
12	12	14	8.1	8.1	e5.9	e9.0	42	93	16	17	12	16
13	13	11	8.5	e8.0	e5.9	e11	31	61	15	15	12	20
14	12	10	7.7	e7.8	e5.8	e14	27	60	14	14	11	16
15	11	11	6.8	e7.6	e5.8	38	25	67	12	132	12	13
16	11	9.7	7.4	e7.3	e5.8	33	23	50	12	41	12	12
17	11	9.2	8.4	e7.1	e5.9	25	20	42	13	24	13	11
18	13	9.9	23	e7.0	e6.0	19	18	36	16	19	12	11
19	11	13	39	e6.9	e6.1	21	20	33	18	16	12	9.8
20	9.4	11	19	e6.7	e6.2	41	21	44	14	14	11	9.9
21	9.8	15	14	e6.4	e6.3	53	19	33	13	14	12	10
22	10	14	12	e6.2	e6.5	33	18	27	11	14	12	16
23	11	11	e9.7	e5.8	e6.6	24	17	24	12	14	11	13
24	11	9.5	e9.0	e5.9	e6.6	22	16	22	12	14	11	11
25	18	9.4	e7.8	e6.0	e6.1	36	16	20	13	13	12	11
26	15	9.6	e7.5	e6.0	e6.1	29	14	18	13	13	13	11
27	11	9.0	e7.2	e6.0	e6.1	23	14	18	12	12	11	16
28	10	7.4	e6.8	e6.2	e6.1	30	14	23	17	13	11	11
29	10	7.6	6.6	e6.4	---	35	15	32	14	13	36	11
30	11	8.3	7.3	e6.6	---	24	25	22	12	13	9.4	11
31	11	---	7.5	e6.8	---	22	---	39	---	13	7.0	---
TOTAL	512.2	328.2	303.6	222.3	174.8	616.2	885	1,883	482	803	427.4	349.4
MEAN	16.5	10.9	9.79	7.17	6.24	19.9	29.5	60.7	16.1	25.9	13.8	11.6
MAX	54	18	39	11	7.2	53	84	212	30	132	36	20
MIN	9.4	7.4	5.2	5.8	5.8	6.1	14	18	11	11	7.0	8.0
CFSM	0.43	0.28	0.25	0.19	0.16	0.52	0.77	1.58	0.42	0.67	0.36	0.30
IN.	0.49	0.32	0.29	0.21	0.17	0.60	0.86	1.82	0.47	0.78	0.41	0.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2003, BY WATER YEAR (WY)

MEAN	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
MEAN	19.9	29.2	32.0	26.3	39.1	68.3	72.4	45.8	38.8	21.1	20.2	26.6
MAX	91.3	126	101	97.1	109	258	185	157	150	129	92.5	131
(WY)	(2002)	(1986)	(1983)	(1974)	(2001)	(1979)	(1993)	(2000)	(2000)	(1978)	(1978)	(1986)
MIN	4.40	3.62	2.35	2.05	3.74	14.3	12.1	4.57	8.32	4.93	4.35	3.25
(WY)	(1972)	(1972)	(1977)	(1977)	(1977)	(1996)	(1977)	(1977)	(1988)	(1976)	(1976)	(1976)

SUMMARY STATISTICS

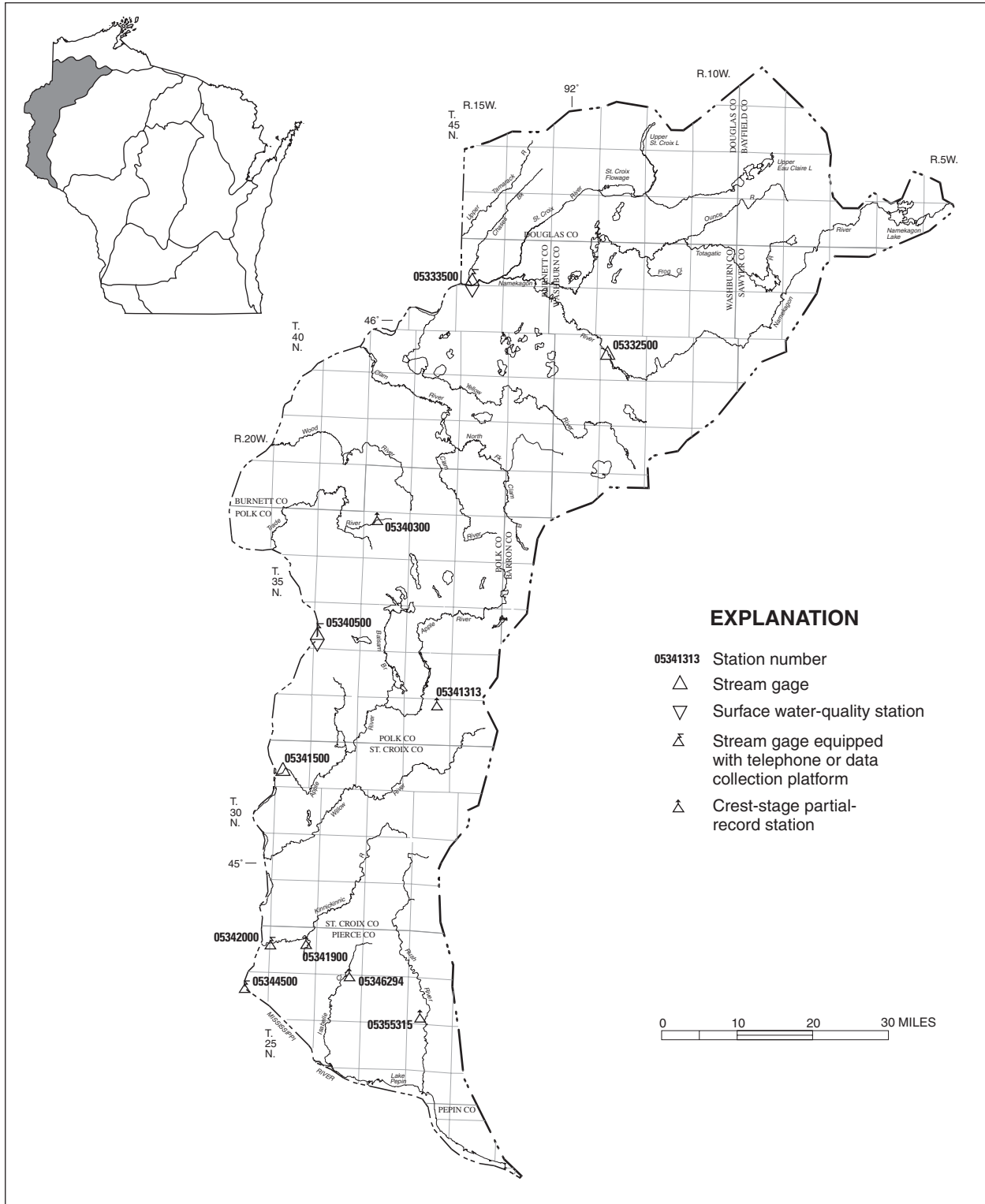
	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1972 - 2003	
ANNUAL TOTAL	10,139.0		6,987.1			
ANNUAL MEAN	27.8		19.1		36.6	
HIGHEST ANNUAL MEAN					59.0	
LOWEST ANNUAL MEAN					8.10	
HIGHEST DAILY MEAN	540	Jun 4	212	May 5	1,140	May 18, 2000
LOWEST DAILY MEAN	5.2	Dec 7	5.2	Dec 7	0.35	Sep 28, 1976
ANNUAL SEVEN-DAY MINIMUM	(a)7.0	Dec 5	(a)5.9	Feb 11	1.7	Nov 10, 1971
MAXIMUM PEAK FLOW			321	May 9	1,580	Jun 12, 2000
MAXIMUM PEAK STAGE			4.24	May 9	(b)9.14	Feb 20, 1994
ANNUAL RUNOFF (CFSM)	0.72		0.50		0.95	
ANNUAL RUNOFF (INCHES)	9.80		6.75		12.91	
10 PERCENT EXCEEDS	45		39		80	
50 PERCENT EXCEEDS	16		12		16	
90 PERCENT EXCEEDS	9.8		6.3		5.9	

(a) Ice affected

(b) Backwater from ice

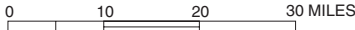
(c) Estimated due to ice effect or missing record

UPPER MISSISSIPPI RIVER BASIN RECORDS



**EXPLANATION**

- 05341313 Station number
- △ Stream gage
- ▽ Surface water-quality station
- △ Stream gage equipped with telephone or data collection platform
- △ Crest-stage partial-record station



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

**ST. CROIX RIVER BASIN**

## 05332500 NAMEKAGON RIVER NEAR TREGO, WI

LOCATION.--Lat 45°56'53", long 91°53'17", in NW ¼ SW ¼ sec.17, T.40 N., R.12 W., Washburn County, Hydrologic Unit 07030002, at powerplant of Northern States Power Co., 4.0 mi downstream from Potato Creek, and 4.4 mi northwest of Trego.

DRAINAGE AREA.--488 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1927 to September 1970. October 1987 to current year.

REVISED RECORD.--WDR WI-88-1: Drainage area.

GAGE.--Headwater and tailwater read hourly.

REMARKS.--Diurnal fluctuation caused by Trego powerplant.

COOPERATION.--Records of daily discharge furnished by Northern States Power Company and reviewed by Geological Survey.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	591	682	482	487	350	380	520	600	660	635	400	310
2	591	682	422	487	350	380	520	570	580	645	400	310
3	487	682	422	382	350	380	520	570	580	645	400	310
4	591	682	422	382	380	380	520	570	580	570	430	310
5	591	682	422	382	380	380	520	616	580	570	430	310
6	1,680	682	422	382	380	360	520	672	540	570	430	310
7	1,760	682	422	382	380	360	520	672	540	570	430	310
8	1,950	682	422	382	380	360	520	672	540	470	430	300
9	1,430	682	422	382	380	360	480	672	560	470	430	300
10	1,430	682	422	382	380	360	480	672	630	470	430	300
11	1,270	682	422	382	380	360	480	1,250	665	470	375	275
12	1,270	682	422	382	380	360	460	1,250	765	470	375	275
13	1,070	682	422	382	360	360	460	1,530	740	470	350	275
14	766	591	422	318	360	360	485	1,360	740	470	350	275
15	766	591	422	318	360	360	485	1,300	640	470	365	310
16	766	591	422	318	376	340	675	1,300	575	470	365	310
17	766	591	422	350	380	589	909	1,300	510	460	365	310
18	766	532	422	350	380	690	909	1,300	510	460	325	320
19	766	532	422	350	380	778	909	1,360	511	460	325	480
20	766	591	422	350	380	870	909	1,360	511	460	380	480
21	766	591	422	365	380	525	944	790	511	400	360	480
22	769	591	487	365	380	525	944	790	500	400	320	480
23	769	591	487	365	380	525	930	1,190	511	400	320	380
24	766	591	487	365	380	560	930	1,190	511	400	320	360
25	682	591	487	365	380	560	930	1,190	500	400	350	360
26	682	591	487	365	380	560	930	1,190	453	400	350	360
27	682	482	487	365	380	520	930	1,190	453	400	320	360
28	766	482	487	350	380	520	930	670	453	370	320	360
29	766	482	487	350	---	520	930	670	453	370	320	340
30	766	482	487	350	---	520	856	660	453	370	320	340
31	682	---	487	350	---	520	---	660	---	400	320	---
TOTAL	28,169	18,359	13,792	11,485	10,486	14,622	21,055	29,786	16,755	14,585	11,405	10,200
MEAN	909	612	445	370	374	472	702	961	558	470	368	340
MAX	1,950	682	487	487	380	870	944	1,530	765	645	430	480
MIN	487	482	422	318	350	340	460	570	453	370	320	275
CFSM	1.86	1.25	0.91	0.76	0.77	0.97	1.44	1.97	1.14	0.96	0.75	0.70
IN.	2.15	1.40	1.05	0.88	0.80	1.11	1.61	2.27	1.28	1.11	0.87	0.78

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2003, BY WATER YEAR (WY)

MEAN	448	448	390	354	350	445	731	650	559	495	420	475
MAX	909	814	581	531	512	778	1,827	1,156	1,093	1,026	728	1,834
(WY)	(2003)	(1997)	(2002)	(1969)	(1969)	(1945)	(2001)	(1950)	(1944)	(1958)	(1999)	(1941)
MIN	252	288	251	245	241	282	408	389	276	235	195	214
(WY)	(1949)	(1934)	(1933)	(1933)	(1933)	(1934)	(1931)	(1934)	(1934)	(1934)	(1933)	(1933)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1928 - 2003
ANNUAL TOTAL	256,071	200,699	
ANNUAL MEAN	702	550	481
HIGHEST ANNUAL MEAN			654
LOWEST ANNUAL MEAN			300
HIGHEST DAILY MEAN	2,420	Apr 14	1,950
LOWEST DAILY MEAN	285	Mar 4-6	275
ANNUAL SEVEN-DAY MINIMUM	327	Feb 28	286
ANNUAL RUNOFF (CFSM)	1.44		1.13
ANNUAL RUNOFF (INCHES)	19.52		15.30
10 PERCENT EXCEEDS	1,180		886
50 PERCENT EXCEEDS	641		480
90 PERCENT EXCEEDS	422		350

(a) Also occurred Sept. 7, 1930

## 05333500 ST. CROIX RIVER NEAR DANBURY, WI

LOCATION.--Lat 46°04'30", long 92°14'50", in NW ¼ SE ¼ sec.33, T.42 N., R.15 W., Burnett County, Hydrologic Unit 07030001, St. Croix National Scenic Waterway, on left bank at downstream side of bridge on State Highway 35, 3.5 mi downstream from Namekagon River, 10 mi northeast of Danbury, and at mile 129.2.

DRAINAGE AREA.--1,580 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1914 to September 1981, October 1984 to current year. Prior to October 1933, published as "at Swiss".

REVISED RECORDS.--WSP 1438: 1915(M), 1919-20, 1923-24(M), 1927(M), 1931(M), 1934, 1935-37(M). WSP 1628: 1918. WDR WI-85-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.21 ft above NGVD of 1929. Prior to Apr. 23, 1937, nonrecording gage 40 ft downstream at same datum. Apr. 23, 1937, to Jan. 5, 1939, nonrecording gage at present site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,440	1,490	e1,000	e1,000	e860	e880	1,310	1,750	1,650	1,750	958	683
2	1,340	1,480	e1,000	e990	e880	e880	1,370	1,670	1,500	1,560	973	676
3	1,350	1,460	e960	e900	e890	e870	1,340	1,650	1,400	1,680	971	652
4	1,700	1,420	e960	e840	e870	e860	1,310	1,590	1,380	1,690	1,010	659
5	2,580	1,410	e920	e800	e840	e850	1,290	1,800	1,340	1,650	969	679
6	3,020	1,440	e960	e800	e800	e850	1,200	2,380	1,310	1,480	959	662
7	3,450	1,380	e940	e800	e780	e860	1,150	2,400	1,400	1,390	963	660
8	3,610	1,380	e920	e840	e800	e840	1,120	2,230	1,430	1,310	899	656
9	3,590	1,400	e900	e840	e800	e820	1,130	2,560	1,390	1,260	859	642
10	3,540	1,380	e900	e800	e800	e800	1,150	4,110	1,550	1,360	835	593
11	3,140	1,380	e900	e780	e800	e830	1,200	4,480	2,160	1,480	850	608
12	2,880	1,410	e920	e780	e800	e840	1,220	4,690	2,290	1,390	859	626
13	2,720	1,370	e950	e770	e800	e860	1,220	4,560	2,170	1,330	823	692
14	2,330	1,370	e920	e770	e800	e850	1,310	4,330	1,890	1,280	820	694
15	1,990	1,330	e920	e720	e800	e860	1,300	3,950	1,720	1,260	801	694
16	2,210	1,310	e900	e720	e800	e900	1,540	3,640	1,480	1,380	800	691
17	2,020	1,280	e900	e770	e800	e1,200	1,830	3,160	1,380	1,310	773	702
18	1,810	1,270	e910	e780	e810	e1,500	2,060	2,380	1,330	1,370	747	727
19	1,870	1,250	e920	e780	e850	e1,800	2,230	2,350	1,280	1,270	727	989
20	1,850	1,270	e900	e780	e880	e2,000	2,670	3,460	1,220	1,230	719	1,130
21	1,750	1,300	e940	e790	e900	e1,700	3,110	3,900	1,120	1,280	726	1,010
22	1,770	1,290	e970	e780	e880	e1,600	3,150	3,390	1,050	1,200	691	993
23	1,810	1,280	e970	e770	e850	e1,500	3,110	3,250	1,320	1,210	701	931
24	1,640	1,250	e960	e790	e840	e1,500	2,930	3,110	1,530	1,160	728	858
25	1,580	1,240	e970	e780	e800	e1,400	2,320	2,420	1,910	1,100	714	816
26	1,620	1,190	e970	e780	e840	e1,300	2,340	2,090	2,220	1,100	721	833
27	1,630	e1,200	e970	e750	e840	e1,300	2,060	2,050	2,100	1,030	699	782
28	1,600	e1,200	e990	e780	e850	e1,300	1,900	1,880	2,010	997	694	762
29	1,610	e1,100	e1,000	e800	---	1,320	1,850	1,770	2,210	933	687	803
30	1,590	e1,100	e1,000	e820	---	1,320	1,800	1,700	1,980	899	676	807
31	1,530	---	e1,000	e860	---	1,310	---	1,680	---	938	675	---
TOTAL	66,570	39,630	29,340	24,960	23,260	35,700	53,520	86,380	48,720	40,277	25,027	22,710
MEAN	2,147	1,321	946	805	831	1,152	1,784	2,786	1,624	1,299	807	757
MAX	3,610	1,490	1,000	1,000	900	2,000	3,150	4,690	2,290	1,750	1,010	1,130
MIN	1,340	1,100	900	720	780	800	1,120	1,590	1,050	899	675	593
CFSM	1.36	0.84	0.60	0.51	0.53	0.73	1.13	1.76	1.03	0.82	0.51	0.48
IN.	1.57	0.93	0.69	0.59	0.55	0.84	1.26	2.03	1.15	0.95	0.59	0.53

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

MEAN	1,192	1,213	1,022	908	904	1,335	2,376	1,846	1,510	1,299	1,071	1,202
MAX	2,489	2,216	1,910	1,555	1,518	2,930	4,944	4,023	3,797	3,230	2,223	4,759
(WY)	(1969)	(1997)	(1992)	(1997)	(1997)	(1973)	(2001)	(1950)	(1944)	(1958)	(1955)	(1941)
MIN	590	631	551	600	535	703	939	889	626	514	432	564
(WY)	(1933)	(1926)	(1933)	(1924)	(1936)	(1934)	(1931)	(1931)	(1934)	(1934)	(1934)	(1933)



## 05333500 ST. CROIX RIVER NEAR DANBURY, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1914 - 2003	
ANNUAL TOTAL	569,541		496,094		1,322	
ANNUAL MEAN	1,560		1,359		1,982	
HIGHEST ANNUAL MEAN					1986	
LOWEST ANNUAL MEAN					1934	
HIGHEST DAILY MEAN	7,360	Apr 15	4,690	May 12	10,600	Apr 24, 2001
LOWEST DAILY MEAN	(a)800	(b)Jan 2	593	Sep 10	405	(c)Aug 6, 1934
ANNUAL SEVEN-DAY MINIMUM	(a)814	Feb 26	635	Sep 6	417	Aug 12, 1934
MAXIMUM PEAK FLOW			4,800	May 12	11,000	Apr 24, 2001
MAXIMUM PEAK STAGE			4.57	May 12	8.72	Apr 24, 2001
INSTANTANEOUS LOW FLOW			574	Sep 10	393	Aug 6,13, 1934
ANNUAL RUNOFF (CFSM)	0.99		0.86		0.84	
ANNUAL RUNOFF (INCHES)	13.41		11.68		11.37	
10 PERCENT EXCEEDS	2,670		2,300		2,190	
50 PERCENT EXCEEDS	1,270		1,160		1,080	
90 PERCENT EXCEEDS	900		767		730	

(a) Ice affected

(b) Also occurred additional days

(c) Also occurred Aug. 13, 16, 17, 1934

(e) Estimated due to ice effect or missing record

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1995 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April to September 1997, December 1999 to current year.

INSTRUMENTATION.--Continuous water temperature recorder April to September 1997 and December 1999 to current year.

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

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum temperature, 30.5°C, Aug. 6, 2001; minimum, 0.0°C on many days.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum temperature, 27.0°C, Aug. 16 and 18; minimum 0.0° on many days.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	16.0	13.5	14.5	3.5	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
2	14.5	12.0	13.0	4.5	2.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0
3	12.0	10.0	11.0	4.0	2.5	3.5	0.5	0.0	0.0	0.0	0.0	0.0
4	12.0	11.5	12.0	4.0	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
5	12.0	10.5	11.0	3.5	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
6	11.5	10.0	11.0	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
7	10.0	9.0	9.5	4.5	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
8	10.0	9.0	9.5	4.5	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
9	9.5	8.5	9.0	5.0	3.5	4.0	0.5	0.0	0.0	0.0	0.0	0.0
10	9.5	8.5	9.0	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
11	11.5	9.5	10.5	4.0	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
12	11.5	10.0	11.0	3.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
13	10.0	8.0	9.0	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
14	9.0	7.5	8.5	2.5	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
15	9.5	8.0	9.0	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
16	8.0	6.5	7.0	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
17	7.0	6.5	6.5	1.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
18	7.0	6.0	6.5	2.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
19	6.5	5.5	6.0	2.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
20	6.5	5.0	5.5	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
21	5.5	4.5	5.0	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
22	5.0	4.0	4.5	1.5	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
23	4.5	3.5	4.0	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
24	4.0	2.5	3.5	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
25	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	4.5	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	5.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	5.5	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	5.5	5.0	5.0	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
30	5.0	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	4.0	3.0	3.5	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	16.0	2.5	7.7	5.0	0.0	1.9	0.5	0.0	0.0	0.0	0.0	0.0

## 05333500 ST. CROIX RIVER NEAR DANBURY, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	0.0	0.0	0.0	7.0	3.0	5.0	15.5	11.5	13.5
2	0.0	0.0	0.0	0.0	0.0	0.0	5.5	2.5	4.5	15.5	11.5	13.5
3	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.5	1.5	16.0	11.5	13.5
4	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.5	15.0	13.0	14.0
5	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	2.5	13.0	11.5	12.0
6	0.0	0.0	0.0	0.0	0.0	0.0	7.0	2.0	4.0	12.5	11.0	11.5
7	0.0	0.0	0.0	0.0	0.0	0.0	5.5	3.0	4.0	14.0	11.5	13.0
8	0.0	0.0	0.0	0.0	0.0	0.0	7.0	1.5	4.0	14.0	12.5	13.5
9	0.0	0.0	0.0	0.0	0.0	0.0	9.0	3.5	6.0	13.0	11.0	12.0
10	0.0	0.0	0.0	0.0	0.0	0.0	11.0	5.5	8.0	12.0	10.5	11.0
11	0.0	0.0	0.0	0.0	0.0	0.0	12.0	7.0	9.0	11.5	10.5	11.0
12	0.0	0.0	0.0	0.5	0.0	0.0	11.0	7.0	9.0	13.0	10.0	11.5
13	0.0	0.0	0.0	0.5	0.0	0.0	12.0	7.0	9.0	14.0	11.5	13.0
14	0.0	0.0	0.0	1.0	0.0	0.0	15.0	9.5	12.0	13.5	12.5	13.0
15	0.0	0.0	0.0	1.0	0.0	0.0	14.0	10.5	12.5	15.0	12.0	13.5
16	0.0	0.0	0.0	0.5	0.0	0.5	10.5	4.5	7.5	16.0	14.0	15.0
17	0.5	0.0	0.0	0.5	0.0	0.0	6.0	4.5	5.0	17.0	14.5	15.5
18	0.0	0.0	0.0	0.5	0.0	0.0	7.0	6.0	6.5	17.5	15.5	16.5
19	0.5	0.0	0.0	0.5	0.0	0.0	6.5	6.0	6.0	17.0	15.0	16.0
20	0.5	0.0	0.0	0.0	0.0	0.0	6.0	5.5	5.5	16.0	13.5	15.0
21	0.0	0.0	0.0	0.0	0.0	0.0	8.0	5.0	6.5	16.5	14.5	15.5
22	0.0	0.0	0.0	0.5	0.0	0.0	9.0	6.0	7.5	15.5	14.0	14.5
23	0.0	0.0	0.0	0.5	0.0	0.5	9.5	7.0	8.0	16.5	13.0	14.5
24	0.0	0.0	0.0	2.5	0.0	1.0	10.5	8.0	9.0	16.5	14.5	15.5
25	0.5	0.0	0.0	5.5	2.0	4.0	12.5	9.5	11.0	17.0	15.0	16.0
26	0.5	0.0	0.0	6.0	3.5	4.5	12.5	9.5	11.0	18.0	15.0	16.5
27	0.0	0.0	0.0	4.0	2.0	3.5	15.0	11.5	13.0	19.0	15.5	17.5
28	0.0	0.0	0.0	2.5	1.5	2.0	14.0	11.5	13.0	20.5	18.0	19.0
29	---	---	---	5.5	1.5	3.0	13.5	10.5	12.0	20.0	17.0	18.5
30	---	---	---	6.5	3.0	4.5	14.5	10.5	12.0	20.5	17.0	18.5
31	---	---	---	5.5	3.5	4.5	---	---	---	18.5	15.5	17.0
MONTH	0.5	0.0	0.0	6.5	0.0	0.9	15.0	0.0	7.5	20.5	10.0	14.5
	JUNE			JULY			AUGUST			SEPTEMBER		
1	19.5	15.5	17.5	23.5	19.5	21.5	24.0	20.0	22.0	21.0	16.0	18.5
2	19.5	16.5	18.0	25.0	20.5	22.5	23.0	20.5	22.0	21.0	17.5	19.5
3	20.0	16.5	18.0	26.0	21.5	23.5	22.5	20.5	21.0	19.5	16.5	18.0
4	20.0	17.0	18.0	25.5	22.5	24.0	24.0	20.0	21.5	19.5	15.0	17.0
5	21.0	16.5	19.0	25.5	21.5	23.5	24.5	21.0	22.5	20.0	15.0	17.5
6	19.5	17.0	18.5	26.0	22.0	24.0	24.5	21.5	23.0	21.0	16.5	19.0
7	17.5	16.5	17.0	25.5	22.5	24.0	24.5	20.5	22.5	22.0	18.0	20.0
8	19.0	16.0	17.5	25.0	21.0	23.0	24.5	20.0	22.5	22.5	18.5	20.5
9	20.5	16.5	18.5	22.5	20.0	21.0	25.0	20.0	22.5	22.0	18.5	20.0
10	19.0	16.0	17.5	20.0	18.5	19.5	24.5	21.0	22.5	21.5	18.5	19.5
11	19.0	15.0	17.0	21.5	17.5	19.5	24.0	20.5	22.0	22.0	19.0	20.0
12	19.0	17.0	18.0	23.5	19.0	21.0	24.5	19.0	21.5	21.0	19.0	20.0
13	21.0	17.5	19.0	24.0	20.0	22.0	25.0	19.5	22.5	19.0	17.5	18.0
14	21.5	18.5	20.0	23.0	21.5	22.0	25.0	21.0	23.0	18.5	15.5	17.0
15	23.0	18.5	20.5	23.5	20.0	21.5	26.5	21.5	24.0	18.5	15.0	16.5
16	24.5	19.5	22.0	24.5	20.0	22.5	27.0	22.5	24.5	18.5	14.0	16.5
17	23.5	21.5	22.0	24.5	21.5	23.0	26.0	22.0	24.0	20.5	17.0	18.5
18	24.5	20.0	22.0	23.5	19.5	21.5	27.0	22.0	24.5	19.0	16.5	18.0
19	24.0	19.5	22.0	22.5	19.5	21.5	26.0	24.0	25.0	16.5	14.5	15.5
20	24.0	19.0	21.5	24.0	20.5	22.0	26.5	23.5	24.5	16.5	13.0	14.5
21	24.5	19.0	21.5	23.0	21.0	22.0	25.0	22.0	24.0	16.0	14.5	15.0
22	24.5	20.5	22.5	22.0	19.5	20.5	24.0	19.5	21.5	15.5	14.5	15.0
23	23.5	21.0	22.5	23.5	18.5	21.0	22.5	20.5	21.5	15.5	12.5	14.0
24	24.5	21.5	22.5	24.0	19.5	21.5	24.0	20.5	22.0	15.0	12.5	14.0
25	24.0	22.0	23.0	23.0	20.5	22.0	24.0	21.0	22.5	13.0	11.0	12.0
26	22.0	18.5	20.0	26.0	21.0	23.5	24.5	20.5	22.5	13.5	12.0	12.5
27	21.5	18.0	19.5	26.0	22.5	24.5	22.5	19.0	21.0	12.5	11.5	12.0
28	20.5	17.5	19.0	24.0	21.0	22.5	22.5	19.0	20.5	12.0	10.0	11.0
29	20.5	17.0	18.5	25.5	20.0	22.5	21.0	18.5	19.5	11.0	9.0	10.0
30	23.0	18.5	20.5	26.0	22.0	23.5	20.0	16.5	18.5	10.5	8.0	9.0
31	---	---	---	24.0	21.5	22.5	20.5	16.5	18.5	---	---	---
MONTH	24.5	15.0	19.8	26.0	17.5	22.2	27.0	16.5	22.2	22.5	8.0	16.3

05340500 ST. CROIX RIVER AT ST. CROIX FALLS, WI

LOCATION.--Lat 45°24'25", long 92°38'49", in SW ¼ NW ¼ sec.30, T.34 N., R.18 W., Polk County, Hydrologic Unit 07030005, St. Croix National Scenic Riverway, on left bank, 1,500 ft downstream from powerplant of Northern States Power Co., in St. Croix Falls, and at mile 52.2.

DRAINAGE AREA.--6,240 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1902 to current year. Prior to January 1910, monthly discharge only, published in WSP 1308. Prior to October 1939, published as "near St. Croix Falls."

REVISED RECORDS.--WSP 1115: 1929. WDR WI-82-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 689.94 ft above NGVD of 1929. Prior to July 1905, gage heights and discharge measurements were used by Loweth and Wolff, consulting engineers of St. Paul, Minn., to determine the flow. July 1905 to February 1940, records were computed from power generation at the St. Croix Falls Powerplant. February 1940 to Sept. 30, 1979, water-stage recorder at site 300 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Diurnal fluctuation caused by St. Croix Falls Powerplant 1,500 ft upstream. Gage-height telemeter and data-collection platform at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,020	6,070	2,610	2,840	2,090	2,270	4,520	7,610	6,560	16,200	3,380	1,830
2	4,820	5,280	2,610	2,500	2,110	e2,100	4,550	7,110	6,190	13,600	3,450	1,830
3	4,760	5,390	2,000	e2,600	e2,200	2,150	4,420	6,500	5,960	13,300	3,520	1,930
4	5,490	5,300	2,260	2,410	e2,200	2,230	4,460	6,300	5,700	15,200	3,380	1,750
5	7,090	5,130	2,840	2,610	e2,300	e2,200	4,120	6,360	5,240	14,400	3,050	1,740
6	9,600	5,070	2,280	2,840	e2,300	e2,200	4,270	7,170	4,960	12,900	3,310	1,770
7	11,300	4,890	2,760	2,900	e2,200	2,220	4,170	9,820	5,010	11,400	3,150	1,800
8	12,100	4,670	3,260	2,970	e2,300	2,280	3,890	10,900	5,240	10,300	2,930	1,840
9	12,200	5,120	2,900	3,060	e2,200	e2,000	3,710	11,500	5,180	10,200	2,920	1,780
10	11,900	4,820	3,440	3,030	e2,100	e2,100	3,750	13,900	5,390	9,420	2,640	1,720
11	11,400	4,840	3,270	2,480	e2,300	2,180	3,750	17,200	6,040	8,990	2,660	1,690
12	10,700	4,840	3,330	2,220	2,480	2,180	3,760	21,800	8,480	9,100	2,630	2,340
13	10,100	4,430	3,260	2,220	2,220	2,220	3,830	22,200	8,910	8,760	2,720	2,940
14	9,610	4,690	3,360	2,150	2,310	2,320	3,730	21,200	8,440	8,320	2,420	2,560
15	9,070	4,410	3,390	2,040	2,440	2,340	3,760	19,600	7,830	8,150	2,360	2,800
16	8,200	4,340	3,240	2,180	2,100	3,220	5,170	17,600	7,140	7,600	2,350	2,410
17	7,770	4,260	3,180	2,090	2,090	3,170	6,370	15,400	6,700	7,170	2,110	2,430
18	7,600	4,130	3,240	2,090	2,260	3,800	8,010	13,600	5,540	6,760	2,470	2,640
19	7,290	4,120	3,340	2,190	2,080	3,820	9,290	12,700	5,520	6,080	2,220	2,710
20	7,020	4,110	3,420	2,280	2,460	4,250	11,400	13,400	5,200	5,980	2,250	3,080
21	6,930	4,030	3,520	2,190	2,160	4,550	14,200	14,900	4,360	5,450	1,960	3,340
22	6,870	3,990	3,280	2,080	2,260	4,980	16,100	16,100	4,470	5,240	2,130	3,460
23	6,710	3,950	3,240	2,150	2,340	5,050	17,000	15,700	4,200	4,890	1,990	3,260
24	6,240	3,950	2,970	2,080	e2,300	5,730	16,100	13,900	8,710	4,500	2,100	2,850
25	6,230	3,650	2,860	2,020	e2,200	6,070	14,600	12,400	18,000	4,020	2,040	2,640
26	6,210	2,970	2,910	1,900	2,110	5,880	12,600	11,000	19,500	4,130	2,100	2,810
27	6,220	3,390	2,580	2,020	2,340	6,220	11,100	9,290	19,300	3,740	2,110	2,630
28	6,210	2,820	2,800	1,890	2,190	5,250	10,000	8,540	18,600	3,890	2,100	2,770
29	6,140	3,570	2,850	2,020	---	4,990	8,910	7,820	17,500	3,670	1,940	2,530
30	5,540	3,660	3,090	2,110	---	4,430	8,240	7,300	17,100	3,250	1,930	2,440
31	5,730	---	3,110	2,120	---	4,710	---	6,880	---	3,410	1,750	---
TOTAL	242,070	131,890	93,200	72,280	62,640	109,110	229,780	385,700	256,970	250,020	78,070	72,320
MEAN	7,809	4,396	3,006	2,332	2,237	3,520	7,659	12,440	8,566	8,065	2,518	2,411
MAX	12,200	6,070	3,520	3,060	2,480	6,220	17,000	22,200	19,500	16,200	3,520	3,460
MIN	4,760	2,820	2,000	1,890	2,080	2,000	3,710	6,300	4,200	3,250	1,750	1,690
CFSM	1.25	0.70	0.48	0.37	0.36	0.56	1.23	1.99	1.37	1.29	0.40	0.39
IN.	1.44	0.79	0.56	0.43	0.37	0.65	1.37	2.30	1.53	1.49	0.47	0.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 2003, BY WATER YEAR (WY)

MEAN	3,775	3,506	2,604	2,198	2,170	4,232	10,330	7,547	5,732	4,214	2,942	3,501
MAX	14,270	11,910	5,821	4,279	6,021	14,420	29,600	21,840	19,510	17,260	9,777	14,590
(WY)	(1969)	(1972)	(1984)	(1984)	(1984)	(1945)	(2001)	(1950)	(1944)	(1952)	(1955)	(1941)
MIN	1,380	1,342	1,288	1,157	1,257	1,538	2,212	2,430	1,481	1,014	839	1,152
(WY)	(1933)	(1911)	(1911)	(1911)	(1913)	(1912)	(1902)	(1934)	(1934)	(1934)	(1934)	(1933)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1902 - 2003	
ANNUAL TOTAL	2,191,780		1,984,050			
ANNUAL MEAN	6,005		5,436		4,409	
HIGHEST ANNUAL MEAN					8,569 1986	
LOWEST ANNUAL MEAN					1,754 1934	
HIGHEST DAILY MEAN	32,300	Apr 15,16	22,200	May 13	59,500	Apr 26, 2001
LOWEST DAILY MEAN	1,940	Feb 7	1,690	Sep 11	75	Jul 17, 1910
ANNUAL SEVEN-DAY MINIMUM	2,260	Feb 6	1,760	Sep 5	754	Jul 29, 1934
MAXIMUM PEAK FLOW			22,600	May 12	60,900	Apr 25, 2001
MAXIMUM PEAK STAGE			11.15	May 12	25.88	Apr 25, 2001
ANNUAL RUNOFF (CFSM)	0.96		0.87		0.71	
ANNUAL RUNOFF (INCHES)	13.07		11.83		9.60	
10 PERCENT EXCEEDS	11,300		12,000		8,990	
50 PERCENT EXCEEDS	4,690		3,760		2,800	
90 PERCENT EXCEEDS	2,510		2,100		1,580	

(e) Estimated due to ice effect or missing record

05340500 ST. CROIX RIVER AT ST. CROIX FALLS, WI—Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: January 2000 to current year.

INSTRUMENTATION.--Water temperature recorder since January 21, 2000, provides 15-minute readings.

REMARKS.--Records represent water temperature at sensor, within 0.5°C, located near the orifice.

## EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum, 30.5°C, Aug. 7-9, 2001; minimum 0.0°C on many days.

## EXTREMES FOR CURRENT PERIOD.--

WATER TEMPERATURE: Maximum, 28.0°C, Aug. 20; minimum 0.0°C on many days.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.5	12.5	14.0	4.0	2.5	3.5	0.5	0.0	0.0	0.0	0.0	0.0
2	15.0	13.5	14.0	3.5	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
3	13.5	12.0	13.0	3.5	2.0	3.0	0.5	0.0	0.0	0.0	0.0	0.0
4	12.5	11.0	12.0	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
5	11.5	10.5	11.0	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
6	11.0	9.5	10.5	3.5	2.5	3.0	0.5	0.0	0.0	0.0	0.0	0.0
7	10.0	8.0	9.0	4.0	2.5	3.0	0.5	0.0	0.0	0.5	0.0	0.0
8	9.0	8.0	8.5	4.0	3.0	3.5	0.0	0.0	0.0	0.5	0.0	0.0
9	9.0	8.0	8.5	4.5	3.0	4.0	0.5	0.0	0.0	0.0	0.0	0.0
10	9.5	8.0	9.0	4.5	3.5	4.0	0.5	0.0	0.0	0.0	0.0	0.0
11	10.5	9.0	9.5	4.5	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
12	11.5	10.0	10.5	4.0	2.5	3.5	0.0	0.0	0.0	0.5	0.0	0.0
13	11.0	9.5	10.0	3.0	2.0	2.5	0.5	0.0	0.0	0.0	0.0	0.0
14	10.0	8.5	9.0	2.0	1.0	1.5	0.5	0.0	0.0	0.5	0.0	0.0
15	9.5	8.0	8.5	1.5	0.5	1.0	0.5	0.0	0.0	0.5	0.0	0.0
16	8.5	7.0	7.5	1.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0
17	7.5	6.0	6.5	1.0	0.0	0.5	0.5	0.0	0.0	0.5	0.0	0.0
18	6.5	5.5	6.0	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
19	6.0	5.5	6.0	1.5	0.0	0.5	0.5	0.0	0.0	0.5	0.0	0.0
20	6.0	5.0	5.5	2.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
21	5.0	4.0	4.5	2.0	1.0	1.5	0.0	0.0	0.0	0.5	0.0	0.0
22	4.5	4.0	4.0	1.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
23	4.5	3.5	4.0	1.5	0.5	1.0	0.0	0.0	0.0	0.5	0.0	0.0
24	4.0	3.5	4.0	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
25	4.0	3.5	4.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	4.5	3.5	4.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
27	4.5	3.5	4.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	4.5	3.5	4.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
29	5.0	4.0	4.5	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
30	5.0	4.5	4.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
31	4.5	3.5	4.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	15.0	3.5	7.5	4.5	0.0	1.8	0.5	0.0	0.0	0.5	0.0	0.0

## 05340500 ST. CROIX RIVER AT ST. CROIX FALLS, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	0.5	0.0	0.0	4.5	2.5	3.5	13.0	11.5	12.5
2	0.0	0.0	0.0	0.0	0.0	0.0	5.5	3.5	4.5	13.5	12.5	13.0
3	0.0	0.0	0.0	0.0	0.0	0.0	4.5	2.5	4.0	14.0	12.5	13.5
4	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	1.5	14.0	12.0	13.0
5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5	12.5	11.0	12.0
6	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	1.0	11.5	10.5	11.0
7	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.5	2.5	11.5	10.5	11.0
8	0.0	0.0	0.0	0.0	0.0	0.0	4.5	2.5	3.5	12.0	10.5	11.5
9	0.0	0.0	0.0	0.0	0.0	0.0	5.5	3.0	4.0	12.0	11.0	11.5
10	0.0	0.0	0.0	0.0	0.0	0.0	7.5	4.5	6.0	12.0	10.5	11.0
11	0.0	0.0	0.0	0.0	0.0	0.0	9.5	6.5	7.5	11.0	9.0	10.0
12	0.0	0.0	0.0	0.0	0.0	0.0	11.0	8.0	9.5	10.0	8.5	9.0
13	0.0	0.0	0.0	0.0	0.0	0.0	11.5	9.0	10.0	11.5	9.0	10.5
14	0.0	0.0	0.0	0.0	0.0	0.0	12.5	10.0	11.0	12.5	10.5	11.5
15	0.0	0.0	0.0	1.0	0.0	0.0	14.5	11.5	13.0	13.5	11.5	12.5
16	0.0	0.0	0.0	0.5	0.0	0.0	14.0	9.0	12.0	15.0	13.0	14.0
17	0.0	0.0	0.0	0.5	0.0	0.0	9.5	4.5	6.5	16.0	14.0	15.0
18	0.0	0.0	0.0	0.0	0.0	0.0	5.0	4.0	4.5	17.0	15.0	16.0
19	0.0	0.0	0.0	0.5	0.0	0.0	5.0	3.5	4.0	17.0	15.5	16.5
20	0.0	0.0	0.0	0.0	0.0	0.0	4.5	3.5	4.0	16.0	14.5	15.5
21	0.0	0.0	0.0	0.0	0.0	0.0	6.0	3.5	4.5	15.5	14.5	15.0
22	0.0	0.0	0.0	0.5	0.0	0.0	7.0	4.5	6.0	14.5	13.0	14.0
23	0.0	0.0	0.0	1.0	0.0	0.0	8.0	6.0	7.0	14.5	13.0	13.5
24	0.0	0.0	0.0	1.0	0.0	0.5	9.5	7.5	8.5	15.5	13.5	14.5
25	0.5	0.0	0.0	0.5	0.0	0.0	10.5	8.5	9.5	16.5	14.0	15.0
26	0.0	0.0	0.0	1.5	0.0	0.5	11.5	9.5	10.5	17.0	15.0	16.0
27	0.0	0.0	0.0	2.0	0.0	0.5	13.0	10.5	11.5	18.0	16.0	17.0
28	0.5	0.0	0.0	0.5	0.0	0.0	13.5	11.5	12.5	19.0	17.0	18.0
29	---	---	---	1.5	0.0	0.5	13.0	12.0	12.5	19.0	18.0	19.0
30	---	---	---	2.5	0.0	1.5	12.5	11.5	12.0	19.5	18.0	19.0
31	---	---	---	3.5	1.5	2.5	---	---	---	19.0	17.5	18.0
MONTH	0.5	0.0	0.0	3.5	0.0	0.2	14.5	0.0	6.9	19.5	8.5	13.9
	JUNE			JULY			AUGUST			SEPTEMBER		
1	18.0	17.0	17.5	22.0	19.5	20.5	26.0	24.5	25.0	23.0	21.0	21.5
2	19.0	17.0	18.0	23.5	20.5	22.0	25.0	23.5	24.5	22.5	21.0	21.5
3	19.0	17.5	18.5	24.5	22.0	23.0	25.0	23.0	24.0	22.0	20.5	21.0
4	20.0	18.0	19.0	24.5	22.5	23.5	24.0	22.5	23.0	22.5	20.0	21.0
5	20.0	18.5	19.0	25.5	23.0	24.0	24.0	22.0	23.0	21.5	19.5	20.5
6	20.0	18.0	19.0	25.0	23.0	24.0	24.0	22.5	23.0	21.5	19.5	20.5
7	19.0	17.5	18.0	25.5	23.5	24.5	25.0	23.0	24.0	22.0	20.0	21.0
8	18.0	17.0	17.5	25.0	23.0	24.0	26.0	24.0	25.0	23.0	20.5	21.5
9	19.0	17.0	18.0	24.5	22.5	23.5	26.0	24.5	25.0	24.0	21.5	22.5
10	19.0	18.0	18.5	22.5	20.5	21.5	26.0	24.5	25.5	23.5	22.0	22.5
11	18.5	17.0	18.0	21.0	20.0	20.5	26.5	24.5	25.5	23.5	21.5	22.5
12	18.0	16.5	17.5	22.5	20.0	21.0	26.0	24.0	25.0	22.5	21.0	22.0
13	19.0	17.0	17.5	23.0	21.0	22.0	25.5	24.0	24.5	21.5	20.5	21.0
14	20.5	18.0	19.0	22.5	21.5	22.0	26.0	24.0	25.0	21.0	19.5	20.5
15	21.5	19.5	20.5	22.5	21.0	22.0	26.5	24.5	25.5	20.5	18.5	19.5
16	23.0	21.0	22.0	23.5	22.0	23.0	27.5	25.0	26.0	20.0	18.0	19.0
17	23.5	22.5	23.0	24.5	23.0	23.5	27.5	25.5	26.5	20.0	18.0	18.5
18	24.5	23.0	23.5	24.5	22.5	23.5	27.5	26.0	26.5	19.5	17.5	18.5
19	24.5	22.5	23.5	24.0	22.5	23.5	27.5	26.0	26.5	19.0	17.0	18.5
20	24.5	22.0	23.5	24.0	23.0	23.5	28.0	26.5	27.0	17.5	15.5	17.0
21	24.0	22.0	23.0	24.0	22.5	23.5	27.5	26.0	27.0	16.0	15.0	15.5
22	23.5	21.5	22.5	23.5	21.5	22.5	27.5	25.0	26.0	16.0	15.0	15.5
23	24.0	21.5	22.5	23.5	21.5	22.5	26.0	24.0	25.0	16.0	14.5	15.0
24	24.0	22.0	23.0	24.0	21.5	22.5	26.0	24.0	24.5	15.5	14.0	15.0
25	22.5	20.5	21.5	24.0	22.0	23.0	25.5	24.0	24.5	15.0	13.5	14.5
26	21.0	19.5	20.5	24.5	22.0	23.0	26.5	24.0	25.0	14.0	12.5	13.5
27	20.5	19.0	19.5	26.0	23.0	24.5	25.5	24.0	24.5	13.5	11.5	12.5
28	20.5	18.5	19.5	27.0	24.0	25.5	25.5	23.5	24.5	12.5	11.0	11.5
29	20.0	18.5	19.5	26.5	25.0	25.5	24.5	22.5	23.5	11.5	10.0	11.0
30	21.0	19.0	20.0	27.0	25.0	26.0	23.5	21.5	22.5	11.0	9.5	10.5
31	---	---	---	26.5	24.5	25.5	23.5	21.0	22.0	---	---	---
MONTH	24.5	16.5	20.1	27.0	19.5	23.2	28.0	21.0	24.8	24.0	9.5	18.2

## 05341500 APPLE RIVER NEAR SOMERSET, WI

LOCATION.--Lat 45°09'27", long 92°42'59", in NE ¼ SE ¼ sec.21, T.31 N., R.19 W., St. Croix County, Hydrologic Unit 07030005, at powerplant of Northern States Power Co., 3.5 mi downstream from Somerset.

DRAINAGE AREA.--579 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1901 to June 1914 (monthly discharge only), July 1914 to September 1970, October 1986 to current year.

REVISED RECORDS.--WSP 1388: 1929, 1933. WDR-87-1: Drainage area.

GAGE.--Headwater and tailwater gages read hourly.

REMARKS.--Records of daily discharge computed on the basis of gate openings, head, and plant efficiency. Flow regulated by many powerplants upstream, but service ponds are small and monthly flows are only slightly affected.

COOPERATION.--Records of daily discharge furnished by Northern States Power Company and reviewed by Geological Survey.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	571	695	357	354	376	360	602	685	651	704	449	273
2	545	664	464	413	365	340	517	648	595	646	431	259
3	577	702	337	332	382	337	585	650	592	747	435	297
4	582	685	355	414	372	338	607	649	540	596	435	270
5	792	610	468	510	364	347	595	715	540	589	439	267
6	974	532	402	434	380	371	556	699	548	529	428	265
7	932	546	516	395	362	379	573	698	576	524	424	299
8	995	612	440	371	378	376	561	668	539	506	339	253
9	1,030	521	407	392	373	288	523	886	525	525	445	223
10	1,060	562	457	377	363	373	529	999	567	542	407	255
11	1,070	568	459	254	366	397	471	1,300	502	585	384	266
12	1,160	561	452	306	354	369	427	1,580	524	574	377	306
13	986	583	483	369	341	334	424	1,870	633	628	352	310
14	1,050	654	404	391	370	380	414	2,010	587	515	352	270
15	903	521	406	364	319	394	469	2,450	526	648	345	306
16	904	556	415	413	351	565	469	1,680	580	647	309	310
17	770	434	457	375	353	508	736	1,660	435	727	305	266
18	861	443	399	375	369	509	1,100	1,430	474	790	261	265
19	860	467	473	337	373	949	1,090	1,240	445	769	254	400
20	811	498	500	359	340	798	1,080	1,060	422	736	278	487
21	848	404	392	350	398	651	1,020	1,050	351	605	330	471
22	735	460	512	364	376	650	1,000	974	397	657	292	334
23	677	487	421	345	327	623	901	999	387	608	283	358
24	689	489	374	316	317	647	903	883	495	514	281	363
25	704	497	395	356	385	605	923	887	616	506	291	420
26	700	558	405	335	347	573	884	984	576	462	290	327
27	650	511	411	358	374	577	744	929	710	448	299	415
28	634	479	501	367	343	567	750	749	656	433	279	325
29	680	461	536	365	---	627	646	704	751	435	303	289
30	705	394	452	371	---	563	498	748	747	407	282	345
31	700	---	402	364	---	615	---	654	---	426	279	---
TOTAL	25,155	16,154	13,452	11,426	10,118	15,410	20,597	33,138	16,487	18,028	10,658	9,494
MEAN	811	538	434	369	361	497	687	1,069	550	582	344	316
MAX	1,160	702	536	510	398	949	1,100	2,450	751	790	449	487
MIN	545	394	337	254	317	288	414	648	351	407	254	223
CFSM	1.40	0.93	0.75	0.64	0.62	0.86	1.19	1.85	0.95	1.00	0.59	0.55
IN.	1.62	1.04	0.86	0.73	0.65	0.99	1.32	2.13	1.06	1.16	0.68	0.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 2003, BY WATER YEAR (WY)

MEAN	295	293	257	239	245	388	567	440	392	290	248	298
MAX	811	727	616	519	479	730	1,361	1,069	1030	582	704	808
(WY)	(2003)	(1997)	(1997)	(1997)	(2000)	(1946)	(2001)	(2003)	(1905)	(2003)	(1995)	(1962)
MIN	104	135	123	124	120	151	197	140	81.7	69.9	74.2	89.8
(WY)	(1933)	(1934)	(1934)	(1938)	(1934)	(1934)	(1930)	(1934)	(1934)	(1934)	(1934)	(1933)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1901 - 2003

ANNUAL TOTAL	213,145	200,117	
ANNUAL MEAN	584	548	329
HIGHEST ANNUAL MEAN			563
LOWEST ANNUAL MEAN			144
HIGHEST DAILY MEAN	1,490	May 13	2,650
LOWEST DAILY MEAN	252	Feb 5	223
ANNUAL SEVEN-DAY MINIMUM	323	Jan 30	261
ANNUAL RUNOFF (CFSM)	1.01		0.95
ANNUAL RUNOFF (INCHES)	13.69		12.86
10 PERCENT EXCEEDS	949		893
50 PERCENT EXCEEDS	521		473
90 PERCENT EXCEEDS	348		310

(a) Also occurred Sept. 30, 1929, July 19, 1932, and Aug. 2, 3, 1933

## 05342000 KINNICKINNICK RIVER NEAR RIVER FALLS, WI

LOCATION.--Lat 44°49'51", long 92°43'59", in NE ¼ NW ¼ sec.18, T.27 N., R.19 W., Pierce County, Hydrologic Unit 07030005, on left bank, 50 ft upstream from County Trunk Highway F, 1.9 mi upstream from mouth, 4.8 mi downstream from Lake Louise Dam, and 5.5 mi west of River Falls.

DRAINAGE AREA.--165 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1916 to September 1921 (monthly discharge for some periods published in WSP 1308), October 1998 to September 1999, July 2002 to current year.

REVISED RECORDS.--WSP 1308. WDR WI-99-1: Drainage area. WDR WI-02-1: Statistics table.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 690 ft above NGVD of 1929, from topographic map. Prior to Oct. 1, 1921, recording gage near present site at different datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	127	120	113	111	103	111	104	115	128	123	110
2	112	126	120	113	111	102	111	103	113	125	122	110
3	113	126	120	113	112	103	108	101	113	152	119	109
4	245	128	124	113	106	102	109	107	117	176	118	109
5	266	129	126	114	111	105	106	143	120	154	118	110
6	436	130	126	113	110	103	106	128	121	132	120	109
7	389	130	124	115	e110	102	105	111	130	139	120	108
8	184	130	123	116	e110	103	103	103	124	130	119	106
9	158	130	119	116	e110	105	105	159	121	127	118	107
10	198	128	121	113	109	103	109	156	123	135	118	106
11	191	128	123	109	109	105	110	937	121	135	117	105
12	154	125	121	112	107	101	114	483	116	136	116	125
13	152	125	119	110	e110	103	112	194	126	128	116	114
14	145	124	118	105	107	182	111	164	116	128	116	110
15	139	126	118	106	104	476	121	151	113	213	115	109
16	136	123	117	e110	109	359	533	137	110	155	114	109
17	135	123	117	106	106	185	348	131	110	132	114	110
18	139	124	121	e110	107	135	143	127	109	128	113	126
19	138	124	123	e110	106	121	126	133	106	126	121	141
20	135	125	120	e100	108	124	125	136	107	126	128	123
21	139	124	119	e99	109	120	127	127	106	126	117	115
22	138	125	118	e97	105	127	118	128	106	123	113	115
23	133	124	116	e96	105	115	114	131	110	121	112	113
24	129	123	118	e100	e100	115	112	126	110	121	112	113
25	134	121	114	e100	e100	110	113	122	1,130	121	113	111
26	132	118	114	e100	e100	108	112	119	406	124	113	113
27	130	121	114	e110	103	119	110	117	169	121	112	115
28	130	121	114	e110	103	166	107	118	144	120	111	113
29	129	123	117	106	---	135	106	115	140	119	111	113
30	128	122	115	110	---	115	105	118	133	119	110	112
31	126	---	115	111	---	112	---	117	---	118	110	---
TOTAL	5,129	3,753	3,694	3,356	2,998	4,264	4,040	5,146	4,885	4,138	3,599	3,389
MEAN	165	125	119	108	107	138	135	166	163	133	116	113
MAX	436	130	126	116	112	476	533	937	1,130	213	128	141
MIN	112	118	114	96	100	101	103	101	106	118	110	105
CFSM	1.00	0.76	0.72	0.66	0.65	0.83	0.82	1.01	0.99	0.81	0.70	0.68
IN.	1.16	0.85	0.83	0.76	0.68	0.96	0.91	1.16	1.10	0.93	0.81	0.76

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 2003, BY WATER YEAR (WY)

	MEAN	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	96.4	97.9	90.4	79.4	80.0	219	102	99.4	121	85.9	89.0	85.7
MAX	165	131	119	108	115	469	135	166	167	133	136	126
(WY)	(2003)	(1999)	(2003)	(2003)	(1999)	(1919)	(2003)	(2003)	(1920)	(2003)	(2002)	(2002)
MIN	65.2	62.5	72.9	60.0	55.0	87.9	78.8	69.1	74.3	43.5	27.4	41.9
(WY)	(1918)	(1917)	(1917)	(1918)	(1918)	(1921)	(1918)	(1917)	(1921)	(1920)	(1920)	(1920)

SUMMARY STATISTICS

	FOR 2003 WATER YEAR	WATER YEARS 1917 - 2003
ANNUAL TOTAL	48,391	
ANNUAL MEAN	133	103
HIGHEST ANNUAL MEAN		133
LOWEST ANNUAL MEAN		74.3
HIGHEST DAILY MEAN	1,130 Jun 25	2,870 Mar 15, 1920
LOWEST DAILY MEAN	(a)96 Jan 23	13 Aug 30, 1920
ANNUAL SEVEN-DAY MINIMUM	(a)99 Jan 20	19 Aug 5, 1920
MAXIMUM PEAK FLOW	2,130 Jun 25	(b)4,760 Mar 15, 1920
MAXIMUM PEAK STAGE	15.05 Jun 25	(c)7.98 Mar 15, 1920
INSTANTANEOUS LOW FLOW	84 Oct 2	11 Aug 30, 1920
ANNUAL RUNOFF (CFSM)	0.80	0.62
ANNUAL RUNOFF (INCHES)	10.91	8.47
10 PERCENT EXCEEDS	142	126
50 PERCENT EXCEEDS	117	85
90 PERCENT EXCEEDS	105	58

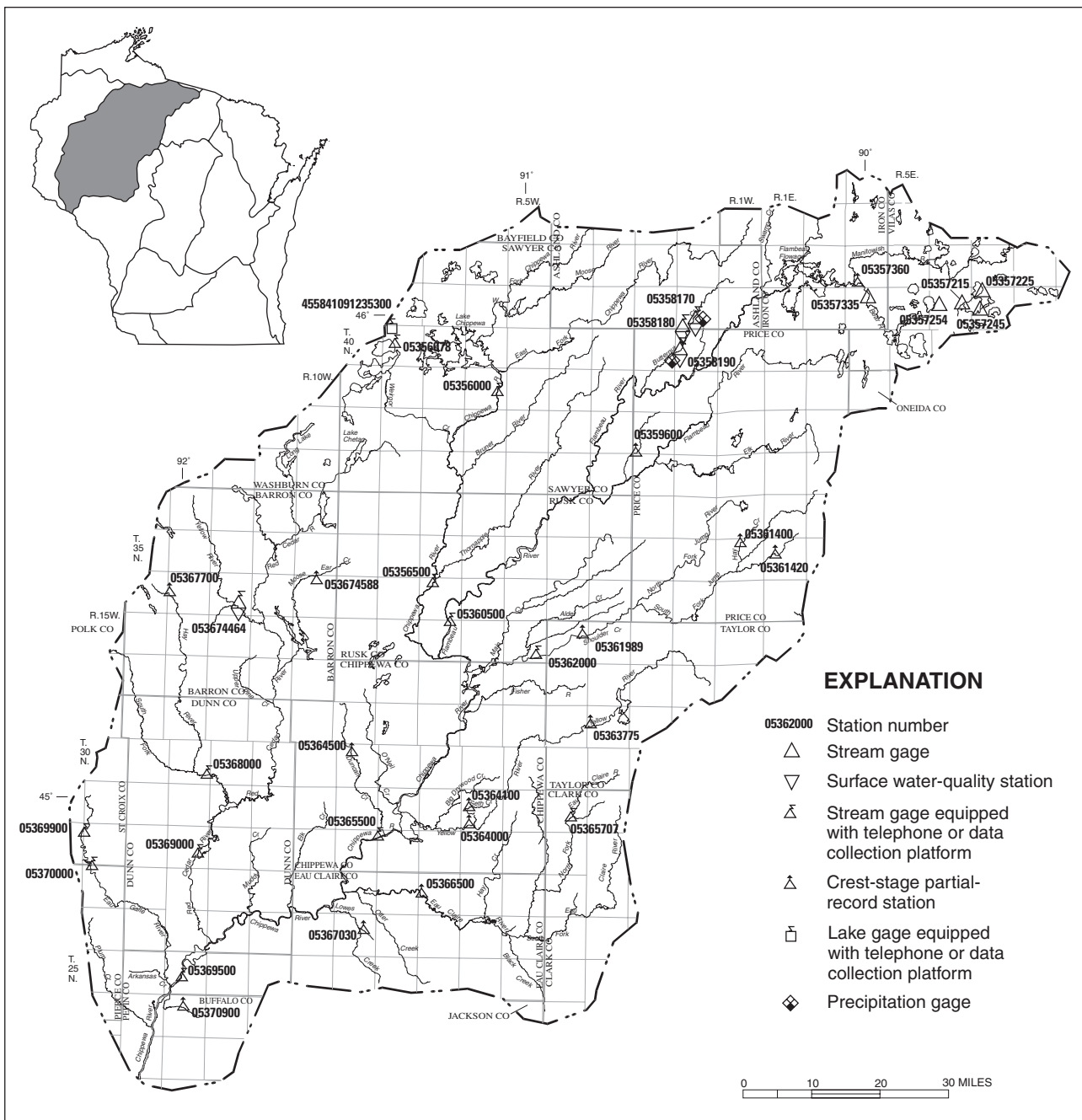
(a) Ice affected

(b) From rating curve extended above 1,000 ft<sup>3</sup>/s, based on contracted-opening measurement of peak flow

(c) Datum then in use

(e) Estimated due to ice effect or missing record





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

## CHIPPEWA RIVER BASIN

05356000 CHIPPEWA RIVER AT BISHOPS BRIDGE, NEAR WINTER, WI

LOCATION.--Lat 45°50'57", long 91°04'44", in SW ¼ NE ¼ sec.23, T.39 N., R.6 W., Sawyer County, Hydrologic Unit 07050001, on right bank 15 ft upstream from highway bridge on County Trunk Highway G, 3.2 mi downstream from Lake Chippewa Dam, and 3.7 mi northwest of Winter.

DRAINAGE AREA.--790 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1912 to current year. March, April, 1912, and December 1912 to April 1913, monthly discharge only published in WSP 1308. Unpublished daily discharges stored from February 1912 to April 1913 from District records.

REVISED RECORDS.--WSP 1438: 1913(M), 1915-18(M), 1919, 1920-23(M), 1924, 1925(M), 1927(M), 1928, 1929-30(M), 1939(M). WDR WI-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,256.78 ft above NGVD of 1929 (levels by Wilhelm Engineering Co.). See WSP 1708 or 1728 for history of changes prior to July 23, 1930.

REMARKS.--Records good (see page 11). Flow regulated by Moose Lake and Lake Chippewa. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	493	1,010	763	751	277	273	306	1,530	480	830	481	327
2	760	1,000	762	748	277	273	309	1,240	480	579	481	331
3	945	1,010	761	744	277	275	303	1,240	481	489	479	346
4	1,040	1,000	760	743	277	272	299	1,240	480	486	480	361
5	1,020	1,000	760	743	278	274	299	1,250	600	486	481	361
6	1,330	1,010	759	742	277	276	299	1,250	692	486	481	360
7	2,730	1,010	758	713	280	273	299	1,250	695	485	480	359
8	3,780	960	757	657	277	274	299	1,240	689	484	481	360
9	3,760	930	756	655	278	274	299	1,280	686	486	481	357
10	3,730	929	751	653	277	274	297	1,460	703	493	481	355
11	3,720	928	753	650	277	277	298	2,320	698	487	398	354
12	3,710	850	749	648	278	277	299	4,110	694	486	320	353
13	3,700	799	749	646	276	277	299	5,470	699	486	319	350
14	2,680	798	749	645	274	279	300	5,430	699	486	273	346
15	1,910	797	749	644	274	281	302	5,410	698	486	239	351
16	1,910	796	749	644	275	289	357	5,400	698	486	325	338
17	1,900	795	745	644	277	297	343	5,400	701	485	327	317
18	1,900	794	751	641	278	292	331	5,390	824	485	327	325
19	1,900	793	755	638	276	287	350	5,090	925	487	328	335
20	1,890	722	754	636	277	292	401	4,580	926	487	328	317
21	1,890	770	755	632	274	291	498	3,800	925	483	327	317
22	1,880	769	753	629	274	296	592	2,930	923	479	326	317
23	1,880	772	753	621	276	297	581	1,860	1,200	480	327	316
24	1,880	769	752	618	277	295	573	1,130	1,280	480	326	316
25	1,390	768	752	618	278	294	1,400	1,130	1,030	480	326	315
26	1,010	767	751	618	275	294	2,040	1,130	1,020	480	325	317
27	1,010	767	751	615	272	293	2,240	742	1,010	477	326	317
28	1,010	767	751	611	272	294	2,980	514	1,010	479	327	317
29	1,010	766	750	407	---	294	2,460	496	1,020	480	326	317
30	1,010	762	750	276	---	294	2,010	481	1,020	480	326	317
31	1,010	---	750	274	---	298	---	480	---	481	326	---
TOTAL	59,788	25,608	23,358	19,504	7,735	8,826	21,663	76,273	23,986	15,444	11,578	10,069
MEAN	1,929	854	753	629	276	285	722	2,460	800	498	373	336
MAX	3,780	1,010	763	751	280	298	2,980	5,470	1,280	830	481	361
MIN	493	722	745	274	272	272	297	480	480	477	239	315

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2003, BY WATER YEAR (WY)

MEAN	677	830	968	898	761	446	573	804	794	682	618	696
MAX	2,896	1,884	1,910	1,770	1,550	1,097	3,453	2,823	2,950	2,122	2,235	3,769
(WY)	(1986)	(1992)	(1992)	(1983)	(1928)	(1920)	(1922)	(1954)	(1939)	(1996)	(1972)	(1941)
MIN	43.6	143	234	201	194	117	20.0	24.2	39.8	40.3	146	140
(WY)	(1925)	(1925)	(2000)	(1922)	(1918)	(1923)	(1925)	(1923)	(1925)	(1925)	(1970)	(1970)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1912 - 2003	
ANNUAL TOTAL	396,617		303,832			
ANNUAL MEAN	1,087		832		728	
HIGHEST ANNUAL MEAN					1,174 1996	
LOWEST ANNUAL MEAN					258 1923	
HIGHEST DAILY MEAN	6,340	Apr 22	5,470	May 13	7,520	Sep 5, 1941
LOWEST DAILY MEAN	313	Jul 28	239	Aug 15	14	(a)Apr 17-20, 1925
ANNUAL SEVEN-DAY MINIMUM	432	Jul 27	273	Feb 27	15	Apr 30, 1925
MAXIMUM PEAK FLOW			5,560	May 12	7,520	Sep 4, 1941
MAXIMUM PEAK STAGE			9.60	May 12	11.05	Sep 4, 1941
INSTANTANEOUS LOW FLOW			(b)122	Nov 20	14	(a)Apr 17-20, 1925
10 PERCENT EXCEEDS	1,880		1,660		1,400	
50 PERCENT EXCEEDS	756		573		580	
90 PERCENT EXCEEDS	463		277		174	

(a) Also occurred May 1-5, 1925

(b) Result of regulation

## 05356078 GRINDSTONE CREEK AT COUNTY TRUNK HIGHWAY E NEAR RESERVE, WI

LOCATION.--Lat 45°56'44", long 91°23'07", in SW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> sec.17, T.40 N., R.8 W., Sawyer County, Hydrologic Unit 07050001, on right bank at County Highway E near Reserve and 560 ft upstream of Grindstone Lake.

DRAINAGE AREA.--3.99 mi<sup>2</sup>.

PERIOD OF RECORD.--October 2002 to September 2003 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,288.83 ft above NGVD of 1988.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	9.7	9.9	9.3	9.2	9.1	9.1	7.1	8.5	9.0	9.4	6.7
2	9.1	10	9.8	9.5	9.2	9.0	9.2	7.8	8.0	8.6	8.1	e6.8
3	8.8	9.6	10	9.4	9.9	9.1	8.8	17	8.1	11	8.6	e6.8
4	14	10	9.7	9.6	9.3	9.0	8.8	14	8.2	10	8.6	e6.8
5	12	9.6	10	9.4	9.2	8.9	8.9	14	6.9	9.3	8.2	e6.8
6	14	9.9	10	9.1	9.1	8.9	8.8	12	9.8	8.7	8.0	e6.8
7	14	10	10	9.1	9.1	9.1	8.6	9.9	12	8.4	8.0	e6.8
8	19	9.7	9.5	9.1	9.2	9.2	8.5	7.9	10	7.8	7.4	7.3
9	14	11	9.7	9.0	9.1	8.9	8.7	10	8.5	8.3	7.3	e6.8
10	12	11	9.6	8.8	9.0	8.8	7.5	10	15	11	7.2	e6.8
11	10	10	9.7	9.2	9.1	9.0	7.2	16	14	11	7.4	e6.8
12	9.8	10	9.2	9.1	8.9	9.0	7.5	15	11	11	7.0	e6.8
13	10	9.6	9.0	8.9	9.1	8.9	7.7	11	10	9.6	7.2	7.1
14	9.8	9.1	9.0	8.8	9.0	9.1	7.9	9.4	9.2	8.3	7.2	e6.8
15	9.2	10	8.9	8.8	9.0	9.9	7.5	8.3	9.4	9.1	7.2	6.8
16	9.0	9.8	9.2	8.9	8.9	10	13	7.6	8.4	9.0	7.3	e6.8
17	9.4	10	8.9	8.9	9.1	10	12	7.7	9.8	9.6	7.3	e6.8
18	10	9.4	10	9.2	9.2	10	11	7.5	7.6	9.9	7.1	e6.8
19	10	10	10	9.2	9.2	9.3	11	8.4	7.9	9.5	6.9	16
20	10	9.8	9.1	9.1	9.3	9.5	12	11	8.2	9.1	7.1	13
21	11	10	9.0	8.9	9.3	14	12	9.5	9.0	8.2	7.2	8.3
22	11	10	9.2	8.9	9.2	12	9.2	8.5	7.1	7.1	e6.8	6.9
23	11	10	9.0	9.0	9.1	10	8.3	8.6	9.5	7.5	e6.8	e6.8
24	10	9.1	9.0	9.0	9.0	9.1	8.2	9.0	10	7.2	e6.8	8.2
25	11	9.8	9.0	9.3	8.9	8.0	8.2	8.8	12	7.1	e6.8	7.3
26	10	9.8	9.3	9.2	9.0	8.0	7.8	7.9	9.8	8.0	e6.8	8.1
27	10	9.9	9.4	9.2	9.0	8.3	7.4	7.5	8.7	8.2	6.8	9.7
28	9.7	10	9.4	9.3	9.0	9.5	7.0	7.9	9.8	8.1	e6.8	9.8
29	10	11	9.2	9.3	---	9.0	7.5	7.7	10	7.8	e6.8	8.9
30	9.7	9.8	9.6	9.2	---	8.6	7.0	8.5	8.7	9.4	e6.8	9.3
31	9.6	---	9.1	9.2	---	8.3	---	9.7	---	10	7.0	---
TOTAL	336.8	297.6	292.4	282.9	255.6	289.5	266.3	305.2	285.1	276.8	227.9	235.4
MEAN	10.9	9.92	9.43	9.13	9.13	9.34	8.88	9.85	9.50	8.93	7.35	7.85
MAX	19	11	10	9.6	9.9	14	13	17	15	11	9.4	16
MIN	8.8	9.1	8.9	8.8	8.9	8.0	7.0	7.1	6.9	7.1	6.8	6.7
CFSM	2.72	2.49	2.36	2.29	2.29	2.34	2.22	2.47	2.38	2.24	1.84	1.97
IN.	3.14	2.77	2.73	2.64	2.38	2.70	2.48	2.85	2.66	2.58	2.12	2.19

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	10.9	9.92	9.43	9.13	9.13	9.34	8.88	9.85	9.50	8.93	7.35	9.01
MAX	10.9	9.92	9.43	9.13	9.13	9.34	8.88	9.85	9.50	8.93	7.35	10.2
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)
MIN	10.9	9.92	9.43	9.13	9.13	9.34	8.88	9.85	9.50	8.93	7.35	7.85
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

## SUMMARY STATISTICS

## FOR 2003 WATER YEAR

ANNUAL TOTAL	3,351.5
ANNUAL MEAN	9.18
HIGHEST DAILY MEAN	19 Oct 8
LOWEST DAILY MEAN	6.7 Sep 1
ANNUAL SEVEN-DAY MINIMUM	6.8 Sep 1
MAXIMUM PEAK FLOW	21 Oct 8
MAXIMUM PEAK STAGE	3.32 Oct 8
INSTANTANEOUS LOW FLOW	6.1 Sep 1
ANNUAL RUNOFF (CFSM)	2.30
ANNUAL RUNOFF (INCHES)	31.25
10 PERCENT EXCEEDS	11
50 PERCENT EXCEEDS	9.1
90 PERCENT EXCEEDS	7.1

(e) Estimated due to ice effect or missing record

## 05356500 CHIPPEWA RIVER NEAR BRUCE, WI

LOCATION.--Lat 45°27'08", long 91°15'39", in SW ¼ SE ¼ sec.5, T.34 N., R.7 W., Rusk County, Hydrologic Unit 07050001, on right bank 1.0 mi east of Bruce and 1.0 mi downstream from Thornapple River.

DRAINAGE AREA.--1,650 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1913 to current year.

REVISED RECORDS.--WSP 875: 1936-38. WSP 1308: 1922, 1937(M). WSP 1508: 1914-26(M), 1927, 1928-31(M), 1932, 1933(M), 1934-36, 1938. WDR WI-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,059.62 ft above NGVD of 1929. Prior to May 28, 1935, nonrecording gage at railroad bridge 0.8 mi upstream at datum 2.30 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Flow from 48 percent of the drainage area regulated by Moose Lake and Lake Chippewa. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,530	1,840	e1,200	e1,000	e600	e640	1,250	3,050	1,510	1,760	832	496
2	1,560	1,790	e1,200	e1,000	e600	e600	1,840	2,240	1,320	1,440	864	492
3	1,890	1,770	e1,100	e950	e600	e600	1,810	2,180	1,220	1,240	834	492
4	2,720	1,730	e1,000	e950	e580	e600	1,380	2,100	1,170	1,160	772	508
5	5,610	1,680	e1,000	e1,000	e600	e580	1,250	2,410	1,090	1,120	760	521
6	6,380	1,680	e1,000	e1,000	e600	e600	1,150	3,540	1,260	1,030	779	520
7	8,380	1,670	e1,000	e1,100	e580	e600	1,070	3,340	1,610	991	858	516
8	9,090	1,680	e1,000	e1,100	e580	e620	1,020	2,860	1,730	936	816	502
9	8,420	1,600	e1,000	e1,000	e600	e700	1,070	3,260	1,890	854	784	511
10	7,370	1,600	e1,100	e970	e600	e630	1,100	5,810	2,000	933	784	509
11	6,840	1,600	e1,200	e950	e600	e640	1,210	7,290	3,070	1,050	784	500
12	5,680	1,570	e1,200	e950	e600	e660	1,240	14,100	2,630	998	776	506
13	5,390	1,570	e1,100	e910	e600	e700	1,200	14,700	2,060	929	530	528
14	5,140	1,560	e1,200	e910	e610	e720	1,200	11,900	1,760	902	458	532
15	3,470	1,410	e1,100	e910	e600	e720	1,310	9,560	1,570	934	661	526
16	3,070	1,350	e1,100	e910	e610	e1,100	2,810	7,980	1,460	933	400	515
17	2,920	1,310	e1,200	e900	e610	e1,500	6,110	7,390	1,450	897	429	515
18	2,840	1,310	e1,300	e920	e610	e2,500	5,520	6,960	1,500	871	560	499
19	2,880	1,320	e1,500	e900	e610	e2,200	4,350	6,720	1,480	838	586	730
20	2,860	1,310	e1,300	e900	e610	e1,900	4,750	6,920	1,430	847	599	813
21	2,850	1,270	e1,200	e880	e630	e1,700	6,210	6,440	1,370	853	475	687
22	2,840	1,280	e1,100	e880	e630	e1,500	6,190	5,210	1,370	829	631	639
23	2,830	1,280	e1,100	e880	e610	e1,800	4,780	4,300	1,450	809	481	610
24	2,790	1,270	e1,100	e900	e600	e2,200	3,540	2,950	1,960	792	513	573
25	2,800	e1,200	e1,100	e940	e580	e2,100	2,720	2,170	2,150	803	534	545
26	2,250	e1,200	e1,100	e900	e600	e1,900	3,730	2,090	2,500	804	542	531
27	2,100	e1,200	e1,100	e900	e610	e1,800	3,760	2,010	2,240	781	522	535
28	2,050	e1,200	e1,200	e940	e620	e2,000	3,960	1,520	2,100	765	494	550
29	2,000	e1,300	e1,200	e850	---	e1,800	4,180	1,210	2,250	755	548	557
30	1,950	e1,200	e1,100	e700	---	e1,700	3,290	1,310	2,000	753	514	e550
31	1,810	---	e1,000	e600	---	e1,300	---	1,500	---	794	494	---
TOTAL	120,310	43,750	35,100	28,600	16,880	38,610	85,000	155,020	52,600	29,401	19,614	16,508
MEAN	3,881	1,458	1,132	923	603	1,245	2,833	5,001	1,753	948	633	550
MAX	9,090	1,840	1,500	1,100	630	2,500	6,210	14,700	3,070	1,760	864	813
MIN	1,530	1,200	1,000	600	580	580	1,020	1,210	1,090	753	400	492

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

MEAN	1,285	1,413	1,374	1,187	1,059	1,456	2,767	2,000	1,739	1,274	1,052	1,352
MAX	5,666	3,662	2,842	2,200	2,100	3,964	8,007	5,971	7,483	3,990	2,915	7,423
(WY)	(1986)	(1992)	(1992)	(1942)	(1971)	(1973)	(1916)	(1954)	(1943)	(1968)	(1972)	(1941)
MIN	296	459	442	356	338	404	590	390	411	317	364	338
(WY)	(1934)	(1990)	(1990)	(1922)	(1918)	(1923)	(1987)	(1925)	(1949)	(1925)	(1964)	(1976)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1914 - 2003	
ANNUAL TOTAL	842,128		641,393			
ANNUAL MEAN	2,307		1,757		1,494	
HIGHEST ANNUAL MEAN					2,290 1986	
LOWEST ANNUAL MEAN					666 1934	
HIGHEST DAILY MEAN	17,300	Apr 13	14,700	May 13	24,900	Sep 1, 1941
LOWEST DAILY MEAN	(a)480	Mar 4	400	Aug 16	155	Jun 10, 1932
ANNUAL SEVEN-DAY MINIMUM	561	Mar 1	502	Aug 30	218	Aug 3, 1925
MAXIMUM PEAK FLOW			15,200	May 12	(b)29,000	Sep 17, 1994
MAXIMUM PEAK STAGE			13.94	May 12	(c)20.46	Sep 1, 1941
INSTANTANEOUS LOW FLOW			275	Aug 17	155	Jun 10, 1932
10 PERCENT EXCEEDS	5,190		3,540		2,710	
50 PERCENT EXCEEDS	1,430		1,100		1,110	
90 PERCENT EXCEEDS	872		550		502	

(a) Ice affected

(b) From rating curve extended above 25,100 ft<sup>3</sup>/s, gage height 18.12 ft

(c) From floodmarks

(e) Estimated due to ice effect or missing record

## 05357215 ALLEQUASH CREEK AT CTH M, NEAR BOULDER JUNCTION, WI

LOCATION.--Lat 46°01'25", long 89°39'10", in NW¼ NW¼ sec.20, T.41 N., R.7 E., Vilas County, Hydrologic Unit 07050002, on right bank approximately 400 ft downstream from County Trunk Highway M, 6.1 mi south of Boulder Junction.

DRAINAGE AREA.--8.43 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Elevation of gage is 1,620 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	10	e12	e10	e11	e12	e14	12	8.8	8.5	1.5	6.5
2	14	e11	e12	e10	e11	e13	e14	11	8.9	9.1	1.4	6.1
3	13	e11	e12	e10	e12	e12	e14	9.8	8.8	9.4	2.2	5.8
4	16	e11	e11	e10	e12	e12	e14	9.0	8.6	9.2	2.5	5.8
5	17	e11	e10	e12	e12	e12	e14	9.7	8.3	9.2	2.4	5.5
6	21	11	e10	e12	e12	e12	e13	11	7.9	9.0	3.1	5.3
7	22	13	e11	e12	e12	e12	e12	9.0	8.4	8.9	3.8	5.3
8	21	14	e12	e12	e12	e13	e12	7.7	8.9	8.6	9.0	5.3
9	20	11	e12	e12	e12	e14	e12	8.4	9.6	8.6	17	5.2
10	19	12	e12	e12	e11	e13	e13	8.3	12	9.1	15	5.2
11	18	e12	e12	e12	e11	e13	e13	17	13	8.9	14	4.9
12	18	e12	e12	e12	e11	e13	e14	22	13	9.2	13	5.6
13	17	e12	e12	e11	e11	e13	14	23	13	9.4	12	5.9
14	17	e12	e13	e11	e10	e13	15	26	12	9.4	11	6.4
15	e17	e12	e13	e12	e10	e13	15	24	12	9.3	10	6.2
16	e15	e11	e12	e12	e11	e14	17	21	11	9.1	9.8	6.2
17	e14	e11	e12	e12	e10	e13	18	19	11	9.0	9.1	5.9
18	e15	e11	e13	e12	e10	e13	19	18	11	8.8	8.5	5.9
19	e16	e11	e14	e12	e10	e13	19	17	10	8.6	8.0	6.4
20	e16	e11	e14	e12	e10	e14	23	17	9.6	9.0	8.6	6.8
21	e16	e11	e13	e12	e10	e14	24	16	9.6	9.2	8.7	6.7
22	e14	e12	e12	e12	e11	e14	23	15	9.3	8.6	8.2	8.4
23	e12	e12	e12	e11	e12	e14	21	14	9.4	7.7	7.6	8.7
24	e13	e12	e12	e11	e11	e14	20	13	9.5	6.7	7.8	7.9
25	e13	e11	e11	e11	e12	e13	18	12	9.7	5.3	7.9	9.7
26	e13	e11	e11	e12	e10	e12	17	12	9.0	4.2	7.7	11
27	e12	e11	e12	e12	e10	e12	16	11	8.5	3.4	7.6	12
28	e12	e12	e12	e12	e10	e14	15	10	8.3	2.3	7.3	14
29	e12	e12	e12	e12	---	e14	14	9.7	8.2	1.5	7.2	13
30	e10	e10	e12	e12	---	e14	13	9.7	8.4	1.9	6.9	14
31	9.5	---	e12	e12	---	e14	---	9.7	---	1.9	6.6	---
TOTAL	475.5	344	372	359	307	406	480	432.0	295.7	233.0	245.4	221.6
MEAN	15.3	11.5	12.0	11.6	11.0	13.1	16.0	13.9	9.86	7.52	7.92	7.39
MAX	22	14	14	12	12	14	24	26	13	9.4	17	14
MIN	9.5	10	10	10	10	12	12	7.7	7.9	1.5	1.4	4.9

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

MEAN	11.6	12.3	11.2	10.3	10.1	11.2	14.5	12.5	11.0	12.0	9.44	9.51
MAX	22.7	20.2	14.5	14.9	12.8	15.8	18.3	19.3	14.9	17.1	12.4	14.8
(WY)	(1992)	(1992)	(1998)	(1998)	(1998)	(1997)	(1992)	(1996)	(1993)	(1997)	(1997)	(1994)
MIN	4.84	8.55	8.36	8.77	8.80	8.53	9.50	6.75	6.53	7.52	6.91	4.53
(WY)	(2000)	(1999)	(2000)	(2002)	(1992)	(1999)	(1999)	(2000)	(2001)	(2003)	(1998)	(1999)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1991 - 2003

ANNUAL TOTAL	4,469.8	4,171.2		
ANNUAL MEAN	12.2	11.4	11.3	
HIGHEST ANNUAL MEAN			14.4	1997
LOWEST ANNUAL MEAN			9.15	2001
HIGHEST DAILY MEAN	29	Jun 3	56	Oct 5, 1991
LOWEST DAILY MEAN	6.5	Jul 6,7,14-16	0.93	Aug 8, 1992
ANNUAL SEVEN-DAY MINIMUM	6.9	Jul 11	1.1	Aug 2, 1992
MAXIMUM PEAK FLOW			(c)79	Oct 5, 1991
MAXIMUM PEAK STAGE			(d)2.29	Oct 30
INSTANTANEOUS LOW FLOW			(a)1.0	Aug 2
10 PERCENT EXCEEDS	18		16	
50 PERCENT EXCEEDS	12		12	
90 PERCENT EXCEEDS	8.3		6.8	
			7.3	

(a) Due to storage from beaver dam upstream of gage

(b) Gage height, 1.73 ft

(c) Gage height, 2.36 ft

(d) Backwater from beaver dam

(e) Estimated due to beaver activity, ice effect, or missing record

(f) Ice jam

05357225 STEVENSON CREEK, AT COUNTY TRUNK HIGHWAY M, NEAR BOULDER JUNCTION, WI

LOCATION.--Lat 46°03'41", long 89°38'47", in NW ¼ SE ¼ sec.5, T.41 N., R.7 E., Vilas County, Hydrologic Unit 07050002, at County Highway M, 3.6 mi south of Boulder Junction.

DRAINAGE AREA.--7.96 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Elevation of gage is 1,620 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.1	e5.2	e3.1	e3.1	e2.8	e3.6	2.9	e2.0	2.9	4.5	e3.3
2	1.9	2.1	e5.0	e3.1	e3.2	e2.7	3.7	2.5	e1.9	4.4	4.4	e2.9
3	1.7	2.2	e4.9	e3.0	e3.2	e2.7	3.5	2.2	e1.9	24	4.9	e2.2
4	3.3	2.2	e4.7	e3.0	e3.1	e2.8	3.5	1.9	e1.9	20	4.6	e2.1
5	2.8	2.3	e4.8	e3.0	e3.1	e2.8	3.4	1.8	e1.8	16	4.3	e2.2
6	4.8	2.4	e4.8	e3.0	e3.0	e2.8	3.4	2.0	e1.7	14	5.2	e2.3
7	3.3	2.5	e4.8	e3.0	e2.9	e2.8	3.4	1.9	e5.3	12	4.3	e2.3
8	2.3	2.6	e4.7	e3.0	e2.9	e3.2	3.3	2.0	e4.9	11	e4.4	e2.3
9	1.9	2.6	e4.7	e3.0	e2.9	e3.1	3.5	2.5	e5.6	9.9	e4.2	e2.3
10	1.7	3.1	e4.6	e2.9	e2.8	e3.0	4.0	2.4	e6.2	9.5	e4.1	e2.4
11	1.7	2.9	e4.5	e2.9	e2.9	e3.1	3.9	8.9	e6.6	9.6	e3.9	e3.1
12	2.0	2.9	e4.4	e2.9	e2.9	e3.2	3.7	6.4	e3.7	8.3	e3.8	e3.7
13	1.9	e4.7	e4.3	e2.8	e2.9	e3.1	3.5	3.0	e3.2	7.4	e3.7	e4.5
14	1.7	e8.3	e4.1	e2.8	e3.0	e3.4	3.8	2.4	e2.8	6.6	e3.5	e4.3
15	1.7	e8.0	e4.0	e2.8	e3.0	e4.7	3.9	2.2	e2.4	6.3	e3.4	e3.5
16	1.8	e7.7	e3.9	e2.7	e3.0	e3.8	3.8	2.1	e2.2	5.7	e3.4	e2.9
17	1.7	e7.5	e3.9	e2.8	e3.0	e3.4	3.6	2.2	e2.0	5.5	e3.3	e2.9
18	1.8	e7.3	e4.2	e2.8	e3.0	e3.2	3.7	2.1	e1.9	5.0	e3.3	e3.4
19	2.0	e7.1	e4.4	e2.8	e3.1	e3.1	4.4	2.1	e1.9	4.7	e3.3	e4.1
20	1.8	e7.0	e3.9	e2.8	e3.1	e3.1	7.0	2.6	e1.8	4.7	e3.7	e3.7
21	1.9	e6.8	e3.7	e2.8	e3.2	e3.1	5.1	2.2	e1.8	4.7	e4.5	e3.5
22	1.8	e6.6	e3.6	e2.8	e3.1	e3.1	4.5	2.0	e1.8	4.5	e5.1	e4.2
23	1.8	e6.6	e3.6	e2.7	e3.0	e3.4	4.4	2.0	e1.9	4.3	e5.6	e5.2
24	1.8	e6.4	e3.6	e2.8	e2.9	e3.7	4.1	1.8	e5.9	4.0	e4.3	e3.9
25	2.0	e6.1	e3.5	e2.8	e3.0	e3.0	4.0	1.8	e7.2	3.8	e3.9	e3.2
26	2.3	e5.9	e3.4	e2.9	e2.9	e3.0	3.9	1.7	e6.3	3.8	e3.7	e3.4
27	2.2	e5.9	e3.4	e2.9	e2.9	e3.1	3.9	1.7	e6.6	3.7	e3.9	e3.8
28	2.1	e5.8	e3.3	e3.0	e2.8	e3.2	3.9	1.7	e5.7	3.6	e4.0	e4.7
29	2.1	e5.8	e3.3	e3.0	---	e3.1	3.8	e1.8	e6.4	3.3	e4.1	e5.2
30	2.0	e5.5	e3.3	e3.1	---	e3.1	3.6	e2.5	e4.5	4.3	e3.8	e5.7
31	2.1	---	e3.1	e3.1	---	e3.2	---	e2.1	---	4.9	e3.5	---
TOTAL	66.1	148.9	127.6	90.1	83.9	97.8	117.8	77.4	109.8	232.4	126.6	103.2
MEAN	2.13	4.96	4.12	2.91	3.00	3.15	3.93	2.50	3.66	7.50	4.08	3.44
MAX	4.8	8.3	5.2	3.1	3.2	4.7	7.0	8.9	7.2	24	5.6	5.7
MIN	1.7	2.1	3.1	2.7	2.8	2.7	3.3	1.7	1.7	2.9	3.3	2.1
CFSM	0.27	0.62	0.52	0.37	0.38	0.40	0.49	0.31	0.46	0.94	0.51	0.43
IN.	0.31	0.70	0.60	0.42	0.39	0.46	0.55	0.36	0.51	1.09	0.59	0.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	3.06	3.48	2.84	2.61	2.74	2.96	3.34	3.40	3.32	3.65	3.31	3.93	
MAX	4.02	6.28	4.12	3.53	3.87	4.34	5.28	6.18	6.73	7.50	4.84	6.85	
(WY)	(1996)	(1994)	(2003)	(1998)	(1998)	(1992)	(2002)	(1997)	(1991)	(2003)	(1997)	(1992)	
MIN	1.35	1.24	1.65	1.93	1.70	1.58	1.29	1.34	1.47	2.27	1.62	2.53	
(WY)	(2000)	(2000)	(2001)	(1999)	(1997)	(1995)	(1995)	(2000)	(1992)	(1998)	(1994)	(1995)	

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1991 - 2003	
ANNUAL TOTAL	1,374.1		1,381.6			
ANNUAL MEAN	3.76		3.79		3.18	
HIGHEST ANNUAL MEAN					3.79	
LOWEST ANNUAL MEAN					2.61	
HIGHEST DAILY MEAN	(a)8.3	Nov 14	24	Jul 3	36	Jun 29, 1991
LOWEST DAILY MEAN	1.7	(b)Sep 25	1.7	(b)Oct 3	0.54	Aug 19, 1994
ANNUAL SEVEN-DAY MINIMUM	1.8	Oct 10	1.8	Oct 10	0.90	Aug 13, 1994
MAXIMUM PEAK FLOW			(c)29	Jul 3	(d)39	Jun 29, 1991
MAXIMUM PEAK STAGE			(f)10.31	Sep 4	(f)10.31	Sep 4, 2003
INSTANTANEOUS LOW FLOW			1.5	Oct 4	0.33	Oct 19, 1991
ANNUAL RUNOFF (CFSM)	0.47		0.48		0.40	
ANNUAL RUNOFF (INCHES)	6.42		6.46		5.42	
10 PERCENT EXCEEDS	5.6		5.9		4.8	
50 PERCENT EXCEEDS	3.6		3.2		2.9	
90 PERCENT EXCEEDS	2.1		2.0		1.6	

- (a) Ice affected
- (b) Also occurred additional days
- (c) Gage height, 9.38 ft
- (d) Gage height, 9.62 ft
- (e) Estimated due to ice effect or missing record
- (f) Beaver dams

## 05357245 TROUT RIVER AT TROUT LAKE NEAR BOULDER JUNCTION, WI

LOCATION.--Lat 46°02'08", long 89°42'20", in SE 1/4(revised) NE 1/4 sec.14, T.41 N., R.6 E., Vilas County, Hydrologic Unit 07050002, on right bank 20 ft upstream from U.S. Highway 51 bridge, approximately 500 ft downstream from outlet of Trout Lake, 6.0 mi southwest of Boulder Junction.

DRAINAGE AREA.--46.2 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Elevation of gage is 1,620 ft above NGVD of 1929, from topographic map.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	42	37	36	33	32	42	49	57	34	30	20
2	40	41	37	35	33	32	43	47	56	34	31	19
3	38	41	37	35	35	32	44	46	54	36	32	e18
4	43	41	37	35	36	32	45	44	52	36	30	e17
5	44	41	36	35	36	32	46	45	50	36	30	e17
6	53	41	36	35	36	31	46	46	50	36	29	e16
7	55	40	35	35	36	32	45	46	52	35	29	e16
8	55	40	35	35	36	33	43	46	52	34	28	17
9	55	40	35	35	36	33	43	49	52	34	27	17
10	53	42	35	34	35	33	42	50	57	34	27	17
11	53	42	35	34	35	33	42	68	59	35	26	16
12	53	41	35	34	35	32	41	84	57	34	25	17
13	52	41	35	34	34	32	41	83	55	34	24	19
14	50	41	35	33	34	32	41	83	54	33	23	20
15	48	41	35	33	34	32	41	83	53	33	23	19
16	46	40	35	33	33	33	45	83	51	32	23	19
17	45	40	35	32	33	33	48	82	50	33	22	18
18	46	40	37	33	33	34	50	81	48	31	21	17
19	46	40	39	33	33	33	51	82	46	30	20	17
20	45	40	39	33	33	35	57	83	44	32	24	17
21	46	40	40	33	34	36	60	78	41	33	25	16
22	47	40	39	32	34	37	59	76	40	31	23	17
23	46	39	38	33	33	37	58	74	41	30	22	17
24	45	38	38	33	33	36	57	71	42	29	25	16
25	45	38	38	33	33	36	55	69	42	28	26	14
26	45	38	38	33	32	35	54	67	40	28	25	15
27	45	37	37	33	32	36	53	64	39	28	24	16
28	44	37	37	33	32	41	52	63	37	27	24	16
29	44	37	37	33	---	42	51	62	36	26	e23	16
30	44	37	37	33	---	41	50	62	35	28	22	15
31	44	---	36	33	---	41	---	61	---	31	20	---
TOTAL	1,455	1,196	1,135	1,044	952	1,069	1,445	2,027	1,442	995	783	511
MEAN	46.9	39.9	36.6	33.7	34.0	34.5	48.2	65.4	48.1	32.1	25.3	17.0
MAX	55	42	40	36	36	42	60	84	59	36	32	20
MIN	38	37	35	32	32	31	41	44	35	26	20	14
CFSM	1.02	0.86	0.79	0.73	0.74	0.75	1.04	1.42	1.04	0.69	0.55	0.37
IN.	1.17	0.96	0.91	0.84	0.77	0.86	1.16	1.63	1.16	0.80	0.63	0.41

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)
31.7	36.0	38.3	38.4	36.8
46.9	55.4	58.1	60.1	47.9
(2003)	(1997)	(1992)	(1997)	(1997)
12.2	16.2	22.5	25.8	28.1
(WY)	(2000)	(2000)	(1999)	(1999)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1991 - 2003

ANNUAL TOTAL	16,256	14,054	
ANNUAL MEAN	44.5	38.5	
HIGHEST ANNUAL MEAN			49.8 1996
LOWEST ANNUAL MEAN			29.2 2000
HIGHEST DAILY MEAN	96	84	96 May 9, 2002
LOWEST DAILY MEAN	(a)27	14	9.9 Oct 25,26,1999
ANNUAL SEVEN-DAY MINIMUM	(a)27	15	10 Oct 22, 1999
MAXIMUM PEAK FLOW		88	101 May 8, 2002
MAXIMUM PEAK STAGE		1.88	1.99 May 19, 1996
INSTANTANEOUS LOW FLOW		13	8.3 Oct 7,25,1999
ANNUAL RUNOFF (CFSM)	0.000	0.000	0.000
ANNUAL RUNOFF (INCHES)	0.00	0.00	0.00
10 PERCENT EXCEEDS	64	54	54
50 PERCENT EXCEEDS	40	36	37
90 PERCENT EXCEEDS	30	23	23

(a) Ice affected

(e) Estimated due to ice effect or missing record

## 05357254 TROUT RIVER AT COUNTY TRUNK HIGHWAY H NEAR BOULDER JUNCTION, WI

LOCATION.--Lat 46°02'02", long 89°46'21", in SE ¼ NW ¼ sec.17, T.41 N., R.6 E., Vilas County, Hydrologic Unit 07050002, on left bank 18 ft upstream from County Trunk Highway H, 8.3 mi southwest of Boulder Junction.

DRAINAGE AREA.--58.9 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Elevation of gage is 1,610 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges and periods of variable backwater, Oct. 1 to Nov. 5 and June 18 to Sept. 30, which are poor (see page 11).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	55	e49	e44	e36	e38	e56	60	71	65	51	34
2	43	55	e47	e43	e37	e38	e56	59	68	65	50	33
3	41	54	e45	e42	e37	e37	e62	56	66	66	50	33
4	43	55	e45	e41	e36	e37	e100	54	64	67	48	31
5	45	56	e47	e41	e36	e37	e93	55	63	66	46	30
6	49	e56	e47	e41	e36	e37	e72	57	65	65	44	29
7	51	e60	e47	e41	e36	e37	e58	55	69	64	44	28
8	49	e61	e47	e42	e36	e38	e56	56	69	63	42	28
9	48	e61	e46	e42	e36	e37	56	61	70	62	41	28
10	51	e65	e45	e41	e36	e37	57	65	77	62	39	28
11	51	e66	e46	e39	e36	e37	59	102	84	63	39	28
12	52	e66	e47	e39	e36	e38	57	137	78	60	37	29
13	52	e67	e47	e38	e36	e38	55	118	75	59	36	30
14	51	e68	e47	e38	e36	e38	56	107	73	59	36	29
15	51	e66	e47	e38	e36	e50	56	98	71	59	36	30
16	50	e66	e47	e38	e37	e70	61	92	69	56	36	28
17	52	e67	e48	e38	e37	e80	64	88	68	56	36	26
18	52	e68	e49	e38	e38	e70	67	85	70	55	34	26
19	52	e69	e50	e38	e38	e65	70	84	68	54	34	26
20	51	e70	e50	e37	e38	e66	88	92	66	55	36	25
21	52	e70	e49	e36	e38	e62	92	87	65	57	37	25
22	53	e70	e47	e36	e37	e60	86	83	62	56	36	26
23	52	e70	e46	e36	e37	e70	81	81	65	56	36	25
24	54	e70	e44	e36	e37	e56	77	79	66	54	39	25
25	55	e68	e44	e36	e37	e53	74	76	67	53	40	24
26	55	e67	e44	e36	e37	e53	72	73	68	51	38	25
27	54	e66	e44	e36	e37	e53	69	71	67	50	38	25
28	52	e65	e45	e36	e38	e52	69	71	67	49	38	25
29	51	e65	e45	e36	---	e51	65	69	67	48	36	25
30	51	e55	e45	e36	---	e53	64	71	66	48	35	24
31	53	---	e45	e36	---	e54	---	75	---	52	34	---
TOTAL	1,559	1,917	1,441	1,195	1,028	1,542	2,048	2,417	2,064	1,795	1,222	828
MEAN	50.3	63.9	46.5	38.5	36.7	49.7	68.3	78.0	68.8	57.9	39.4	27.6
MAX	55	70	50	44	38	80	100	137	84	67	51	34
MIN	41	54	44	36	36	37	55	54	62	48	34	24
CFSM	0.85	1.08	0.79	0.65	0.62	0.84	1.16	1.32	1.17	0.98	0.67	0.47
IN.	0.98	1.21	0.91	0.75	0.65	0.97	1.29	1.53	1.30	1.13	0.77	0.52

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	1999	2000	2001	2002	2003
MEAN	31.5	38.2	36.4	37.0	42.2
MAX	50.3	63.9	46.5	42.0	48.4
(WY)	(2003)	(2003)	(2003)	(2001)	(2000)
MIN	20.0	23.2	27.2	32.9	36.7
(WY)	(2000)	(2000)	(1999)	(1999)	(2003)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1999 - 2003
ANNUAL TOTAL	22,351	19,056	
ANNUAL MEAN	61.2	52.2	49.9
HIGHEST ANNUAL MEAN			57.3
LOWEST ANNUAL MEAN			41.9
HIGHEST DAILY MEAN	143	137	143
LOWEST DAILY MEAN	(a)33	24	16
ANNUAL SEVEN-DAY MINIMUM	(a)33	25	17
MAXIMUM PEAK FLOW		(b)143	(c)145
MAXIMUM PEAK STAGE		(a)6.42	6.98
INSTANTANEOUS LOW FLOW		23	15
ANNUAL RUNOFF (CFSM)	1.04	0.89	0.85
ANNUAL RUNOFF (INCHES)	14.12	12.04	11.50
10 PERCENT EXCEEDS	88	71	75
50 PERCENT EXCEEDS	60	51	46
90 PERCENT EXCEEDS	37	36	29

(a) Ice affected

(b) Gage height, 6.08 ft

(c) Gage height, 6.12 ft

(d) Also occurred Oct. 28, 29, 1999

(e) Estimated due to ice effect or missing record



## 05357335 BEAR RIVER NEAR MANITOWISH WATERS, WI

LOCATION.--Lat 46°02'56", long 89°59'04", in SE ¼ NW ¼ sec.10, T.41 N., R.4 E., Iron County, Hydrologic Unit 07050002, on right bank 10 ft upstream from East River Trail bridge, 2.3 mi upstream from Little Bear Creek, 7.7 mi southwest of Manitowish Waters, and 5.3 mi upstream from mouth.

DRAINAGE AREA.--81.3 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Elevation of gage is 1,580 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges and periods of variable backwater, Oct. 1 to Nov. 23, Dec. 11-17, and June 25 to Sept. 30, which are poor (see page 11).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	71	e38	e44	e30	e29	e57	110	115	85	44	18
2	91	68	e39	e45	e29	e29	e58	104	109	83	43	18
3	89	64	e40	e45	e29	e29	e59	99	103	84	46	17
4	95	61	e40	e45	e28	e29	e60	94	99	83	52	16
5	105	58	e40	e45	e28	e28	e65	93	93	82	54	15
6	123	55	e40	e45	e28	e28	e75	103	95	81	54	14
7	141	53	e40	e45	e28	e28	e84	104	108	80	52	13
8	165	50	e40	e46	e28	e29	73	104	111	79	49	12
9	182	50	e41	e47	e27	e29	69	116	112	78	46	11
10	174	52	e43	e46	e27	e30	74	133	122	78	42	12
11	165	54	46	e44	e27	e30	82	197	137	80	38	12
12	157	53	48	e43	e27	e31	82	304	133	78	34	12
13	150	51	49	e43	e27	e31	80	314	139	75	30	12
14	142	48	49	e42	e27	e32	81	298	132	73	29	12
15	132	46	48	e41	e27	e40	85	272	117	73	28	12
16	123	44	43	e40	e27	e52	99	245	105	70	27	12
17	115	43	43	e39	e27	e70	112	219	98	67	26	13
18	109	42	e45	e38	e28	e63	120	200	93	64	25	13
19	107	39	e47	e37	e28	e60	131	189	90	62	24	13
20	103	38	e48	e36	e28	e62	174	193	87	61	24	12
21	100	36	e47	e35	e29	e58	193	188	84	60	23	13
22	97	35	e46	e35	e29	e58	187	177	82	59	22	15
23	95	34	e45	e34	e29	e66	171	166	84	58	22	14
24	91	e32	e45	e34	e28	e68	155	155	86	56	22	11
25	89	e31	e45	e33	e28	e66	145	146	89	54	22	12
26	89	e31	e46	e33	e28	e63	137	138	91	52	21	13
27	87	e32	e46	e32	e28	e62	131	131	90	50	20	15
28	84	e34	e46	e32	e28	e58	123	125	89	47	20	15
29	81	e36	e46	e31	---	e57	121	123	89	45	20	15
30	79	e37	e46	e31	---	e57	119	121	87	44	19	14
31	75	---	e45	e30	---	e57	---	117	---	45	19	---
TOTAL	3,527	1,378	1,370	1,216	782	1,429	3,202	5,078	3,069	2,086	997	406
MEAN	114	45.9	44.2	39.2	27.9	46.1	107	164	102	67.3	32.2	13.5
MAX	182	71	49	47	30	70	193	314	139	85	54	18
MIN	75	31	38	30	27	28	57	93	82	44	19	11
CFSM	1.40	0.56	0.54	0.48	0.34	0.57	1.31	2.01	1.26	0.83	0.40	0.17
IN.	1.61	0.63	0.63	0.56	0.36	0.65	1.47	2.32	1.40	0.95	0.46	0.19

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	58.4	67.3	59.3	49.1	54.2	77.3	136	119	83.8	78.8	65.9	52.5
MAX	130	151	118	105	110	187	275	230	129	131	198	159
(WY)	(1995)	(1992)	(2002)	(1992)	(1992)	(1992)	(2002)	(2002)	(1993)	(2001)	(2001)	(1994)
MIN	6.13	8.52	8.20	7.92	12.2	26.6	44.1	36.9	54.4	46.6	8.08	4.60
(WY)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)	(1998)	(1992)	(1998)	(1998)	(1998)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1992 - 2003
ANNUAL TOTAL	35,918	24,540	
ANNUAL MEAN	98.4	67.2	75.2
HIGHEST ANNUAL MEAN			107
LOWEST ANNUAL MEAN			34.3
HIGHEST DAILY MEAN	448	314	570
LOWEST DAILY MEAN	(a)30	11	4.0
ANNUAL SEVEN-DAY MINIMUM	(a)31	12	4.0
MAXIMUM PEAK FLOW		(c)317	(d)589
MAXIMUM PEAK STAGE		3.23	3.62
INSTANTANEOUS LOW FLOW		11	3.9
ANNUAL RUNOFF (CFSM)	1.21	0.83	0.93
ANNUAL RUNOFF (INCHES)	16.43	11.23	12.57
10 PERCENT EXCEEDS	209	132	144
50 PERCENT EXCEEDS	60	49	60
90 PERCENT EXCEEDS	33	22	23

(a) Ice affected

(b) Also occurred Sept. 19-23

(c) Gage height, 3.22 ft

(d) Gage height, 3.47 ft

(e) Estimated due to ice effect or missing record

(f) Also occurred additional days

## 05358170 BUTTERNUT CREEK AT CUTOFF ROAD NEAR BUTTERNUT, WI

LOCATION.--Lat 45°59'47", long 90°03'11", in SW ¼ SE ¼ SW ¼ sec.28, T.41 N., R.1 W., Ashland County, Hydrologic Unit 07050002, on left bank downstream side of bridge on Cutoff Road.

DRAINAGE AREA.--28.9 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

GAGE.--Water-stage recorder. Side-looking velocity meter system. Elevation of gage is 1,490 ft above NGVD of 1929, 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	e20	10	6.7	e2.3	e1.6	17	37	20	12	12	4.9
2	---	e19	8.8	e6.0	e2.4	e1.6	23	33	17	12	15	6.7
3	---	e19	4.9	e5.0	e2.2	e1.6	20	29	15	13	14	6.9
4	---	e18	4.4	e4.5	e2.1	e1.7	17	25	14	13	11	3.8
5	---	e18	5.2	e4.0	e2.0	e1.7	16	27	15	8.7	11	11
6	---	e17	5.6	e3.6	e2.0	e1.7	13	38	15	8.6	9.0	6.2
7	---	e16	5.3	e3.2	e1.9	e1.7	14	43	26	7.1	7.7	5.8
8	---	e18	7.0	e3.0	e1.9	e1.6	13	40	29	7.6	7.1	3.8
9	---	e16	7.5	e2.8	e1.8	e1.7	18	57	24	4.7	6.3	2.8
10	---	e18	6.6	e3.7	e1.8	e1.6	34	101	35	5.5	5.6	1.9
11	---	e17	4.9	e3.2	e1.8	e1.8	67	222	64	9.7	5.4	0.66
12	---	e15	4.2	e2.8	e1.7	e2.1	73	608	54	11	5.9	3.9
13	---	e14	4.0	e2.5	e1.7	e2.6	61	588	35	8.5	6.0	5.6
14	---	16	6.6	e2.2	e1.7	e3.0	58	354	26	9.8	6.0	6.9
15	---	24	8.0	e2.1	e1.6	e4.0	66	219	19	10	7.6	12
16	---	12	5.2	e1.9	e1.7	e4.8	86	149	15	7.2	5.5	4.7
17	---	11	6.9	e1.8	e1.6	e6.0	88	103	13	5.6	6.9	5.1
18	---	11	9.0	e1.8	e1.8	e7.0	83	68	12	4.2	3.9	10
19	---	e10	22	e1.7	e2.4	e8.0	92	54	11	5.7	5.1	10
20	---	e13	23	e1.7	e3.2	e7.0	162	78	10	8.2	7.1	3.6
21	---	e21	18	e1.6	e2.6	e6.8	257	83	9.4	14	8.1	8.3
22	---	e18	12	e1.6	e2.4	e6.6	306	65	9.7	12	6.4	13
23	---	e17	10	e1.6	e2.2	e6.4	237	49	13	8.7	4.5	12
24	---	e14	11	e1.6	e1.9	e6.8	168	40	17	7.6	6.6	6.9
25	---	e14	7.8	e1.6	e1.8	e7.4	120	34	18	6.3	5.7	11
26	---	e13	5.1	e1.6	e1.7	e8.0	83	30	18	8.9	6.4	3.0
27	---	12	3.2	e1.5	e1.7	e8.4	63	25	18	6.5	5.2	12
28	---	8.9	3.9	e1.5	e1.6	e9.0	51	23	16	6.9	5.8	9.4
29	---	9.6	8.2	e1.5	---	e10	46	22	17	7.1	5.9	12
30	---	9.4	8.8	e1.7	---	e11	40	21	16	7.1	6.7	6.9
31	---	---	9.3	e2.0	---	12	---	22	---	8.9	5.7	---
TOTAL	---	458.9	256.4	82.0	55.5	155.2	2,392	3,287	621.1	266.1	225.1	210.76
MEAN	---	15.3	8.27	2.65	1.98	5.01	79.7	106	20.7	8.58	7.26	7.03
MAX	---	24	23	6.7	3.2	12	306	608	64	14	15	13
MIN	---	8.9	3.2	1.5	1.6	1.6	13	21	9.4	4.2	3.9	0.66
CFSM	---	0.53	0.29	0.09	0.07	0.17	2.76	3.67	0.72	0.30	0.25	0.24
IN.	---	0.59	0.33	0.11	0.07	0.20	3.08	4.23	0.80	0.34	0.29	0.27

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

MEAN	---	15.3	8.27	2.65	1.98	5.01	79.7	106	20.7	8.58	7.26	7.03
MAX	---	15.3	8.27	2.65	1.98	5.01	79.7	106	20.7	8.58	7.26	7.03
(WY)	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	---	15.3	8.27	2.65	1.98	5.01	79.7	106	20.7	8.58	7.26	7.03
(WY)	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

## SUMMARY STATISTICS

ANNUAL TOTAL  
ANNUAL MEAN  
HIGHEST DAILY MEAN  
LOWEST DAILY MEAN  
ANNUAL SEVEN-DAY MINIMUM  
ANNUAL RUNOFF (CFSM)  
ANNUAL RUNOFF (INCHES)  
10 PERCENT EXCEEDS  
50 PERCENT EXCEEDS  
90 PERCENT EXCEEDS

FOR 2003 WATER YEAR  
(NOVEMBER-SEPTEMBER)

8,010.06  
24.0  
608 May 12  
0.66 Sep 11  
(a)1.6 Jan 23  
0.83  
10.31  
52  
8.6  
1.8

(a) Ice affected

(e) Estimated due to ice effect or missing record

## 05358170 BUTTERNUT CREEK AT CUTOFF ROAD NEAR BUTTERNUT, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

PERIOD OF DAILY RECORD.--

TOTAL-PHOSPHORUS DISCHARGE: November 2002 to September 2003.

INSTRUMENTATION.--Automatic, pumping, and refrigerated water sampler.

REMARKS.--Total-phosphorus loads generally are good. For periods during which discharge records were estimated, load estimates are fair to poor.

EXTREMES FOR CURRENT PERIOD (NOVEMBER 2002 TO SEPTEMBER 2003).--

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 128 lb, May 12; minimum daily, 0.18 lb, Mar. 10.

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	2.67	1.56	1.18	0.46	0.22	6.11	8.38	3.71	4.79	3.84	1.72
2	---	2.55	1.36	1.07	0.48	0.22	8.38	7.34	3.29	4.92	4.81	2.35
3	---	2.55	0.75	0.89	0.44	0.21	7.42	6.35	2.90	5.19	4.39	2.44
4	---	2.41	0.69	0.80	0.42	0.22	6.37	5.53	2.79	5.27	3.40	1.36
5	---	2.40	0.82	0.72	0.41	0.21	5.93	5.86	2.98	3.58	3.59	3.78
6	---	2.26	0.89	0.65	0.41	0.21	4.98	8.14	3.06	3.55	2.91	2.22
7	---	2.12	0.85	0.58	0.39	0.20	5.18	9.25	5.41	2.93	2.48	2.09
8	---	2.37	1.14	0.54	0.39	0.19	4.89	8.74	6.16	3.16	2.27	1.38
9	---	2.11	1.22	0.51	0.37	0.19	7.09	12.7	5.08	1.95	2.03	1.03
10	---	2.36	1.09	0.67	0.37	0.18	13.0	21.7	8.08	2.30	1.78	0.71
11	---	2.22	0.83	0.58	0.38	0.20	24.7	54.1	16.1	4.09	1.74	0.24
12	---	1.96	0.70	0.51	0.36	0.26	25.1	128	14.5	4.56	1.87	1.43
13	---	1.87	0.67	0.46	0.36	0.36	19.9	102	10.1	3.26	1.91	2.10
14	---	2.14	1.11	0.40	0.35	0.46	17.8	60.9	7.97	3.61	1.90	2.58
15	---	3.07	1.34	0.39	0.32	0.68	19.7	33.2	6.21	3.55	2.44	4.62
16	---	1.56	0.88	0.35	0.33	0.92	23.3	20.1	5.12	2.38	1.77	1.79
17	---	1.43	1.18	0.33	0.30	1.28	25.4	15.6	4.87	1.83	2.23	1.93
18	---	1.46	1.53	0.33	0.33	1.67	23.2	10.5	4.77	1.36	1.26	3.73
19	---	1.32	3.70	0.32	0.43	2.13	30.7	8.64	4.54	1.88	1.66	3.81
20	---	1.78	3.83	0.32	0.56	2.08	74.6	13.0	4.14	2.69	2.34	1.32
21	---	2.90	3.07	0.30	0.45	2.20	109	13.6	3.75	4.68	2.67	3.03
22	---	2.52	2.13	0.30	0.40	2.16	91.2	10.6	3.86	3.77	2.12	4.81
23	---	2.40	1.78	0.30	0.36	2.11	60.1	8.08	4.96	2.84	1.51	4.44
24	---	2.00	1.83	0.31	0.30	2.27	39.5	6.74	6.75	2.50	2.20	2.47
25	---	2.01	1.36	0.31	0.28	2.49	28.5	5.88	7.20	2.05	1.92	3.94
26	---	1.83	0.89	0.31	0.26	2.71	20.3	5.15	7.32	2.91	2.18	1.08
27	---	1.78	0.56	0.29	0.25	2.87	15.5	4.40	7.13	2.12	1.78	4.23
28	---	1.32	0.69	0.29	0.23	3.11	12.3	4.04	6.35	2.24	1.99	3.31
29	---	1.43	1.44	0.29	---	3.48	10.8	4.05	6.73	2.30	2.05	4.21
30	---	1.41	1.54	0.33	---	3.86	9.40	3.91	6.59	2.29	2.31	2.31
31	---	---	1.63	0.40	---	4.27	---	4.04	---	2.88	1.97	---
TOTAL	---	62.21	43.06	15.03	10.39	43.62	750.35	610.52	182.42	97.43	73.32	76.46

## 05358170 BUTTERNUT CREEK AT CUTOFF ROAD NEAR BUTTERNUT, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Dis-charge, cfs (00060)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)
NOV 2002						
14...	1400	--	19	70	0.020	0.024
DEC						
11...	1345	--	3.9	70	0.022	0.031
JAN 2003						
15...	1600	2.1	--	70	0.024	0.034
FEB						
13...	1315	1.7	--	70	0.027	0.039
MAR						
11...	0835	1.8	--	70	0.019	0.020
21...	0700	6.8	--	70	0.021	0.060
APR						
11...	0115	--	55	50	--	0.072
11...	0615	--	60	50	0.026	0.069
14...	1455	--	55	10	--	0.056
14...	1500	--	55	50	0.029	0.058
15...	1045	--	65	50	--	0.056
16...	0445	--	82	50	--	0.053
16...	2245	--	89	50	0.021	0.047
17...	1640	--	88	10	--	0.056
17...	1645	--	90	50	--	0.058
18...	2230	--	85	50	--	0.049
20...	1030	--	154	50	--	0.087
21...	0430	--	228	50	--	0.090
21...	1615	--	274	10	--	0.076
21...	1630	--	285	50	--	0.072
22...	0700	--	319	50	--	0.056
22...	1205	--	316	10	--	0.056
22...	1235	--	311	50	0.024	0.054
23...	1300	--	228	50	--	0.046
24...	1300	--	164	50	--	0.043
25...	1300	--	118	50	--	0.044
26...	1300	--	81	50	--	0.046
MAY						
06...	1300	--	39	50	--	0.039
09...	1600	--	70	50	--	0.042
11...	0400	--	111	50	--	0.038
11...	2200	--	390	50	--	0.050
12...	1840	--	702	50	--	0.034
12...	1845	--	700	50	--	0.037
13...	0400	--	681	50	--	0.034
13...	1600	--	541	50	--	0.030
14...	1600	--	327	50	--	0.033
15...	1000	--	224	50	--	0.028
16...	1600	--	141	50	--	0.024
17...	1600	--	96	50	--	0.030
18...	0400	--	79	50	--	0.028
20...	1030	--	80	50	--	0.031
22...	0100	--	74	50	--	0.030
JUN						
11...	1415	--	66	50	--	0.047
18...	1445	--	12	50	--	0.075
23...	0945	--	22	50	--	0.073
JUL						
11...	2330	--	17	50	--	0.078
16...	1408	--	11	50	0.040	0.061
AUG						
14...	0652	--	-0.06	50	--	0.059
SEP						
16...	1745	--	4.9	50	--	0.070

05358180 SPILLER CREEK AT COUNTY HIGHWAY B NEAR BUTTERNUT, WI

LOCATION.--Lat 45°58'44", long 90°31'48", in SE ¼ NE ¼ NE ¼ sec.6, T.40 N., R.1 W., Price County, Hydrologic Unit 07050002, on right bank approximately 200 ft upstream of culvert on County Highway B, and approximately 2,000 ft upstream of Butternut Lake.

DRAINAGE AREA.--9.1 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

GAGE.--Water-stage recorder. Elevation of gage is approximately 1,495 ft above NGVD, 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	e6.5	e3.6	e1.9	e1.9	1.9	4.3	10	7.3	4.1	3.0	1.4
2	---	e6.2	e3.6	e2.0	e1.9	1.8	5.8	8.9	6.4	3.3	2.9	1.3
3	---	e5.9	e3.5	e2.1	e2.1	1.8	5.4	8.0	5.1	3.4	2.8	1.2
4	---	e5.7	e3.4	e2.2	e2.2	1.8	e7.4	7.2	4.7	3.4	3.1	1.3
5	---	e5.6	e3.4	e2.1	e2.0	1.7	e7.7	8.2	4.5	2.7	3.1	1.4
6	---	e5.3	e3.4	e2.0	e1.9	1.8	7.4	13	5.2	2.4	2.8	1.4
7	---	e5.0	e3.4	e2.0	e1.7	1.8	3.8	12	9.8	2.0	2.4	1.3
8	---	e5.0	e3.3	e2.1	e1.6	1.8	4.0	11	11	1.8	2.2	1.3
9	---	e5.0	e3.2	e2.2	e1.5	1.7	8.2	21	8.3	1.7	2.0	1.3
10	---	e5.1	e3.2	e2.1	e1.4	1.7	22	36	13	2.2	1.9	1.3
11	---	e5.1	e3.3	e2.0	e1.3	1.8	31	111	25	3.6	1.8	1.4
12	---	e5.1	e3.3	e2.0	e1.3	1.7	24	192	16	2.9	1.6	2.6
13	---	e5.1	e3.2	e1.9	e1.3	1.7	19	112	11	2.7	1.7	2.5
14	---	e5.0	e3.1	e1.9	e1.3	e1.8	18	74	7.4	2.5	1.5	2.1
15	---	4.9	e3.0	e1.9	e1.3	e2.9	19	48	6.1	2.5	1.5	2.2
16	---	4.7	e3.0	e1.9	e1.3	e5.0	31	32	5.2	2.4	1.5	1.8
17	---	4.7	e2.9	e2.0	e1.4	e7.0	31	24	4.4	2.2	1.4	1.6
18	---	4.8	e3.2	e2.0	e1.6	e7.8	29	19	3.9	2.1	1.5	1.5
19	---	4.2	e3.5	e1.9	e1.8	e8.5	41	18	3.5	2.0	1.5	2.4
20	---	4.5	e3.3	e1.9	e2.1	e9.0	92	36	3.2	2.1	1.7	2.5
21	---	4.1	e3.1	e1.8	2.1	e9.5	96	29	2.9	3.7	1.8	3.2
22	---	4.0	e2.9	e1.7	2.1	e8.7	79	20	2.6	3.8	1.6	2.2
23	---	3.9	e2.7	e1.6	2.1	e8.7	52	16	4.2	3.2	1.6	1.6
24	---	e3.8	e2.5	e1.7	1.9	e9.1	33	13	4.8	2.5	1.7	2.2
25	---	e3.8	e2.3	e1.7	1.9	8.3	24	11	7.4	2.2	1.8	1.9
26	---	e3.7	e2.1	e1.6	2.1	6.3	20	9.6	9.3	2.2	1.8	3.3
27	---	e3.6	e2.2	e1.5	1.9	5.1	17	8.7	7.1	2.0	1.8	2.9
28	---	e3.5	e2.2	e1.6	1.9	e5.5	16	8.7	5.7	1.8	1.7	2.9
29	---	e3.4	e2.1	e1.6	---	e5.2	14	8.0	5.7	1.7	1.6	2.9
30	---	e3.5	e2.0	e1.7	---	e4.4	12	8.2	5.3	1.8	1.6	2.8
31	---	---	e2.0	e1.8	---	e4.1	---	8.0	---	3.1	1.6	---
TOTAL	---	140.7	91.9	58.4	48.9	139.9	774.0	941.5	216.0	80.0	60.5	59.7
MEAN	---	4.69	2.96	1.88	1.75	4.51	25.8	30.4	7.20	2.58	1.95	1.99
MAX	---	6.5	3.6	2.2	2.2	9.5	96	192	25	4.1	3.1	3.3
MIN	---	3.4	2.0	1.5	1.3	1.7	3.8	7.2	2.6	1.7	1.4	1.2
CFSM	---	0.52	0.33	0.21	0.19	0.50	2.84	3.34	0.79	0.28	0.21	0.22
IN.	---	0.58	0.38	0.24	0.20	0.57	3.16	3.85	0.88	0.33	0.25	0.24

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

MEAN	---	4.69	2.96	1.88	1.75	4.51	25.8	30.4	7.20	2.58	1.95	1.99
MAX	---	4.69	2.96	1.88	1.75	4.51	25.8	30.4	7.20	2.58	1.95	1.99
(WY)	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	---	4.69	2.96	1.88	1.75	4.51	25.8	30.4	7.20	2.58	1.95	1.99
(WY)	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

FOR 2003 WATER YEAR  
(NOVEMBER-SEPTEMBER)

SUMMARY STATISTICS

ANNUAL TOTAL	2,611.5
ANNUAL MEAN	7.82
HIGHEST DAILY MEAN	192 May 12
LOWEST DAILY MEAN	1.2 Sep 3
ANNUAL SEVEN-DAY MINIMUM	(a)1.3 Feb 10
MAXIMUM PEAK FLOW	229 May 12
MAXIMUM PEAK STAGE	10.29 May 12
INSTANTANEOUS LOW FLOW	1.0 Aug 15
ANNUAL RUNOFF (CFSM)	0.86
ANNUAL RUNOFF (INCHES)	10.68
10 PERCENT EXCEEDS	16
50 PERCENT EXCEEDS	3.0
90 PERCENT EXCEEDS	1.6

(a) Ice affected

(e) Estimated due to ice effect or missing record

05358180 SPILLER CREEK AT COUNTY HIGHWAY B NEAR BUTTERNUT, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

PERIOD OF DAILY RECORD.--

TOTAL-PHOSPHORUS DISCHARGE: November 2002 to September 2003.

INSTRUMENTATION.--Automatic, pumping, refrigerated water sampler.

REMARKS.--Total-phosphorus loads generally good. For periods during which discharge records were estimated, load estimates are fair to poor.

EXTREMES FOR CURRENT PERIOD (NOVEMBER 2002 TO SEPTEMBER 2003).--

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 82.2 lb, May 11; minimum daily, 0.17 lb, Mar. 10 and 12.

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	0.78	0.53	0.33	0.34	0.23	1.07	2.16	0.92	1.45	0.75	0.29
2	---	0.78	0.54	0.35	0.34	0.22	1.45	1.81	0.79	1.16	0.71	0.27
3	---	0.74	0.53	0.37	0.38	0.21	1.33	1.60	0.61	1.18	0.68	0.26
4	---	0.72	0.52	0.39	0.40	0.21	1.83	1.43	0.56	1.15	0.72	0.28
5	---	0.71	0.52	0.37	0.36	0.19	1.90	1.59	0.51	0.92	0.72	0.29
6	---	0.67	0.53	0.35	0.34	0.19	1.82	2.54	0.61	0.80	0.64	0.29
7	---	0.64	0.53	0.36	0.31	0.19	0.95	2.27	1.55	0.65	0.55	0.28
8	---	0.64	0.52	0.37	0.29	0.18	0.98	1.99	1.86	0.60	0.48	0.27
9	---	0.64	0.51	0.39	0.27	0.18	2.79	5.05	1.22	0.57	0.43	0.27
10	---	0.65	0.51	0.38	0.25	0.17	15.2	8.31	2.34	0.72	0.41	0.28
11	---	0.66	0.53	0.36	0.23	0.18	16.0	82.2	8.81	1.15	0.39	0.29
12	---	0.66	0.53	0.36	0.23	0.17	9.89	59.0	6.05	0.89	0.34	0.57
13	---	0.66	0.52	0.35	0.23	0.18	7.09	21.4	3.88	0.78	0.35	0.54
14	---	0.68	0.51	0.35	0.23	0.19	6.23	12.3	2.59	0.67	0.30	0.47
15	---	0.64	0.49	0.35	0.22	0.38	6.54	7.75	2.12	0.66	0.29	0.50
16	---	0.62	0.49	0.35	0.22	0.82	16.3	4.63	1.79	0.62	0.31	0.40
17	---	0.62	0.48	0.37	0.23	1.44	10.4	3.54	1.50	0.58	0.28	0.36
18	---	0.65	0.53	0.37	0.25	2.03	9.58	2.96	1.38	0.56	0.30	0.34
19	---	0.56	0.58	0.35	0.28	2.79	15.7	2.95	1.27	0.54	0.31	0.52
20	---	0.61	0.55	0.35	0.32	3.73	40.3	7.88	1.12	0.57	0.36	0.55
21	---	0.56	0.52	0.33	0.31	4.69	26.3	5.02	1.00	0.99	0.37	0.71
22	---	0.55	0.49	0.31	0.30	4.27	18.0	3.26	0.90	1.03	0.32	0.49
23	---	0.54	0.46	0.29	0.29	4.19	11.9	2.49	1.44	0.85	0.34	0.35
24	---	0.53	0.42	0.31	0.26	4.30	7.49	1.96	1.66	0.65	0.34	0.48
25	---	0.54	0.39	0.31	0.25	3.62	5.50	1.66	2.70	0.58	0.38	0.40
26	---	0.53	0.36	0.29	0.28	2.32	4.36	1.42	3.46	0.57	0.38	0.71
27	---	0.52	0.38	0.27	0.25	1.63	3.77	1.25	2.60	0.52	0.38	0.63
28	---	0.51	0.38	0.29	0.24	1.47	3.38	1.22	2.09	0.47	0.35	0.64
29	---	0.50	0.36	0.29	---	1.30	2.88	1.09	2.04	0.44	0.33	0.63
30	---	0.52	0.35	0.31	---	1.10	2.49	1.09	1.87	0.45	0.33	0.59
31	---	---	0.35	0.33	---	1.02	---	1.05	---	0.77	0.33	---
TOTAL	---	18.63	14.91	10.55	7.90	43.79	253.42	254.87	61.24	23.54	13.17	12.95

05358180 SPILLER CREEK AT COUNTY HIGH B NEAR BUTTERNUT, WI--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Dis-charge, cfs (00060)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)
NOV 2002						
14...	0900	5.0	--	70	0.020	0.024
DEC						
12...	0935	3.3	--	70	0.024	0.030
JAN 2003						
16...	0845	1.9	--	70	0.028	0.034
FEB						
13...	1205	1.3	--	70	0.029	0.033
MAR						
11...	0920	--	2.0	70	0.017	0.018
21...	0800	9.5	--	70	0.039	0.093
APR						
10...	1845	--	35	50	--	0.159
10...	2330	--	43	50	0.049	0.131
11...	0415	--	36	50	--	0.102
11...	2200	--	29	50	--	0.079
14...	1835	--	18	10	--	0.063
14...	1838	--	18	50	0.035	0.062
16...	0330	--	21	50	--	0.068
16...	0930	--	33	50	--	0.135
16...	2045	--	38	50	0.061	0.080
17...	0330	--	35	50	--	0.061
17...	1305	--	29	10	--	0.060
18...	1745	--	30	50	--	0.061
18...	2215	--	35	50	--	0.059
19...	1145	--	39	50	--	0.052
19...	2145	--	48	50	0.044	0.093
20...	0015	--	70	50	--	0.167
20...	0145	--	84	50	0.047	0.132
20...	0530	--	90	50	--	0.083
21...	1245	--	96	50	--	0.049
21...	1355	--	95	10	--	0.047
21...	1400	--	95	50	0.029	0.047
21...	2015	--	92	50	--	0.046
22...	0230	--	87	50	--	0.045
22...	0845	--	82	50	--	0.040
22...	1450	--	76	50	0.024	0.042
22...	1455	--	76	10	--	0.039
23...	0045	--	65	50	--	0.046
23...	1045	--	53	50	--	0.040
23...	2045	--	42	50	--	0.043
MAY						
09...	1915	--	32	50	--	0.052
10...	0845	--	39	50	--	0.042
11...	0245	--	31	50	--	0.039
11...	0800	--	56	50	--	0.249
11...	1000	--	96	50	--	0.205
12...	1610	--	181	50	0.030	0.039
13...	0800	--	122	50	--	0.037
13...	1915	--	95	50	--	0.032
14...	2215	--	63	50	--	0.030
15...	0715	--	52	50	--	0.031
16...	0245	--	35	50	--	0.027
20...	0700	--	35	50	--	0.045
21...	1115	--	29	50	--	0.031
JUN						
18...	1230	--	4.0	50	--	0.063
18...	1235	--	4.0	10	--	0.068
JUL						
11...	1230	--	3.7	50	--	0.059
15...	1303	--	2.6	50	0.038	0.048
21...	1515	--	3.5	50	--	0.050
AUG						
01...	0845	--	2.8	50	--	0.046
14...	0900	--	1.4	50	--	0.037
SEP						
16...	1555	--	1.7	50	--	0.041

## 05358190 BUTTERNUT CREEK AT COUNTY HIGHWAY B NEAR PARK FALLS, WI

LOCATION.--Lat 45°56'20", long 90°32'18", in SE ¼ SW ¼ SE ¼ sec.18, T.40 N., R.1 W., Price County, Hydrologic Unit 07050002, on right bank approximately 20 ft downstream of bridge on County Highway B, and approximately 1,000 ft downstream of Butternut Lake.

DRAINAGE AREA.--47.6 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

GAGE.--Water-stage recorder. Elevation of gage is approximately 1,490 ft above NGVD, from topographic map.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	42	23	20	10	11	36	78	40	25	7.5	3.1
2	---	41	23	19	10	11	37	68	37	23	8.1	2.6
3	---	39	22	18	12	11	38	60	34	24	7.6	2.3
4	---	37	e21	17	13	11	37	54	31	23	8.1	1.8
5	---	36	e19	17	13	11	36	54	29	21	7.5	1.8
6	---	35	e19	17	13	11	33	55	29	20	7.3	1.7
7	---	32	e19	16	13	12	32	56	33	18	7.5	1.7
8	---	33	e18	16	13	12	29	57	35	17	6.9	1.6
9	---	32	e19	16	13	12	28	64	35	15	6.8	1.5
10	---	35	e20	16	13	12	32	80	41	16	6.8	1.6
11	---	35	e19	15	12	12	45	155	50	17	6.8	1.4
12	---	35	19	15	12	12	57	376	55	16	5.9	1.8
13	---	35	19	14	12	12	64	563	55	15	5.5	2.1
14	---	34	19	14	12	12	69	531	52	15	5.4	2.9
15	---	34	19	13	12	13	75	418	45	15	5.7	3.6
16	---	33	19	13	12	16	94	315	40	15	6.1	4.4
17	---	31	19	12	11	25	114	237	36	15	5.3	3.2
18	61	29	21	12	11	35	117	182	33	13	4.8	2.0
19	58	29	27	12	11	40	122	147	28	12	5.2	4.1
20	55	28	30	12	11	45	170	133	24	12	5.8	4.4
21	57	28	31	12	12	48	242	119	21	14	6.5	4.3
22	57	27	30	11	12	48	303	109	19	13	6.1	5.4
23	52	26	29	11	11	47	312	97	21	12	5.2	6.0
24	50	26	28	11	11	48	276	85	23	11	5.0	5.8
25	48	25	27	11	11	50	229	74	26	10	5.1	5.6
26	48	24	25	10	11	50	182	65	29	11	4.5	5.8
27	47	23	24	10	11	50	145	57	30	11	3.5	8.0
28	47	23	23	11	11	53	122	54	28	9.6	3.4	9.5
29	47	23	22	10	---	48	101	48	28	8.4	3.7	9.9
30	46	23	21	9.9	---	42	87	47	27	7.8	3.1	11
31	44	---	20	10	---	38	---	45	---	7.6	3.0	---
TOTAL	717	933	694	420.9	329	858	3,264	4,483	1,014	462.4	179.7	120.9
MEAN	51.2	31.1	22.4	13.6	11.8	27.7	109	145	33.8	14.9	5.80	4.03
MAX	61	42	31	20	13	53	312	563	55	25	8.1	11
MIN	44	23	18	9.9	10	11	28	45	19	7.6	3.0	1.4
CFSM	1.08	0.65	0.47	0.29	0.25	0.58	2.29	3.04	0.71	0.31	0.12	0.08
IN.	0.56	0.73	0.54	0.33	0.26	0.67	2.55	3.50	0.79	0.36	0.14	0.09

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

MEAN	51.2	31.1	22.4	13.6	11.8	27.7	109	145	33.8	14.9	5.80	4.03
MAX	51.2	31.1	22.4	13.6	11.8	27.7	109	145	33.8	14.9	5.80	4.03
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	51.2	31.1	22.4	13.6	11.8	27.7	109	145	33.8	14.9	5.80	4.03
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

## SUMMARY STATISTICS

## FOR 2003 WATER YEAR

ANNUAL TOTAL	13,475.9
ANNUAL MEAN	38.7
HIGHEST DAILY MEAN	563 May 13
LOWEST DAILY MEAN	1.4 Sep 11
ANNUAL SEVEN-DAY MINIMUM	1.6 Sep 5
MAXIMUM PEAK FLOW	631 May 13
MAXIMUM PEAK STAGE	6.41 May 13
INSTANTANEOUS LOW FLOW	1.0 Sep 12
ANNUAL RUNOFF (CFSM)	0.81
ANNUAL RUNOFF (INCHES)	10.53
10 PERCENT EXCEEDS	68
50 PERCENT EXCEEDS	20
90 PERCENT EXCEEDS	5.4

(e) Estimated due to ice effect or missing record



05358190 BUTTERNUT CREEK AT COUNTY HIGHWAY B NEAR PARK FALLS, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

PERIOD OF DAILY RECORD.--

TOTAL-PHOSPHORUS DISCHARGE: November 2002 to September 2003.

REMARKS.--Water sampled manually. Total-phosphorus loads generally good. For periods during which discharge records were estimated, load estimates are fair to poor.

EXTREMES FOR CURRENT PERIOD (NOVEMBER 2002 TO SEPTEMBER 2003).--

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 128 lb, May 13; minimum daily, 0.30 lb, Sept. 11.

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	8.11	5.08	4.42	2.07	2.05	8.37	19.0	7.77	4.44	1.88	0.74
2	---	8.26	5.08	4.17	2.11	2.07	8.52	16.5	7.18	4.10	2.07	0.61
3	---	7.82	4.93	3.96	2.54	2.09	8.76	14.5	6.60	4.30	1.97	0.52
4	---	7.48	4.80	3.81	2.60	2.14	8.68	13.1	6.02	4.09	2.13	0.41
5	---	7.26	4.35	3.77	2.58	2.13	8.42	12.9	5.44	3.84	2.03	0.41
6	---	7.03	4.37	3.61	2.62	2.11	7.87	13.0	5.55	3.55	2.00	0.38
7	---	6.51	4.40	3.53	2.58	2.16	7.50	13.3	6.26	3.28	2.09	0.36
8	---	6.63	4.20	3.49	2.60	2.29	6.87	13.5	6.48	3.02	1.98	0.35
9	---	6.50	4.46	3.49	2.56	2.25	6.63	15.0	6.40	2.75	1.96	0.32
10	---	6.98	4.72	3.35	2.54	2.20	7.62	18.5	7.44	2.84	2.00	0.34
11	---	7.04	4.47	3.29	2.50	2.20	10.7	35.7	9.03	3.04	2.05	0.30
12	---	6.96	4.43	3.18	2.45	2.22	13.7	85.8	9.85	2.93	1.81	0.37
13	---	7.01	4.40	3.05	2.41	2.22	15.5	128	9.87	2.79	1.69	0.42
14	---	6.84	4.36	2.91	2.39	2.34	16.7	120	9.14	2.67	1.62	0.57
15	---	6.89	4.43	2.78	2.35	2.48	18.2	93.4	7.97	2.83	1.69	0.71
16	---	6.74	4.44	2.69	2.28	3.13	21.9	69.9	6.90	2.74	1.78	0.86
17	---	6.35	4.36	2.55	2.24	5.17	25.5	52.1	6.17	2.81	1.55	0.61
18	---	6.04	4.95	2.60	2.24	7.31	25.6	39.7	5.67	2.60	1.38	0.39
19	---	6.02	6.27	2.53	2.23	8.56	27.8	32.0	4.86	2.39	1.47	0.81
20	---	5.91	6.93	2.49	2.24	9.75	40.6	28.5	4.18	2.46	1.61	0.85
21	---	5.83	7.06	2.42	2.30	10.6	60.3	25.5	3.66	2.90	1.77	0.83
22	---	5.70	6.94	2.35	2.30	10.6	78.3	23.0	3.27	2.81	1.64	1.06
23	---	5.58	6.69	2.27	2.22	10.4	80.2	20.4	3.75	2.62	1.40	1.17
24	---	5.44	6.38	2.18	2.19	10.8	70.5	17.7	4.11	2.47	1.31	1.13
25	---	5.37	6.01	2.19	2.15	11.2	58.3	15.3	4.61	2.24	1.32	1.09
26	---	5.28	5.71	2.13	2.04	11.3	46.0	13.3	5.10	2.42	1.17	1.13
27	---	5.08	5.40	2.13	2.04	11.2	36.5	11.6	5.21	2.55	0.90	1.56
28	---	5.09	5.19	2.17	2.04	12.1	30.4	10.8	5.00	2.22	0.85	1.85
29	---	5.05	4.84	2.06	---	11.0	25.0	9.60	4.91	1.99	0.93	1.92
30	---	5.10	4.66	2.03	---	9.68	21.4	9.40	4.72	1.88	0.76	2.02
31	---	---	4.53	2.07	---	8.75	---	8.87	---	1.86	0.71	---
TOTAL	---	191.90	158.84	89.67	65.41	184.50	802.34	999.87	183.12	89.43	49.52	24.09

05358190 BUTTERNUT CREEK AT COUNTY HIGHWAY B NEAR PARK FALLS, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Dis-charge, cfs (00060)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)
NOV 2002						
14...	1240	--	34	70	--	0.037
DEC						
11...	1050	19	--	70	0.038	0.044
JAN 2003						
15...	1025	--	13	70	--	0.039
FEB						
13...	0925	--	12	70	--	0.037
MAR						
11...	1000	--	12	70	--	0.034
21...	1000	--	47	70	--	0.041
APR						
15...	0900	--	75	10	--	0.045
18...	0935	--	115	10	--	0.040
22...	0830	--	298	10	--	0.048
MAY						
13...	1625	--	582	10	--	0.042
JUN						
17...	1650	--	35	10	--	0.032
JUL						
15...	1305	--	17	10	--	0.034
AUG						
12...	1925	--	5.6	10	--	0.057
SEP						
16...	1635	--	4.4	10	--	0.036

## 05360500 FLAMBEAU RIVER NEAR BRUCE, WI

LOCATION.--Lat 45°22'21", long 91°12'34", in Lot 7 of SE 1/4 NW 1/4 sec.2, T.33 N., R.7 W., Rusk County, Hydrologic Unit 07050002, on right bank 2.5 mi downstream from Thornapple Powerplant, 6.0 mi upstream from mouth, and 7.0 mi southeast of Bruce.

DRAINAGE AREA.--1,860 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1951 to current year.

REVISED RECORDS.--WDR WI-78-1: 1971. WDR WI-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,056.34 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow regulated by several powerplants above station and by Rest Lake and Flambeau Flowage Reservoirs. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,140	2,530	1,150	e1,100	e670	e700	1,110	2,730	2,400	1,280	790	564
2	2,580	2,470	1,250	e1,000	e680	e690	1,180	2,700	2,000	1,170	711	577
3	2,640	2,250	1,010	e1,100	e820	e670	1,570	2,400	2,190	1,070	855	600
4	2,660	1,420	1,060	e1,000	e840	e690	1,480	1,910	1,850	1,130	916	549
5	4,140	1,350	1,330	e980	e800	e730	1,190	2,520	1,560	1,070	833	552
6	7,560	1,440	1,220	e1,100	e740	e800	1,100	2,800	1,560	966	1,110	538
7	8,430	2,140	1,300	e1,200	e750	e700	1,080	2,800	1,670	1,070	1,020	563
8	8,770	1,760	e1,500	e1,100	e700	e700	1,090	2,490	1,870	859	812	509
9	7,740	1,320	e1,300	e980	e740	e780	1,010	3,070	1,890	734	659	498
10	6,160	1,420	e1,200	e980	e780	e780	1,010	3,950	2,170	802	702	463
11	4,960	1,980	1,360	e960	e790	e960	897	7,190	2,890	1,150	796	472
12	4,750	1,860	1,230	e880	e780	e860	1,430	13,500	3,140	984	575	555
13	4,540	1,200	1,300	e860	e720	e720	1,510	16,000	2,500	1,030	545	524
14	4,400	1,890	1,410	e850	e760	e790	1,600	14,700	2,620	956	620	558
15	3,280	1,550	1,130	e840	e800	e880	1,630	9,690	2,250	961	680	519
16	4,040	1,480	1,110	e830	e780	e940	3,680	6,560	1,510	807	824	489
17	3,080	1,510	1,040	e880	e700	e960	5,560	6,440	1,900	832	681	496
18	3,680	1,540	1,210	e940	e720	e1,400	6,310	6,660	1,410	844	680	515
19	2,830	1,370	1,590	e900	e760	e1,800	6,020	5,420	1,710	771	550	813
20	3,100	1,200	1,630	e890	e820	e2,000	6,080	5,650	1,460	872	719	578
21	3,550	1,740	1,280	e830	e820	e1,600	8,940	5,040	1,040	1,020	472	583
22	3,240	1,290	1,170	e880	e760	e1,500	9,230	4,710	817	677	594	609
23	2,610	1,180	1,180	e900	e770	e1,400	7,830	4,010	1,020	862	682	549
24	2,660	1,560	e1,200	e920	e800	1,380	6,660	3,790	1,100	895	532	487
25	2,780	1,560	e1,200	e920	e640	1,480	5,700	3,060	1,460	827	540	688
26	2,730	1,170	e1,100	e870	e670	1,440	4,370	3,060	1,570	806	707	505
27	2,720	1,250	e1,100	e700	e700	1,830	4,400	3,350	1,400	799	595	497
28	2,870	1,330	e1,100	e830	e700	1,710	4,240	2,580	1,290	780	582	544
29	3,220	1,320	e1,200	e870	---	1,430	4,070	2,280	1,260	794	615	563
30	2,490	1,430	e1,200	e880	---	1,330	3,410	2,220	1,380	841	542	676
31	2,700	---	e1,100	e850	---	1,080	---	2,450	---	909	560	---
TOTAL	123,050	47,510	38,160	28,820	21,010	34,730	105,387	155,730	52,887	28,568	21,499	16,633
MEAN	3,969	1,584	1,231	930	750	1,120	3,513	5,024	1,763	922	694	554
MAX	8,770	2,530	1,630	1,200	840	2,000	9,230	16,000	3,140	1,280	1,110	813
MIN	2,140	1,170	1,010	700	640	670	897	1,910	817	677	472	463

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2003, BY WATER YEAR (WY)

MEAN	1,754	1,636	1,287	1,129	1,141	1,686	3,683	2,655	2,035	1,626	1,451	1,777
MAX	5,616	4,404	2,542	2,006	2,411	5,490	7,379	6,082	6,066	4,339	3,765	5,089
(WY)	(1986)	(1992)	(1992)	(1973)	(1969)	(1973)	(2002)	(1954)	(1968)	(1968)	(1972)	(1994)
MIN	363	430	382	451	474	971	1,013	758	572	596	553	420
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(1959)	(1990)	(1987)	(1988)	(1988)	(1998)	(1998)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1951 - 2003

ANNUAL TOTAL	909,075	673,984	
ANNUAL MEAN	2,491	1,847	1,819
HIGHEST ANNUAL MEAN			2,900
LOWEST ANNUAL MEAN			993
HIGHEST DAILY MEAN	16,900	Apr 15	23,200
LOWEST DAILY MEAN	855	Jul 7	(a)190
ANNUAL SEVEN-DAY MINIMUM	(a)1,020	Feb 11	309
MAXIMUM PEAK FLOW			17,400
MAXIMUM PEAK STAGE			10.39
10 PERCENT EXCEEDS	5,050		4,020
50 PERCENT EXCEEDS	1,500		1,110
90 PERCENT EXCEEDS	1,100		598
			743

(a) Ice affected

(e) Estimated due to ice effect or missing record

## 05362000 JUMP RIVER AT SHELDON, WI

LOCATION.--Lat 45°18'29", long 90°57'23", in SE ¼ SW ¼ sec.26, T.33 N., R.5 W., Rusk County, Hydrologic Unit 07050004, on right bank just downstream from highway bridge in Sheldon, 1,500 ft upstream from Shoulder Creek and 11 mi upstream from mouth.

DRAINAGE AREA.--576 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1915 to current year.

REVISED RECORDS.--WSP 975: 1938. WSP 1438: 1916-17(M), 1919(M), 1920, 1921(M), 1922, 1923-26(M), 1927, 1928-31(M), 1932, 1933-37(M), 1945-46(M), 1948-50(M). WDR WI-81-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,092.75 ft above NGVD of 1929. Prior to Feb. 9, 1939, Sept. 1, 1941, to Apr. 1, 1953, and Feb. 18, 1954, to Sept. 27, 1964, nonrecording gage at same site and datum. Apr. 2, 1953, to Feb. 18, 1954, nonrecording gage in creamery wellhouse 400 ft upstream at same datum. Feb. 9, 1939, to Aug. 31, 1941, and from Sept. 27, 1964, water-stage recorder at present site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,590	543	e180	e100	e50	e63	856	720	e260	298	129	42
2	1,910	484	e170	e100	e51	e62	1,180	646	e270	231	157	40
3	1,600	448	e160	e90	e50	e61	1,190	578	e260	201	141	39
4	1,990	423	e150	e90	e48	e60	e730	498	e250	214	140	39
5	4,230	402	e150	e92	e46	e60	e540	483	229	240	138	39
6	6,500	388	e160	e96	e44	e62	e500	985	217	228	126	37
7	8,070	374	e160	e100	e44	e66	e470	1,310	241	194	124	37
8	6,100	354	e150	e100	e43	e64	416	1,140	353	165	119	37
9	4,300	354	e150	e96	e43	e64	401	1,350	579	142	102	37
10	3,150	359	e140	e80	e43	e68	416	2,540	938	135	90	37
11	2,310	398	e140	e70	e43	e74	467	5,940	2,000	137	80	36
12	1,710	397	e140	e60	e43	e77	514	11,200	2,070	152	73	39
13	1,460	376	e160	e50	e44	e80	522	8,110	1,440	163	70	44
14	1,270	e360	e150	e47	e44	e90	518	4,540	932	145	64	48
15	1,030	e310	e150	e45	e44	e110	613	2,640	647	136	61	51
16	851	e290	e140	e45	e44	e300	3,520	1,760	492	127	56	52
17	731	e270	e140	e45	e44	e1,200	6,520	1,270	392	120	53	50
18	643	e270	e150	e45	e47	e1,400	5,490	1,020	323	109	49	47
19	663	e280	e160	e44	e50	e1,000	4,510	863	263	100	46	58
20	695	e230	e150	e44	e54	e700	6,050	898	222	98	44	56
21	648	e230	e140	e44	e55	e600	6,390	910	190	100	42	53
22	639	e230	e140	e43	e54	e670	5,180	773	169	94	42	51
23	641	e220	e130	e43	e53	e780	3,580	650	163	85	45	52
24	628	e210	e120	e44	e52	e900	2,440	547	188	80	49	57
25	654	e180	e110	e45	e50	e850	1,800	462	303	76	48	56
26	833	e140	e110	e46	e52	e700	1,410	382	343	74	48	57
27	969	e170	e110	e47	e54	e52	1,150	329	304	69	48	61
28	896	e200	e110	e48	e60	696	1,020	296	274	65	48	62
29	779	e200	e120	e49	---	727	906	267	299	62	47	67
30	707	e180	e120	e50	---	754	801	244	351	70	45	73
31	612	---	e110	e50	---	761	---	253	---	89	42	---
TOTAL	58,809	9,270	4,370	1,948	1,349	13,751	60,100	53,604	14,962	4,199	2,366	1,454
MEAN	1,897	309	141	62.8	48.2	444	2,003	1,729	499	135	76.3	48.5
MAX	8,070	543	180	100	60	1,400	6,520	11,200	2,070	298	157	73
MIN	612	140	110	43	43	60	401	244	163	62	42	36
CFSM	3.29	0.54	0.24	0.11	0.08	0.77	3.48	3.00	0.87	0.24	0.13	0.08
IN.	3.80	0.60	0.28	0.13	0.09	0.89	3.88	3.46	0.97	0.27	0.15	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2003, BY WATER YEAR (WY)

MEAN	427	432	184	103	105	727	1,842	862	658	267	243	446
MAX	1,897	2,022	1,092	392	620	3,184	4,126	2,514	3,442	1,293	1,916	4,145
(WY)	(2003)	(1992)	(1992)	(1946)	(1984)	(1973)	(1982)	(1973)	(1943)	(1968)	(1941)	(1941)
MIN	27.5	35.3	34.7	25.6	21.4	61.2	360	134	54.6	17.5	21.9	25.4
(WY)	(1949)	(1977)	(1934)	(1917)	(1924)	(1940)	(1946)	(1987)	(1934)	(1936)	(1933)	(1976)

## 05362000 JUMP RIVER AT SHELDON, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1915 - 2003	
ANNUAL TOTAL	312,105		226,182			
ANNUAL MEAN	855		620		523	
HIGHEST ANNUAL MEAN					923	
LOWEST ANNUAL MEAN					214	
HIGHEST DAILY MEAN	14,400	Apr 12	11,200	May 12	40,800	Aug 31, 1941
LOWEST DAILY MEAN	110	(a)Aug 11	36	Sep 11	(b)11	Dec 18, 1943
ANNUAL SEVEN-DAY MINIMUM	(c)113	Dec 25	37	Sep 5	14	(d)Jan 25, 1924
MAXIMUM PEAK FLOW			11,800	May 12	(f)46,000	Aug 31, 1941
MAXIMUM PEAK STAGE			11.50	May 12	(g)18.80	Aug 31, 1941
INSTANTANEOUS LOW FLOW			35	Sep 10-12	(b)11	Dec 18, 1943
ANNUAL RUNOFF (CFSM)	1.48		1.08		0.91	
ANNUAL RUNOFF (INCHES)	20.16		14.61		12.34	
10 PERCENT EXCEEDS	1,950		1,330		1,300	
50 PERCENT EXCEEDS	320		160		160	
90 PERCENT EXCEEDS	120		45		47	

(a) Also occurred several days during periods of ice effect, estimated

(b) Result of freezeup

(c) Ice affected (d) Jan. 25, 1924, ice-affected, also occurred July 11, 1936

(e) Estimated due to ice effect or missing record

(f) From rating curve extended above 13,000 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow

(g) From floodmark

05365500 CHIPPEWA RIVER AT CHIPPEWA FALLS, WI

LOCATION.--Lat 44°55'37", long 91°24'33", in Lot 1, NE ¼ NE ¼ sec.12, T.28 N., R.9 W., Chippewa County, Hydrologic Unit 07050005, on right bank at Chippewa Falls, 1.0 mi downstream from Duncan Creek.

DRAINAGE AREA.--5,650 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1888 to September 1983, October 1986 to current year. Monthly discharge for some periods published in WSP 1308.

REVISED RECORDS.--WSP 785: 1934(M). WSP 1508: 1897, 1905, 1918(M), 1924(M). WDR WI-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 798.46 ft above NGVD of 1929. Prior to January 1914, nonrecording gage, and January 1914 to June 19, 1932, water-stage recorder at site 1 mi upstream at different datum. June 19, 1932, to current year, water-stage recorder at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Considerable regulation by Moose Lake, Lake Chippewa, Rest Lake, Flambeau Flowage, and Lake Wissota Reservoirs. Diurnal fluctuation caused by hydroelectric plant 1.1 mi upstream. Gage-height telemeter at station.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--A stage of 26.94 ft occurred Sept. 10, 1884, site and datum in use June 1932.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,870	5,770	3,350	3,030	1,360	1,550	5,450	8,770	5,000	5,200	2,500	1,360
2	9,120	6,540	2,790	2,440	1,430	1,370	6,110	7,570	5,210	4,450	2,530	1,370
3	9,510	6,400	2,560	2,510	2,720	e1,400	8,210	7,170	4,690	3,900	2,160	1,320
4	9,610	5,170	2,050	2,750	2,180	e1,300	7,450	5,770	4,510	4,420	1,800	1,250
5	14,700	5,140	3,450	2,840	1,820	e1,300	4,550	7,720	4,940	3,100	2,110	1,190
6	30,200	4,930	3,620	3,210	e1,700	e1,500	4,370	8,880	4,370	2,580	2,280	1,170
7	36,500	5,060	3,570	3,910	e1,400	e1,700	4,390	10,600	5,240	2,860	2,460	1,210
8	36,200	6,210	2,960	4,160	e1,300	e1,600	4,410	10,900	5,900	3,010	2,620	1,200
9	31,900	5,860	3,180	3,910	e1,300	e1,600	4,430	9,860	6,360	2,690	2,010	1,200
10	25,600	4,130	2,020	3,220	e1,400	1,570	3,570	13,900	8,130	2,190	1,810	1,200
11	20,100	5,010	1,590	2,140	e1,500	1,710	3,480	28,100	9,690	2,510	1,790	1,190
12	17,000	4,720	3,860	2,000	e1,700	1,950	3,950	48,200	10,900	2,520	1,780	1,210
13	16,900	5,900	3,100	1,780	e1,700	1,320	5,050	53,900	10,900	3,050	1,700	1,210
14	14,100	4,890	4,610	2,030	e1,300	1,990	5,250	47,100	7,790	2,970	1,620	1,200
15	10,700	4,790	3,740	2,070	e1,400	2,500	6,050	35,800	6,950	4,170	1,500	1,190
16	9,470	4,200	3,420	1,400	1,660	5,160	15,400	25,100	5,090	3,420	1,360	1,190
17	9,550	4,270	3,460	e1,500	1,760	10,400	33,100	19,300	4,550	2,390	1,170	1,230
18	9,540	3,920	3,420	e1,600	1,780	9,860	34,400	16,800	5,220	2,380	1,180	1,220
19	9,480	4,080	4,370	e1,700	1,770	9,500	30,200	16,900	4,660	2,020	1,180	3,060
20	9,520	4,370	5,010	e1,700	1,610	9,430	26,700	16,600	3,260	1,950	1,180	2,430
21	9,150	3,930	4,120	e1,600	1,460	9,020	31,700	16,600	3,320	2,860	1,170	1,560
22	8,860	3,990	4,250	e1,600	e1,600	6,150	34,200	15,700	3,800	2,350	1,170	1,500
23	8,340	4,130	2,770	e1,600	e1,700	7,640	27,900	9,480	3,750	2,200	1,160	1,570
24	7,950	3,520	3,000	e1,700	e1,500	7,130	22,400	9,380	4,100	2,140	1,260	1,590
25	7,270	3,580	3,050	e1,900	e1,600	6,910	14,800	9,390	6,020	1,980	1,480	1,590
26	9,000	4,130	3,490	e1,900	1,800	6,330	12,800	7,170	5,610	2,430	1,320	1,520
27	8,750	3,400	3,030	e1,900	1,550	6,350	12,700	7,530	5,750	1,770	1,320	1,480
28	8,610	3,250	2,760	2,030	1,700	7,870	12,700	6,490	6,300	1,760	1,330	1,590
29	7,790	3,940	3,360	2,020	---	8,450	11,300	4,960	5,040	1,700	1,350	1,480
30	7,770	3,800	3,620	1,750	---	6,380	10,300	5,430	4,860	1,700	1,360	1,460
31	7,580	---	3,360	1,990	---	6,370	---	5,290	---	1,940	1,350	---
TOTAL	427,640	139,030	102,940	69,890	45,700	147,310	407,320	496,360	171,910	84,610	51,010	42,940
MEAN	13,790	4,634	3,321	2,255	1,632	4,752	13,580	16,010	5,730	2,729	1,645	1,431
MAX	36,500	6,540	5,010	4,160	2,720	10,400	34,400	53,900	10,900	5,200	2,620	3,060
MIN	6,870	3,250	1,590	1,400	1,300	1,300	3,480	4,960	3,260	1,700	1,160	1,170

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1888 - 2003, BY WATER YEAR (WY)

MEAN	4,269	4,201	3,013	2,587	2,645	5,351	11,835	8,613	6,861	4,321	3,413	4,430
MAX	15,570	15,990	7,897	5,305	6,569	17,630	28,900	22,700	30,570	13,620	9,805	23,030
(WY)	(1901)	(1992)	(1992)	(1973)	(1969)	(1973)	(1916)	(1903)	(1943)	(1968)	(1900)	(1941)
MIN	798	800	950	831	800	1,210	2,210	1,688	1,162	1,172	1,124	929
(WY)	(1977)	(1890)	(1893)	(1917)	(1895)	(1890)	(1895)	(1987)	(1988)	(1988)	(1894)	(1976)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1888 - 2003	
ANNUAL TOTAL	2,922,550		2,186,660			
ANNUAL MEAN	8,007		5,991		5,125	
HIGHEST ANNUAL MEAN					8,833	
LOWEST ANNUAL MEAN					2,453	
HIGHEST DAILY MEAN	60,500	Apr 13	53,900	May 13	95,500	Sep 1, 1941
LOWEST DAILY MEAN	1,590	Dec 11	1,160	Aug 23	40	Feb 4, 1917
ANNUAL SEVEN-DAY MINIMUM	2,460	Feb 4	1,170	Aug 17	308	Jan 29, 1917
MAXIMUM PEAK FLOW			54,500	May 13	102,000	Sep 1, 1941
MAXIMUM PEAK STAGE			18.79	May 13	24.80	Sep 1, 1941
10 PERCENT EXCEEDS	17,400		11,900		9,880	
50 PERCENT EXCEEDS	4,930		3,480		3,480	
90 PERCENT EXCEEDS	2,780		1,360		1,360	

(e) Estimated due to ice effect or missing record

## 05365707 NORTH FORK EAU CLAIRE RIVER NEAR THORP, WI

LOCATION.--Lat 44°58'25", long 90°50'57", in NW ¼ sec.27, T.29 N., R.4 W., Clark County, Hydrologic Unit 07050006, on left bank 15 ft downstream from town road, 0.3 mi downstream from Goggle-Eye Creek, and 2.6 mi northwest of Thorp.

DRAINAGE AREA.--51.0 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,115 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	36	e8.0	e3.0	e0.80	e0.70	59	31	9.9	7.2	1.9	0.28
2	103	33	e6.0	e2.4	e0.80	e0.60	55	27	8.6	5.5	4.5	0.26
3	67	29	e5.3	e1.9	e0.68	e0.60	45	24	7.7	6.3	5.2	0.20
4	576	27	e5.6	e3.0	e0.60	e0.60	e28	21	6.8	9.0	3.2	0.22
5	348	27	e6.0	e4.0	e0.50	e0.60	e23	58	5.9	7.6	2.4	0.21
6	696	28	e6.4	e4.0	e0.46	e0.64	e18	91	6.1	5.0	1.9	0.22
7	507	27	e6.6	e5.0	e0.40	e0.70	e20	68	11	7.6	1.9	0.21
8	358	27	e6.6	e5.0	e0.44	e0.70	e19	53	25	7.6	2.5	0.19
9	186	26	e7.0	e4.0	e0.42	e0.60	e25	155	48	5.1	1.9	0.16
10	147	26	e7.8	e2.3	e0.42	e0.80	31	168	68	4.5	1.7	0.14
11	120	24	e8.0	e1.0	e0.42	e5.0	35	1,180	108	5.8	1.8	0.12
12	106	21	e7.6	e0.80	e0.44	e13	37	889	67	5.4	1.4	0.81
13	103	20	e7.0	e0.70	e0.46	e30	36	379	39	3.8	1.4	1.3
14	72	19	e6.8	e0.65	e0.50	e70	37	130	26	3.1	1.1	0.79
15	57	e17	e6.0	e0.60	e0.54	e200	46	82	18	13	0.91	0.88
16	47	e14	e6.0	e0.58	e0.60	e280	1,040	61	12	7.5	0.69	0.86
17	41	e12	e6.0	e0.58	e0.65	e250	926	48	9.7	4.7	0.51	0.72
18	40	e12	e7.0	e0.57	e0.72	e230	611	40	7.4	3.4	0.41	0.54
19	46	e13	e10	e0.54	e0.80	e210	385	35	5.8	2.6	0.35	2.2
20	41	e13	e9.0	e0.52	e0.90	e160	766	48	4.7	2.1	1.0	1.6
21	41	e12	e8.0	e0.48	e0.70	e130	470	40	3.9	2.6	0.98	1.3
22	54	e11	e4.0	e0.45	e0.58	e110	260	31	3.4	1.8	0.63	1.4
23	66	e10	e3.2	e0.40	e0.50	e80	135	27	5.5	1.5	0.53	1.2
24	65	e9.0	e2.8	e0.46	e0.43	e56	92	23	19	1.2	0.51	1.1
25	94	e8.5	e3.3	e0.52	e0.40	e40	72	19	17	1.1	0.48	0.94
26	140	e8.0	e3.5	e0.54	e0.44	e20	59	17	11	1.1	0.45	1.0
27	105	e7.9	e3.7	e0.50	e0.56	e50	52	15	9.1	1.0	0.35	1.3
28	75	e7.0	e4.0	e0.60	e0.70	e220	46	14	9.9	1.0	0.33	1.5
29	58	e7.4	e4.3	e0.70	---	e160	38	13	14	0.92	0.34	1.5
30	49	e9.0	e4.3	e0.75	---	e110	34	13	10	0.86	0.31	1.5
31	42	---	e4.0	e0.80	---	e66	---	12	---	0.94	0.28	---
TOTAL	4,627	540.8	183.8	47.34	15.86	2,496.54	5,500	3,812	597.4	130.82	41.86	24.65
MEAN	149	18.0	5.93	1.53	0.57	80.5	183	123	19.9	4.22	1.35	0.82
MAX	696	36	10	5.0	0.90	280	1,040	1,180	108	13	5.2	2.2
MIN	40	7.0	2.8	0.40	0.40	0.60	18	12	3.4	0.86	0.28	0.12
CFSM	2.93	0.35	0.12	0.03	0.01	1.58	3.59	2.41	0.39	0.08	0.03	0.02
IN.	3.37	0.39	0.13	0.03	0.01	1.82	4.01	2.78	0.44	0.10	0.03	0.02

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2003, BY WATER YEAR (WY)

MEAN	31.0	42.7	15.0	5.54	12.9	97.0	133	57.0	70.3	20.2	46.1	45.8
MAX	149	262	79.7	31.4	86.6	181	332	184	338	49.4	172	420
(WY)	(2003)	(1992)	(1992)	(1997)	(1998)	(1989)	(2001)	(1993)	(1993)	(1986)	(2002)	(1986)
MIN	2.17	3.57	0.56	0.28	0.45	9.95	25.9	5.29	1.34	0.31	0.37	0.81
(WY)	(1990)	(1990)	(1990)	(1990)	(1990)	(1996)	(1987)	(1987)	(1988)	(1988)	(1988)	(1988)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1986 - 2003

ANNUAL TOTAL	29,920.2	18,018.07	
ANNUAL MEAN	82.0	49.4	46.4
HIGHEST ANNUAL MEAN			93.0
LOWEST ANNUAL MEAN			23.0
HIGHEST DAILY MEAN	1,100	Apr 12	3,670
LOWEST DAILY MEAN	(a)2.8	Dec 24	0.03
ANNUAL SEVEN-DAY MINIMUM	(a)3.5	Dec 22	0.07
MAXIMUM PEAK FLOW		1,970	(b)9,050
MAXIMUM PEAK STAGE		7.07	10.13
INSTANTANEOUS LOW FLOW		0.10	0.02
ANNUAL RUNOFF (CFSM)	1.61	0.97	0.91
ANNUAL RUNOFF (INCHES)	21.82	13.14	12.35
10 PERCENT EXCEEDS	204	107	96
50 PERCENT EXCEEDS	26	6.8	9.4
90 PERCENT EXCEEDS	5.3	0.50	1.6

(a) Ice affected

(b) From rating curve extended above 2,500 ft<sup>3</sup>/s on basis of step-backwater measurement of peak flow

(c) Estimated due to ice effect or missing record

## 053674464 YELLOW RIVER AT BARRON, WI

LOCATION.--Lat 45°23'43", long 91°49'48", in SE ¼ SE ¼ sec.27, T.34 N., R.12 W., Barron County, Hydrologic Unit 07050007, on left bank 1.0 mi southeast of intersection of U.S. Highway 8 and State Highway 25 in Barron, 0.5 mi downstream from Quaderer Creek, in Becker Park, and 7.3 mi upstream from mouth.

DRAINAGE AREA.--153 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 1,090 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow is regulated occasionally at small dam upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	120	98	97	94	e84	219	134	115	100	90	69
2	109	119	104	97	96	e84	354	126	105	97	80	67
3	109	119	90	90	e95	e83	260	119	110	134	76	67
4	262	118	101	102	e90	e83	159	116	107	142	81	67
5	218	117	96	99	e90	e83	143	193	102	118	79	66
6	533	107	98	98	e90	e83	135	230	104	108	77	66
7	511	115	100	98	e87	e83	128	180	117	104	75	66
8	459	116	94	100	e90	e83	122	170	130	99	76	66
9	384	115	92	101	e90	e86	117	252	139	95	75	66
10	234	117	100	90	e90	e88	114	354	141	103	75	66
11	259	116	100	84	e90	91	113	723	174	107	62	66
12	203	114	101	93	e92	92	112	1,330	149	102	82	72
13	189	122	102	92	94	93	108	882	132	91	59	76
14	149	115	102	87	95	96	113	343	121	97	79	75
15	155	111	102	86	94	123	121	374	113	121	70	71
16	148	109	98	84	92	431	395	283	110	120	69	70
17	142	111	100	86	94	674	757	196	111	109	67	70
18	141	112	114	88	94	600	506	209	108	102	67	81
19	140	114	119	89	91	294	401	225	102	97	70	130
20	135	113	114	89	95	213	429	262	99	93	75	124
21	138	113	108	87	97	193	445	238	96	92	79	93
22	137	112	106	87	96	239	295	206	95	86	75	83
23	136	113	96	e84	e90	328	269	173	97	84	68	82
24	132	111	98	85	e88	218	220	169	106	81	69	83
25	135	109	103	86	e85	184	172	159	136	79	70	78
26	139	90	92	e84	e85	161	175	148	150	81	72	80
27	136	116	96	86	e85	179	167	139	121	80	74	81
28	130	105	101	88	e84	137	158	132	112	75	73	81
29	127	106	101	89	---	140	148	125	112	76	71	82
30	125	105	102	89	---	144	140	124	106	78	68	83
31	123	---	93	91	---	155	---	118	---	87	68	---
TOTAL	6,048	3,380	3,121	2,806	2,553	5,625	6,995	8,432	3,520	3,038	2,271	2,327
MEAN	195	113	101	90.5	91.2	181	233	272	117	98.0	73.3	77.6
MAX	533	122	119	102	97	674	757	1,330	174	142	90	130
MIN	109	90	90	84	84	83	108	116	95	75	59	66
CFSM	1.28	0.74	0.66	0.59	0.60	1.19	1.52	1.78	0.77	0.64	0.48	0.51
IN.	1.47	0.82	0.76	0.68	0.62	1.37	1.70	2.05	0.86	0.74	0.55	0.57

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	105	114	86.0	78.3	93.0	144	253	141	120	103	112	105	
MAX	204	184	112	90.5	179	226	587	272	222	146	170	191	
(WY)	(1996)	(2001)	(2002)	(2003)	(2000)	(1995)	(2001)	(2003)	(1993)	(2000)	(1995)	(2002)	
MIN	74.4	74.2	72.0	63.2	64.0	84.6	99.9	85.7	73.9	80.6	67.5	75.1	
(WY)	(1992)	(1995)	(2000)	(1995)	(1995)	(2001)	(2000)	(1998)	(1994)	(1994)	(1994)	(1998)	

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1991 - 2003
ANNUAL TOTAL	59,297	50,116	
ANNUAL MEAN	162	137	121
HIGHEST ANNUAL MEAN			158
LOWEST ANNUAL MEAN			93.5
HIGHEST DAILY MEAN	1,640	1,330	1,660
LOWEST DAILY MEAN	75	59	(a)23
ANNUAL SEVEN-DAY MINIMUM	78	66	55
MAXIMUM PEAK FLOW		1,510	(b)2,010
MAXIMUM PEAK STAGE		6.58	7.50
INSTANTANEOUS LOW FLOW		(a)17	(a)7.3
ANNUAL RUNOFF (CFSM)	1.06	0.90	0.79
ANNUAL RUNOFF (INCHES)	14.42	12.19	10.72
10 PERCENT EXCEEDS	284	219	174
50 PERCENT EXCEEDS	109	102	90
90 PERCENT EXCEEDS	86	75	70

(a) Result of regulation

(b) Gage height, 7.22 ft

(c) Estimated due to ice effect or missing record



053674464 YELLOW RIVER AT BARRON, WI—Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1991 to current year.

INSTRUMENTATION.--Continuous water temperature recorder since Aug. 30, 1991.

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

## EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum temperature, 29.0°C, July 25, 30, 1999; minimum, 0.0°C, for many days.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum temperature, 25.0°C, July 4, 5, Aug. 16, 18-22, and 26; minimum, 0.0°C, on many days.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	15.0	13.0	14.0	4.5	3.5	4.0	1.0	0.5	0.5	0.5	0.5	0.5
2	14.5	13.5	14.0	4.0	3.0	3.5	0.5	0.0	0.0	0.5	0.5	0.5
3	13.5	12.5	13.0	4.0	3.0	3.5	0.5	0.0	0.0	1.0	0.5	0.5
4	13.0	11.0	12.0	4.0	3.5	3.5	0.5	0.0	0.0	0.5	0.5	0.5
5	11.5	10.0	10.5	4.0	3.5	3.5	0.0	0.0	0.0	0.5	0.5	0.5
6	11.0	9.5	10.5	4.0	3.5	4.0	0.0	0.0	0.0	0.5	0.5	0.5
7	9.5	7.5	8.5	5.0	3.5	4.0	0.0	0.0	0.0	1.0	0.5	0.5
8	9.0	7.5	8.0	5.0	4.0	4.5	0.0	0.0	0.0	1.0	0.5	0.5
9	9.5	8.0	9.0	5.5	4.5	5.0	0.5	0.0	0.0	1.0	0.5	0.5
10	9.5	9.0	9.0	6.0	5.5	5.5	0.5	0.0	0.0	0.5	0.5	0.5
11	11.0	9.0	10.0	5.5	4.5	5.0	0.5	0.0	0.0	0.5	0.5	0.5
12	12.0	11.0	11.5	4.5	4.0	4.0	0.5	0.0	0.0	1.0	0.5	0.5
13	11.0	9.5	10.0	4.0	3.0	3.5	0.5	0.0	0.0	0.5	0.5	0.5
14	9.5	8.5	9.0	3.0	2.0	2.5	1.0	0.0	0.5	0.5	0.5	0.5
15	9.0	7.5	8.5	2.5	2.0	2.0	0.5	0.0	0.5	1.0	0.5	0.5
16	8.0	6.5	7.5	2.5	2.0	2.0	0.0	0.0	0.0	1.0	0.5	0.5
17	7.0	6.5	7.0	2.5	1.5	2.0	0.5	0.0	0.5	1.0	0.5	0.5
18	6.5	5.5	6.0	2.5	1.5	2.0	0.5	0.5	0.5	1.0	0.5	0.5
19	5.5	5.0	5.5	2.5	1.5	2.0	0.5	0.0	0.5	1.0	0.5	0.5
20	5.0	4.5	5.0	2.5	2.0	2.0	0.5	0.0	0.5	1.0	0.5	0.5
21	4.5	4.0	4.0	2.5	2.0	2.0	0.5	0.5	0.5	1.0	0.5	0.5
22	4.5	3.5	4.0	2.0	1.5	2.0	0.5	0.0	0.5	1.0	0.5	0.5
23	4.5	3.5	4.0	2.5	1.5	2.0	0.5	0.0	0.0	1.0	0.5	0.5
24	5.0	4.0	4.5	1.5	1.0	1.0	0.5	0.0	0.5	1.0	0.5	0.5
25	5.0	5.0	5.0	1.0	0.5	0.5	0.5	0.0	0.5	1.0	0.5	0.5
26	5.5	5.0	5.0	1.5	0.5	0.5	0.5	0.0	0.5	1.0	0.5	0.5
27	5.5	4.5	5.0	1.0	0.5	0.5	1.0	0.0	0.5	1.0	0.5	0.5
28	5.5	5.0	5.0	1.0	0.5	0.5	1.0	0.5	0.5	1.0	0.5	0.5
29	6.0	5.5	5.5	1.5	0.5	1.0	1.0	0.5	0.5	1.0	0.5	0.5
30	6.0	5.5	5.5	0.5	0.0	0.5	0.5	0.5	0.5	1.0	0.5	1.0
31	5.5	4.5	5.0	---	---	---	0.5	0.5	0.5	1.0	0.5	1.0
MONTH	15.0	3.5	7.8	6.0	0.0	2.6	1.0	0.0	0.3	1.0	0.5	0.5

## CHIPPEWA RIVER BASIN

053674464 YELLOW RIVER AT BARRON, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	1.0	0.5	1.0	2.0	0.5	1.5	5.5	4.0	5.0	15.0	12.5	13.5
2	1.0	0.5	1.0	1.5	0.5	1.0	5.5	4.5	5.0	15.0	13.0	13.5
3	1.0	0.5	1.0	1.5	0.5	1.0	4.5	2.5	3.0	15.0	13.5	14.0
4	1.0	0.5	0.5	1.5	0.5	1.0	2.5	1.0	2.0	14.5	12.5	13.5
5	1.0	0.5	0.5	1.5	0.5	1.0	3.0	1.0	2.0	12.5	11.0	11.5
6	1.0	0.5	0.5	2.0	0.5	1.0	4.0	2.0	3.0	11.0	10.0	10.5
7	1.0	0.5	0.5	2.0	0.5	1.0	4.5	3.5	4.0	12.0	10.0	11.0
8	1.0	0.5	0.5	1.5	0.5	0.5	6.0	3.5	4.5	13.5	11.5	12.5
9	1.0	0.5	0.5	1.5	0.5	0.5	7.0	5.0	6.0	13.5	12.5	13.0
10	1.0	0.5	0.5	1.5	0.5	1.0	8.5	6.0	7.5	12.5	11.5	12.0
11	1.0	0.5	0.5	2.0	0.5	1.0	11.5	8.0	9.5	12.0	9.0	10.5
12	1.0	0.5	0.5	1.5	0.5	1.0	12.5	10.0	11.0	10.5	7.5	9.0
13	1.5	0.5	1.0	2.0	0.5	1.0	13.0	11.0	12.0	14.0	10.0	11.5
14	1.5	0.5	1.0	2.0	0.5	1.0	14.5	12.0	13.5	14.0	13.0	13.5
15	1.5	0.5	1.0	2.0	0.5	1.0	16.0	14.5	15.0	14.5	12.5	13.5
16	1.5	0.5	1.0	1.5	0.5	1.0	14.5	5.5	11.0	16.5	13.5	15.0
17	1.5	0.5	1.0	1.5	0.5	1.0	5.5	2.0	3.0	17.0	15.0	16.0
18	1.5	0.5	1.0	1.0	0.5	1.0	3.0	2.0	2.5	18.0	16.5	17.0
19	1.5	0.5	1.0	1.5	0.5	1.0	5.0	3.0	4.0	18.0	16.5	17.5
20	2.0	1.0	1.0	1.5	1.0	1.0	5.0	5.0	5.0	16.5	15.0	15.5
21	1.5	1.0	1.0	1.5	1.0	1.5	7.0	5.0	5.5	15.5	14.0	15.0
22	1.5	0.5	1.0	2.0	1.0	1.5	9.5	6.5	8.0	15.0	13.5	14.0
23	1.5	0.5	1.0	2.5	1.5	2.0	11.0	7.5	9.5	14.5	12.5	13.5
24	1.5	0.5	1.0	4.5	2.5	3.5	12.0	9.5	11.0	16.0	14.0	15.0
25	1.5	0.5	1.0	5.0	3.5	4.5	13.5	11.0	12.5	17.5	15.5	16.5
26	2.0	0.5	1.0	5.5	4.0	5.0	13.5	12.0	12.5	18.0	16.0	17.0
27	2.0	1.0	1.0	5.0	4.0	4.5	14.5	13.5	14.0	19.0	17.0	17.5
28	2.0	1.0	1.5	4.0	3.0	3.5	15.0	13.5	14.0	19.5	18.0	19.0
29	---	---	---	3.5	2.5	3.0	15.0	14.0	14.5	20.0	18.5	19.0
30	---	---	---	4.5	3.0	4.0	14.5	13.5	14.0	20.0	18.0	19.0
31	---	---	---	5.0	4.0	4.5	---	---	---	18.5	17.0	17.5
MONTH	2.0	0.5	0.9	5.5	0.5	1.8	16.0	1.0	8.1	20.0	7.5	14.4
JUNE			JULY			AUGUST			SEPTEMBER			
1	18.0	16.5	17.0	21.5	20.0	20.5	23.0	22.0	22.5	20.5	19.0	19.5
2	18.0	16.5	17.0	23.0	21.0	22.0	23.5	22.0	22.5	20.0	19.0	19.5
3	18.5	17.0	17.5	24.5	21.5	23.0	23.0	21.5	22.0	19.5	18.5	19.0
4	19.5	17.5	18.5	25.0	23.5	24.0	22.5	21.0	21.5	19.5	18.0	18.5
5	20.0	18.0	19.0	25.0	23.5	24.0	22.0	21.0	21.5	19.5	17.5	18.5
6	19.5	18.5	19.0	24.5	23.0	23.5	22.5	21.0	21.5	19.5	18.0	18.5
7	18.5	18.0	18.0	24.0	23.0	23.5	23.5	21.5	22.0	20.5	18.5	19.5
8	18.0	17.0	17.5	23.5	22.0	22.5	23.5	21.5	22.0	20.5	19.0	19.5
9	18.0	16.5	17.5	22.0	20.5	21.5	23.0	21.5	22.5	21.0	19.5	20.0
10	18.0	17.0	17.5	20.5	19.0	20.0	23.5	22.0	22.5	21.0	20.0	20.5
11	18.0	16.5	17.0	20.0	18.5	19.0	23.5	22.0	22.5	21.0	20.0	20.5
12	17.5	17.0	17.0	21.0	19.0	19.5	23.5	21.5	22.0	20.5	19.5	20.0
13	19.5	17.5	18.5	21.5	19.5	20.5	23.0	21.0	22.0	19.5	18.5	19.5
14	21.5	18.5	20.0	21.0	20.5	20.5	23.5	21.5	22.5	19.0	17.5	18.5
15	22.5	20.0	21.0	22.0	20.5	21.0	24.0	22.0	23.0	18.0	17.0	17.5
16	23.0	21.0	22.0	22.0	20.5	21.0	25.0	23.0	24.0	18.0	16.5	17.0
17	23.5	22.0	22.5	22.5	21.0	21.5	24.5	23.0	23.5	18.0	16.5	17.0
18	24.5	22.5	23.0	22.5	21.0	21.5	25.0	23.0	23.5	17.5	15.5	17.0
19	24.0	22.0	23.0	22.5	21.0	21.5	25.0	23.5	24.0	16.0	14.5	15.0
20	23.5	21.5	22.0	23.0	21.5	22.0	25.0	24.0	24.5	14.5	13.5	14.0
21	23.0	21.0	22.0	22.5	21.5	22.0	25.0	23.5	24.5	14.0	13.0	13.5
22	23.0	21.5	22.0	22.0	20.5	21.0	25.0	23.0	24.0	13.5	12.5	13.0
23	23.0	21.5	22.0	22.0	20.0	21.0	24.0	23.0	23.5	13.5	12.0	12.5
24	23.5	22.0	22.5	21.5	20.0	20.5	24.5	22.5	23.0	13.5	12.0	13.0
25	23.0	22.0	22.5	21.0	20.0	20.5	24.0	23.0	23.5	12.0	11.0	11.5
26	22.0	19.5	21.0	22.5	20.5	21.5	25.0	22.5	23.5	11.5	10.5	11.0
27	20.5	18.5	19.5	24.0	21.5	22.5	24.0	22.5	23.5	10.5	9.5	10.5
28	19.5	18.0	19.0	24.0	22.0	23.0	23.0	21.5	22.0	9.5	9.0	9.5
29	20.0	17.5	18.5	24.0	22.0	23.0	22.0	21.0	21.5	9.0	8.0	8.5
30	21.5	19.0	20.0	24.5	22.0	23.0	21.5	20.0	20.5	8.0	7.0	7.5
31	---	---	---	23.5	22.5	23.0	21.0	19.5	20.0	---	---	---
MONTH	24.5	16.5	19.8	25.0	18.5	21.7	25.0	19.5	22.6	21.0	7.0	16.0

05368000 HAY RIVER AT WHEELER, WI

LOCATION.--Lat 45°02'52", long 91°54'39", in SW ¼ SW ¼ sec.25, T.30 N., R.13 W., Dunn County, Hydrologic Unit 07050007, on right bank 25 ft downstream from highway bridge in Wheeler, 1.8 mi upstream from Otter Creek, and 2.4 mi downstream from South Fork Hay River.

DRAINAGE AREA.--418 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1950 to current year.

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

GAGE.--Water-stage recorder. Datum of gage is 889.30 ft above NGVD of 1929. Prior to Mar. 25, 1951, nonrecording gage.

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

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Maximum stage since 1915, 16.6 ft April 1934, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	382	405	e310	e300	e250	e270	647	438	404	363	277	218
2	360	404	e320	e290	e260	e260	731	427	390	353	274	216
3	344	401	e300	e280	e260	e250	655	414	383	433	272	213
4	486	397	e330	e300	e260	e260	515	407	379	553	266	213
5	1,070	394	e320	e290	e250	e250	431	618	372	542	261	212
6	1,320	394	e320	e280	e250	e260	402	1,020	372	419	266	211
7	1,670	389	e330	e280	e240	e270	388	777	402	382	275	213
8	1,630	389	e310	e280	e250	e270	373	597	402	364	258	211
9	1,040	387	e310	e270	e250	e260	365	705	416	355	253	209
10	828	387	e330	e260	e260	e270	359	1,290	422	365	248	209
11	750	381	e320	e250	e260	e280	358	1,450	456	395	245	207
12	670	372	314	e240	e260	e290	358	2,560	416	367	241	213
13	634	368	312	e230	e260	e300	356	2,580	386	347	238	226
14	584	367	310	e220	e260	e320	357	1,500	368	341	236	222
15	551	361	309	e220	e260	e340	376	1,020	356	905	234	219
16	523	355	302	e230	e250	e590	881	752	346	1,460	232	216
17	502	355	304	e220	e250	e2,000	2,590	668	338	762	229	214
18	483	355	315	e210	e260	e1,500	2,680	618	327	519	227	213
19	495	353	340	e210	e270	828	1,360	583	314	437	226	291
20	476	352	326	e210	e280	622	1,030	684	305	400	231	297
21	476	348	316	e210	e280	549	998	652	300	372	234	256
22	477	340	306	e200	e270	800	870	569	296	348	228	244
23	480	342	e290	e210	e260	823	671	562	330	332	226	237
24	473	339	e290	e220	e250	647	616	537	398	318	225	233
25	474	335	e300	e210	e240	549	571	501	508	308	222	231
26	474	321	e290	e220	e250	486	532	474	732	303	224	228
27	447	327	e300	e220	e260	458	506	455	489	297	222	231
28	429	326	e300	e210	e270	505	483	433	417	287	219	230
29	417	e320	e300	e220	---	605	463	427	401	280	223	229
30	406	e320	e300	e230	---	541	448	425	381	277	219	229
31	402	---	e280	e240	---	576	---	420	---	274	218	---
TOTAL	19,753	10,884	9,604	7,460	7,220	16,229	21,370	24,563	11,806	13,458	7,449	6,791
MEAN	637	363	310	241	258	524	712	792	394	434	240	226
MAX	1,670	405	340	300	280	2,000	2,680	2,580	732	1,460	277	297
MIN	344	320	280	200	240	250	356	407	296	274	218	207
CFSM	1.52	0.87	0.74	0.58	0.62	1.25	1.70	1.90	0.94	1.04	0.57	0.54
IN.	1.76	0.97	0.85	0.66	0.64	1.44	1.90	2.19	1.05	1.20	0.66	0.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)
	269	265	(2003)	229	203	231	481	(1981)	644	374	353	276	(1993)	270	(2001)
	637	704	(1971)	470	412	657	1,021	(1983)	2,054	792	778	667	(1979)	568	(1986)
	139	138	(1959)	122	97.2	85.2	155	(1956)	166	153	153	135	(1964)	126	(1958)
	(1959)	(1959)	(1959)	(1959)	(1959)	(1959)	(1959)	(1956)	(1959)	(1958)	(1959)	(1964)	(1964)	(1958)	(1958)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1951 - 2003
ANNUAL TOTAL	170,677	156,587	
ANNUAL MEAN	468	429	323
HIGHEST ANNUAL MEAN			433
LOWEST ANNUAL MEAN			152
HIGHEST DAILY MEAN	2,360	2,680	13,000
LOWEST DAILY MEAN	(a)200	(a)200	80
ANNUAL SEVEN-DAY MINIMUM	(a)217	(a)210	82
MAXIMUM PEAK FLOW		3,560	(b)13,600
MAXIMUM PEAK STAGE		11.12	15.04
INSTANTANEOUS LOW FLOW		(a)	(c)55
ANNUAL RUNOFF (CFSM)	1.12	1.03	0.77
ANNUAL RUNOFF (INCHES)	15.19	13.94	10.51
10 PERCENT EXCEEDS	762	670	498
50 PERCENT EXCEEDS	360	330	243
90 PERCENT EXCEEDS	250	222	154

- (a) Ice affected
- (b) From rating curve extended above 9,000 ft<sup>3</sup>/s
- (c) Result of freezeup
- (e) Estimated due to ice effect or missing record

## 05369000 RED CEDAR RIVER AT MENOMONIE, WI

LOCATION.--Lat 44°53'02", long 91°55'57", in NW ¼ NW ¼ sec.26, T.28 N., R.13 W., Dunn County, Hydrologic Unit 07050007, on right bank at Menomonie, 900 ft downstream from powerplant of Northern States Power Co., and 1,000 ft downstream from Wilson Creek.

DRAINAGE AREA.--1,770 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1907 to September 1908, May 1913 to current year. Monthly discharge only for June 1907 to September 1908, published in WSP 1308. Unpublished daily discharge from June 1907 to September 1908 in District files.

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

GAGE.--Water-stage recorder. Datum of gage is 780.00 ft above NGVD of 1929 (Northern States Power Co. bench mark). Prior to Sept. 3, 1908, nonrecording gage at site 1 mi downstream at different datum. May 9, 1913, to Sept. 30, 1923, water-stage recorder at same site at datum 0.42 ft lower than present datum.

REMARKS.--Records good (see page 11). Flow regulated by powerplants at Menomonie and Cedar Falls. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,980	1,710	1,100	1,040	1,110	926	2,180	644	1,160	1,690	1,120	871
2	1,760	1,770	1,260	1,000	1,070	1,090	2,120	1,210	1,660	1,540	1,050	874
3	1,830	1,670	1,020	1,030	1,190	1,010	2,280	1,680	1,300	1,730	1,130	855
4	2,430	1,790	894	1,070	1,020	978	2,440	1,830	1,330	1,930	1,080	797
5	3,670	1,800	1,160	1,160	1,060	941	1,820	3,360	1,400	1,860	1,080	907
6	4,530	1,670	1,000	1,300	1,060	1,010	1,540	3,220	1,460	1,750	1,090	844
7	5,230	1,620	994	1,410	993	1,050	1,570	3,130	1,570	1,630	1,160	800
8	5,350	1,740	1,200	1,170	1,050	1,110	1,310	2,100	1,490	1,480	1,080	801
9	5,310	1,700	1,100	1,400	1,010	879	1,350	2,750	1,680	1,280	999	816
10	4,980	1,570	933	1,190	1,060	956	1,420	3,910	2,100	1,440	974	824
11	4,380	1,620	1,240	850	1,070	1,060	1,450	5,580	2,470	1,500	1,050	815
12	3,340	1,640	1,380	716	959	1,120	1,390	7,050	2,440	1,490	935	904
13	3,280	1,590	1,400	831	1,090	1,080	1,330	9,830	1,690	1,390	868	876
14	2,840	1,510	1,400	965	1,010	1,090	1,310	9,040	1,730	1,300	949	898
15	2,850	1,650	1,350	936	1,030	1,670	1,510	7,130	1,660	2,780	944	898
16	2,520	1,500	1,450	980	999	3,300	3,690	5,660	1,650	3,010	947	855
17	1,940	1,490	1,210	1,110	994	4,320	4,760	4,600	1,410	2,780	902	777
18	2,330	1,560	1,560	1,070	1,100	5,470	7,540	3,830	1,680	1,870	871	1,070
19	2,320	1,540	1,490	1,040	1,060	5,580	6,450	3,280	1,270	1,680	908	1,250
20	2,450	1,580	1,600	1,040	995	3,950	4,970	3,060	1,270	1,510	931	1,440
21	2,150	1,390	1,270	1,010	1,110	2,620	4,550	3,360	1,390	1,630	960	1,190
22	1,870	1,580	1,470	1,010	1,080	2,480	4,540	2,950	1,210	1,220	963	1,230
23	1,910	1,380	1,060	941	1,060	2,780	4,260	2,630	1,910	1,290	947	1,040
24	2,200	1,560	967	912	1,060	2,510	3,870	2,510	1,920	1,230	933	1,090
25	2,180	1,470	1,140	963	961	1,930	3,570	2,380	3,350	1,170	886	1,080
26	2,070	1,230	1,130	1,050	989	1,640	3,050	2,240	2,940	1,110	828	1,080
27	1,850	1,130	999	928	1,050	1,960	2,460	2,250	2,120	1,090	952	1,060
28	1,730	1,330	1,190	1,000	1,040	2,440	2,370	2,320	1,780	1,110	886	986
29	1,860	1,610	1,380	1,010	---	2,190	2,250	1,310	1,800	1,070	861	947
30	1,850	1,410	1,450	1,000	---	2,120	1,350	617	1,860	1,080	825	1,000
31	1,700	---	1,250	1,010	---	1,960	---	666	---	1,090	791	---
TOTAL	86,690	46,810	38,047	32,142	29,280	63,220	84,700	106,127	52,700	48,730	29,900	28,875
MEAN	2,796	1,560	1,227	1,037	1,046	2,039	2,823	3,423	1,757	1,572	965	962
MAX	5,350	1,800	1,600	1,410	1,190	5,580	7,540	9,830	3,350	3,010	1,160	1,440
MIN	1,700	1,130	894	716	959	879	1,310	617	1,160	1,070	791	777

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1907 - 2003, BY WATER YEAR (WY)

MEAN	1,159	1,174	990	906	974	1,916	2,356	1,532	1,493	1,139	1,000	1,205
MAX	2,806	2,521	2,316	1,317	2,047	4,142	6,819	3,423	3,702	2,926	2,237	3,091
(WY)	(1969)	(1992)	(1966)	(1973)	(1966)	(1973)	(1965)	(2003)	(1943)	(1968)	(1995)	(1938)
MIN	528	566	541	532	536	921	664	612	425	421	383	493
(WY)	(1933)	(1937)	(1933)	(1959)	(1959)	(1956)	(1930)	(1934)	(1934)	(1934)	(1934)	(1933)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1907 - 2003

ANNUAL TOTAL	779,381	647,221		
ANNUAL MEAN	2,135	1,773		1,320
HIGHEST ANNUAL MEAN				2,016
LOWEST ANNUAL MEAN				711
HIGHEST DAILY MEAN	9,240	Apr 13	9,830	May 13
LOWEST DAILY MEAN	642	Sep 17	617	May 30
ANNUAL SEVEN-DAY MINIMUM	1,040	Dec 4	827	Sep 4
MAXIMUM PEAK FLOW			10,900	May 13
MAXIMUM PEAK STAGE			7.20	May 13
10 PERCENT EXCEEDS	3,720		3,280	2,220
50 PERCENT EXCEEDS	1,670		1,350	1,070
90 PERCENT EXCEEDS	1,190		920	642

(a) From rating curve extended above 27,000 ft<sup>3</sup>/s on basis of computed flow over Cedar Falls Dam, 6 mi upstream

(b) From floodmarks

05369500 CHIPPEWA RIVER AT DURAND, WI

LOCATION.--Lat 44°37'42", long 91°58'08"(revised), in SE ¼ SW ¼ sec.21, T.25 N., R.13 W., Pepin County, Hydrologic Unit 07050005, on left bank in Durand, 75 ft downstream from bridge on U.S. Highway 10, and 9.5 mi downstream from Red Cedar River.

DRAINAGE AREA.--9,010 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1928 to current year.

REVISED RECORDS.--WSP 785: 1930, 1934(M). WSP 875: 1930 (monthly and yearly runoff). WSP 925: 1938. WSP 1508: 1929(M), 1932. WDR WI-82-1: Drainage area. WDR WI-99-1: 1995(m).

GAGE.--Water-stage recorder. Datum of gage is 694.59 ft above NGVD of 1929. Prior to Dec. 9, 1930, nonrecording gage at bridge 400 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges and Sept. 4-10, which are fair (see page 11). Flow regulated by powerplants, Moose Lake, Lake Chippewa, Rest Lake, Flambeau Flowage, and Lake Wissota on Chippewa and Flambeau Rivers. Gage-height telemeter and data-collection platform at station.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--A stage of 18.4 ft, from flood marks (levels by U.S. Army Corps of Engineers) occurred Sept. 12, 1884, and has not been exceeded since.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12,000	10,800	6,550	e6,000	e3,700	e3,500	10,900	13,300	8,150	8,180	4,210	2,880
2	12,100	9,730	e5,500	e5,400	e3,500	e3,500	10,200	11,600	8,710	7,760	4,210	2,920
3	13,800	10,900	e5,300	e4,700	e3,500	e3,300	10,800	11,500	8,240	7,790	4,550	2,990
4	14,700	10,100	e4,800	e4,800	e4,000	e3,200	13,500	11,200	7,720	7,230	4,550	3,030
5	16,100	9,080	e4,300	e5,000	e3,800	e3,100	10,100	11,300	7,720	7,780	4,160	2,970
6	25,000	9,020	e6,000	e5,300	e3,700	e3,100	8,140	14,700	7,690	6,350	4,170	2,950
7	36,900	8,550	e5,800	5,820	e3,600	e3,200	7,950	15,900	8,130	5,940	4,350	2,850
8	42,300	8,800	e5,500	6,570	e3,400	e3,400	7,620	16,700	8,590	5,780	4,550	2,800
9	43,600	9,820	e5,600	6,480	e3,200	e3,400	7,520	16,300	9,410	5,620	4,720	2,770
10	41,100	9,530	e5,500	6,400	e3,200	e3,300	7,520	17,400	10,300	5,590	4,120	2,790
11	33,800	7,640	e5,200	e5,200	e3,200	e3,300	6,770	26,200	13,000	5,430	4,050	2,790
12	26,700	8,390	5,120	e3,900	e3,300	e3,500	6,790	38,600	14,500	5,230	3,980	2,880
13	24,300	8,670	5,920	e3,500	e3,300	e3,800	7,300	51,700	15,000	5,330	3,450	2,910
14	22,700	8,920	6,230	e3,400	e3,400	e3,600	7,990	62,400	13,800	5,640	3,360	2,880
15	19,500	8,210	7,540	e3,700	e3,300	e3,900	8,450	59,300	10,900	6,740	3,380	2,880
16	16,500	8,090	6,630	e3,700	e3,300	e5,100	11,900	47,500	9,600	8,440	3,310	2,880
17	14,800	7,490	5,880	e3,200	e3,300	e11,000	27,200	33,700	8,630	7,830	3,260	2,800
18	14,700	7,620	6,490	e3,600	e3,300	e17,000	39,200	26,400	7,950	6,160	3,090	2,880
19	14,700	6,960	6,640	e3,600	e3,400	17,800	45,400	23,700	7,910	5,470	3,060	3,780
20	14,600	6,960	7,900	e3,600	e3,500	16,700	43,200	22,700	7,150	5,090	3,110	4,910
21	14,400	7,300	7,210	e3,600	e3,500	14,900	37,900	22,200	5,940	5,010	3,070	4,470
22	13,800	6,900	e6,900	e3,600	e3,500	12,800	41,100	22,200	6,110	5,310	3,060	3,900
23	13,400	7,460	e6,900	e3,600	e3,500	11,800	43,300	20,000	6,860	4,880	3,050	3,510
24	13,000	7,160	e5,200	e3,600	e3,500	12,800	36,800	14,100	7,010	4,730	3,070	3,600
25	12,600	6,550	e5,700	e3,500	e3,400	11,200	28,200	14,900	8,640	4,560	3,050	3,330
26	12,300	6,500	e5,900	e3,700	e3,400	11,000	21,300	13,300	10,200	4,440	2,990	3,330
27	13,800	6,930	e6,300	e3,700	e3,500	10,000	19,200	12,100	9,590	4,340	2,920	3,340
28	13,200	5,770	e5,500	e3,700	e3,500	11,800	18,000	12,300	8,780	4,270	3,120	3,270
29	12,900	6,330	e5,200	e3,700	---	13,700	17,600	10,400	9,040	4,140	2,990	3,200
30	12,300	7,410	6,120	e3,700	---	13,900	15,500	8,000	7,990	3,920	2,930	3,200
31	12,400	---	6,420	e3,600	---	11,800	---	8,100	---	4,030	2,880	---
TOTAL	604,000	243,590	185,750	133,870	96,700	254,400	577,350	689,700	273,260	179,010	110,770	95,690
MEAN	19,480	8,120	5,992	4,318	3,454	8,206	19,240	22,250	9,109	5,775	3,573	3,190
MAX	43,600	10,900	7,900	6,570	4,000	17,800	45,400	62,400	15,000	8,440	4,720	4,910
MIN	12,000	5,770	4,300	3,200	3,200	3,100	6,770	8,000	5,940	3,920	2,880	2,770

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2003, BY WATER YEAR (WY)

MEAN	6,618	6,848	5,401	4,788	5,075	9,600	16,190	10,700	9,414	6,370	5,207	7,017
MAX	20,360	20,190	11,600	8,181	11,160	25,120	34,170	28,220	37,730	19,070	12,180	27,950
(WY)	(1986)	(1992)	(1966)	(1984)	(1984)	(1973)	(1967)	(1954)	(1943)	(1968)	(1995)	(1941)
MIN	2,103	2,209	2,335	2,289	2,404	3,645	4,718	3,336	2,699	2,271	2,026	1,954
(WY)	(1977)	(1977)	(1934)	(1934)	(1990)	(1931)	(1931)	(1934)	(1934)	(1934)	(1934)	(1948)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1928 - 2003
ANNUAL TOTAL	4,372,330	3,444,090	
ANNUAL MEAN	11,980	9,436	7,762
HIGHEST ANNUAL MEAN			11,550
LOWEST ANNUAL MEAN			3,992
HIGHEST DAILY MEAN	73,600	Apr 15	117,000
LOWEST DAILY MEAN	(a)3,500	Jan 20	1,100
ANNUAL SEVEN-DAY MINIMUM	(a)4,610	Feb 2	1,580
MAXIMUM PEAK FLOW			64,400
MAXIMUM PEAK STAGE			13.77
INSTANTANEOUS LOW FLOW			2,740
10 PERCENT EXCEEDS	23,200	17,700	14,400
50 PERCENT EXCEEDS	8,390	6,420	5,610
90 PERCENT EXCEEDS	5,290	3,200	3,000

(a) Ice affected

(e) Estimated due to ice effect or missing record

## 05369900 EAU GALLE RIVER NEAR WOODVILLE, WI

LOCATION.--Lat 44°54'18"(revised), long 92°15'51", in SW ¼ SE ¼ sec.13, T.28 N., R.16(revised) W., St. Croix County, Hydrologic Unit 07050005, on left bank 20 ft downstream from bridge on County Trunk Highway N, 1.3 mi downstream from Carr Creek, and 2.9 mi south of Woodville.

DRAINAGE AREA.--39.4 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1978 to September 1983, July 2001 to current year.

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,058.66 ft above NGVD of 1929. July 1978 to September 1983, incorrectly published as 1,508.66 ft.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	11	6.5	4.4	3.3	2.8	40	8.8	7.9	7.9	6.0	3.3
2	9.0	11	6.3	4.4	3.5	2.6	28	8.2	7.7	7.3	5.6	3.2
3	8.0	11	5.9	4.4	e3.4	e2.6	17	7.7	7.5	70	5.4	3.1
4	518	10	5.9	4.6	e3.3	e2.6	11	7.9	7.3	70	5.3	3.1
5	136	11	5.9	4.4	e3.3	e2.6	8.4	150	7.1	27	5.1	3.3
6	756	11	6.0	4.4	e3.2	e2.6	8.0	57	7.2	12	5.2	3.4
7	166	11	6.1	4.8	e3.2	e2.5	7.8	23	7.0	8.9	5.0	3.7
8	76	11	5.8	4.9	e3.2	e2.5	6.8	16	7.1	7.8	4.7	3.6
9	42	11	5.8	4.6	e3.1	e2.4	6.7	282	6.8	7.4	4.6	3.5
10	124	10	5.9	4.4	e3.1	2.5	6.7	80	7.4	7.4	4.5	3.6
11	55	9.6	5.9	4.3	e3.1	2.6	7.0	844	7.2	7.0	4.3	3.6
12	36	9.2	5.9	4.4	e3.0	2.5	7.4	119	7.1	7.3	4.2	4.0
13	33	8.9	5.7	4.2	e3.1	2.4	7.4	35	6.4	6.7	4.1	3.8
14	22	8.8	5.8	4.1	e3.1	62	8.0	26	5.9	7.0	3.9	3.9
15	19	8.3	5.6	4.0	3.1	408	14	25	5.7	255	3.9	4.1
16	17	7.9	5.6	4.0	3.1	259	666	19	5.7	32	4.1	4.1
17	16	7.9	5.6	3.9	3.2	84	172	15	5.8	14	3.9	4.1
18	16	7.9	6.0	3.9	3.2	43	41	14	5.8	9.4	3.6	4.7
19	18	7.8	6.8	3.9	3.2	26	28	13	5.6	8.3	3.5	4.8
20	16	7.8	6.6	3.8	3.2	22	38	21	5.4	7.7	3.7	4.1
21	17	7.8	5.9	3.7	3.1	55	46	15	5.3	7.4	3.6	3.9
22	22	7.9	5.6	3.6	3.1	96	27	13	5.3	7.0	3.4	3.9
23	23	7.8	5.3	3.5	3.0	30	18	16	5.7	6.8	3.3	3.9
24	18	7.5	5.0	3.5	2.8	24	15	14	6.0	6.9	3.2	4.0
25	16	7.1	5.1	3.5	2.7	18	13	12	402	6.9	3.5	3.6
26	16	6.8	5.0	3.3	2.9	13	12	11	69	6.8	3.6	4.0
27	14	6.8	5.0	e3.4	2.8	17	11	9.8	19	6.5	3.4	3.8
28	13	6.9	5.0	3.4	2.8	112	10	9.3	11	6.2	3.7	3.6
29	13	7.0	4.9	3.3	---	51	9.6	8.9	22	6.1	3.7	3.7
30	12	6.5	5.0	3.3	---	39	9.1	9.3	11	6.6	3.1	3.5
31	11	---	4.7	3.3	---	49	---	8.3	---	6.1	3.4	---
TOTAL	2,270.0	264.2	176.1	123.6	87.1	1,441.2	1,299.9	1,898.2	689.9	653.4	128.5	112.9
MEAN	73.2	8.81	5.68	3.99	3.11	46.5	43.3	61.2	23.0	21.1	4.15	3.76
MAX	756	11	6.8	4.9	3.5	408	666	844	402	255	6.0	4.8
MIN	8.0	6.5	4.7	3.3	2.7	2.4	6.7	7.7	5.3	6.1	3.1	3.1
CFSM	1.86	0.22	0.14	0.10	0.08	1.18	1.10	1.55	0.58	0.53	0.11	0.10
IN.	2.14	0.25	0.17	0.12	0.08	1.36	1.23	1.79	0.65	0.62	0.12	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2003, BY WATER YEAR (WY)

	15.0	8.85	5.77	2.14	9.22	60.3	45.3	27.4	27.7	14.2	15.4	17.4
MEAN	15.0	8.85	5.77	2.14	9.22	60.3	45.3	27.4	27.7	14.2	15.4	17.4
MAX	73.2	34.3	14.2	3.99	42.7	95.7	76.7	61.2	72.5	46.6	47.0	84.0
(WY)	(2003)	(1983)	(2002)	(2003)	(1981)	(1982)	(1983)	(2003)	(1980)	(1978)	(1980)	(1980)
MIN	2.51	1.23	0.84	0.69	0.80	20.8	18.5	3.48	3.08	2.44	2.38	1.90
(WY)	(1982)	(1982)	(1982)	(1982)	(1979)	(1981)	(1981)	(1980)	(1982)	(1981)	(1982)	(1981)

## 05369900 EAU GALLE RIVER NEAR WOODVILLE, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1978 - 2003	
ANNUAL TOTAL	10,875.3		9,145.0			
ANNUAL MEAN	29.8		25.1		20.5	
HIGHEST ANNUAL MEAN					27.9	
LOWEST ANNUAL MEAN					11.0	
HIGHEST DAILY MEAN	756	Oct 6	844	May 11	1,540	Mar 30, 1982
LOWEST DAILY MEAN	2.2	Feb 10	2.4	(a)Mar 13	((b)0.60	Dec 30, 1981
ANNUAL SEVEN-DAY MINIMUM	2.4	Feb 7	(b)2.5	Mar 7	(b)0.63	Jan 5, 1982
MAXIMUM PEAK FLOW			2,360	May 11	(c)5,280	Jun 7, 1980
MAXIMUM PEAK STAGE			9.78	May 11	(d)11.07	Jun 7, 1980
INSTANTANEOUS LOW FLOW			(b)		(f)0.55	Dec 30, 1981
ANNUAL RUNOFF (CFSM)	0.76		0.64		0.52	
ANNUAL RUNOFF (INCHES)	10.27		8.63		7.07	
10 PERCENT EXCEEDS	59		37		33	
50 PERCENT EXCEEDS	8.3		6.7		3.9	
90 PERCENT EXCEEDS	2.8		3.2		1.2	

(a) Also occurred Mar. 9, ice affected

(b) Ice affected

(c) From rating curve extended above 1,000 ft<sup>3</sup>/s, based on contracted-opening measurement of peak flow

(d) From floodmarks

(e) Estimated due to ice effect or missing record

(f) Result of freezeup

## 05370000 EAU GALLE RIVER AT SPRING VALLEY, WI

LOCATION.--Lat 44°51'15", long 92°14'17", in SE ¼ NE ¼ sec.6, T.27 N., R.15 W., Pierce County, Hydrologic Unit 07050005, on right bank 370 ft downstream from flood control dam, 1,900 ft upstream from Mines Creek, at Spring Valley.

DRAINAGE AREA.--64.0 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1944 to current year.

REVISED RECORDS.--WDR WI-67-1: 1966. WDR WI-81-1: Drainage area. WDR WI-92-1: 1975-79(M), 1977, 1978. WDR WI-01-1: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and rock v-notch sharp-crested weir. Datum of gage is 900.00 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 31, 1957, nonrecording gage at site 850 ft downstream at datum of 912.45 ft above NGVD of 1929. Aug. 1, 1957, to June 6, 1966, nonrecording gage at downstream site at datum of 910.45 ft above NGVD of 1929. June 7, 1966, to Oct. 31, 1968, nonrecording gage at downstream site at datum of 909.45 ft above NGVD of 1929. Nov. 1, 1968 to Sept. 3, 2003, water-stage recorder, crest-stage gage, and metal v-notch sharp-crested weir at site 400 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Low flow slightly regulated and high flow completely regulated by flood-control dam 770 ft upstream. Data-collection platform at station.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Maximum stage since at least 1894, that of Sept. 18, 1942, 19.98 ft, with datum at 909.45 ft above NGVD of 1929, from floodmarks, discharge, 33,000 ft<sup>3</sup>/s estimated by U.S. Army Corps of Engineers on basis of slope-area measurement by Geological Survey of peak discharge of 39,000 ft<sup>3</sup>/s at Elmwood, drainage area, 91.9 mi<sup>2</sup>.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	31	23	21	20	18	59	27	25	35	21	e18
2	28	30	23	20	20	18	52	25	26	33	22	e19
3	26	30	22	20	21	18	42	24	26	36	22	e17
4	307	29	22	21	20	19	35	25	26	65	22	e14
5	358	30	22	21	20	18	29	110	26	67	21	15
6	716	26	22	20	20	18	26	128	27	45	21	17
7	440	25	22	20	19	18	24	59	29	39	21	18
8	169	30	22	21	19	19	24	48	29	35	21	18
9	95	31	22	20	19	18	23	282	29	31	21	16
10	95	30	22	20	19	18	23	209	30	29	20	14
11	109	27	22	19	19	18	22	898	30	27	20	14
12	68	27	22	20	19	18	21	567	29	26	20	16
13	50	26	22	20	19	18	22	131	27	26	20	16
14	53	25	22	19	19	49	22	72	25	26	20	15
15	61	25	22	19	19	399	25	63	25	142	19	14
16	53	25	21	19	18	481	753	51	27	97	19	14
17	40	25	21	19	18	181	509	47	28	51	19	13
18	36	25	23	19	19	88	106	42	25	38	19	15
19	34	25	23	20	19	57	65	34	22	32	19	22
20	35	25	23	19	19	45	48	26	22	28	19	18
21	36	24	23	19	19	48	54	40	22	26	19	18
22	37	22	22	19	19	124	56	41	22	24	18	18
23	42	21	22	18	18	72	48	51	24	23	18	17
24	42	20	21	18	18	50	41	52	30	22	18	17
25	39	22	21	19	18	41	46	33	332	22	18	17
26	36	23	21	19	18	35	48	29	170	22	e18	18
27	41	23	21	19	18	36	32	29	68	22	e18	18
28	39	23	21	19	18	123	29	23	44	22	e19	18
29	35	23	21	19	---	102	28	22	35	21	e18	18
30	33	22	21	19	---	68	27	25	34	21	e18	18
31	32	---	21	20	---	67	---	22	---	21	e18	---
TOTAL	3,213	770	678	605	531	2,302	2,339	3,235	1,314	1,154	606	500
MEAN	104	25.7	21.9	19.5	19.0	74.3	78.0	104	43.8	37.2	19.5	16.7
MAX	716	31	23	21	21	481	753	898	332	142	22	22
MIN	26	20	21	18	18	18	21	22	22	21	18	13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

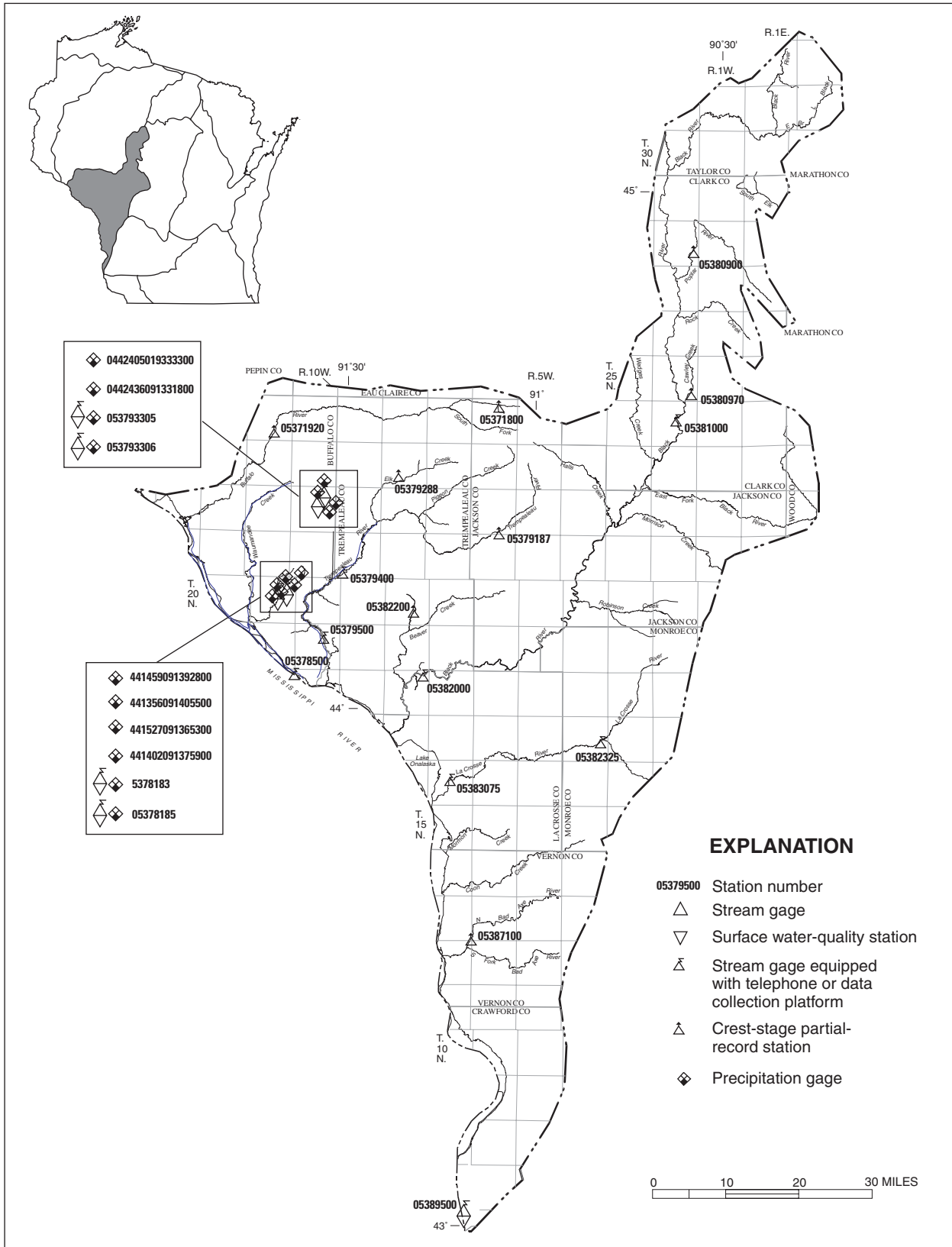
MEAN	27.4	27.2	18.8	15.5	22.3	73.5	69.8	40.3	44.7	27.8	29.1	30.7
MAX	104	86.2	39.7	23.0	71.6	164	258	104	148	94.1	90.1	153
(WY)	(2003)	(1971)	(1978)	(1997)	(1981)	(1989)	(2001)	(2003)	(1980)	(1978)	(1995)	(1986)
MIN	10.4	7.24	4.22	5.21	5.77	10.1	16.6	12.4	11.6	12.5	5.95	9.81
(WY)	(1970)	(1969)	(1969)	(1969)	(1969)	(1970)	(2000)	(1977)	(1969)	(1988)	(1969)	(1969)



## 05370000 EAU GALLE RIVER AT SPRING VALLEY, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	18,507		17,247		35.6	
ANNUAL MEAN	50.7		47.3		56.1	
HIGHEST ANNUAL MEAN					2001	
LOWEST ANNUAL MEAN					1988	
HIGHEST DAILY MEAN	716	Oct 6	898	May 11	2,190	Mar 28, 1989
LOWEST DAILY MEAN	15	Feb 12	13	Sep 17	(a)0.00	Aug 12-16, 1971
ANNUAL SEVEN-DAY MINIMUM	16	Feb 10	15	Sep 11	(b)0.91	Sep 15, 1969
MAXIMUM PEAK FLOW			1,450	Apr 16	(c)3,030	Jun 7, 1980
MAXIMUM PEAK STAGE			17.36	Apr 16	(c)19.90	Jun 7, 1980
INSTANTANEOUS LOW FLOW			(d)		(a)0.00	Aug 11-16, 1971
10 PERCENT EXCEEDS	95		66		49	
50 PERCENT EXCEEDS	25		23		19	
90 PERCENT EXCEEDS	17		18		12	

- (a) Flow shut off at flood-control dam upstream due to request by Wisconsin Department of Natural Resources for eradication of rough fish to improve sport fishing
- (b) Result of work at dam
- (c) Peak discharge and stage prior to construction of flood-control reservoir occurred Apr. 15, 1954, and was 7,000 ft<sup>3</sup>/s and 12.50 ft (datum then in use), respectively
- (d) Unknown
- (e) Estimated due to ice effect or missing record



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

## TREMPEALEAU-BLACK RIVER BASIN

441459091392800 EAGLE CREEK RAIN GAGE E3-1006 NEAR FOUNTAIN CITY, WI

LOCATION.--Lat 44°14'59", long 91°39'28", in NE ¼ SE ¼ sec.36, T.21 N., R.11 W., Buffalo County, Hydrologic Unit 07040003, on Eagle Valley Road, 0.3 mi west of junction with Glencoe-Waumandee Road, near Fountain City.

PERIOD OF RECORD.--October 1990 to June 1996, October 2002 to September 2003 (non-frozen precipitation).

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

REMARKS.--Rainfall estimated to be 0.00 for Jan. 4, 5, 6, 29, 31, Feb. 5, 13, 18, 26, and Mar. 5, 7, 11, 12 because recorded precipitation interpreted as collector snowmelt.

EXTREMES FOR PERIOD OF RECORD.-- Maximum daily rainfall, 6.71 in., Aug. 13, 1995.

EXTREMES FOR CURRENT YEAR.-- Maximum daily rainfall, 1.64 in., Sept. 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.00	0.00
2	---	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.15	0.00
3	---	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.83	0.01	0.00
4	---	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.28	0.00	0.00
5	---	0.05	0.00	0.00	0.00	0.00	0.15	0.50	0.00	0.00	0.00	0.00
6	---	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.60	0.19	0.02	0.00
7	---	0.01	0.00	0.00	0.00	0.00	0.03	0.03	0.02	0.11	0.01	0.00
8	---	0.00	0.00	0.00	0.00	0.00	0.01	0.01	1.15	0.03	0.00	0.00
9	---	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.01	0.05	0.00	0.00
10	---	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.78	0.11	0.00	0.00
11	---	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.00	0.01	0.00	0.00
12	---	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.71
13	---	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.03
14	---	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.01	0.00	0.00
15	---	0.00	0.00	0.00	0.00	0.00	0.13	0.21	0.00	0.00	0.00	0.00
16	---	0.00	0.00	0.00	0.00	0.05	0.38	0.01	0.00	0.00	0.00	0.00
17	---	0.00	0.05	0.00	0.00	0.02	0.08	0.00	0.00	0.00	0.00	0.00
18	---	0.01	0.35	0.00	0.00	0.00	0.01	0.00	0.09	0.00	0.00	1.64
19	---	0.01	0.00	0.00	0.00	0.35	0.49	0.23	0.00	0.00	0.02	0.06
20	---	0.00	0.00	0.00	0.00	0.13	0.04	0.03	0.00	0.00	0.00	0.00
21	---	0.06	0.00	0.00	0.14	0.20	0.02	0.00	0.00	0.05	0.00	0.05
22	---	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
23	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
24	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00
25	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.22	0.00
26	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.07	0.01	0.20
27	---	0.00	0.01	0.00	0.00	0.53	0.00	0.00	0.08	0.00	0.00	0.01
28	---	0.00	0.00	0.00	0.00	0.02	0.00	0.13	0.03	0.00	0.00	0.00
29	---	0.00	0.00	0.00	---	0.01	0.01	0.00	0.02	0.00	0.00	0.02
30	0.00	0.00	0.00	0.00	---	0.01	0.01	0.19	0.00	0.12	0.00	0.01
31	0.00	---	0.00	0.00	---	0.00	---	0.02	---	0.27	0.00	---
TOTAL	---	0.14	0.42	0.00	0.39	1.36	1.37	5.04	3.60	2.13	0.44	2.73

## 441356091405500 EAGLE CREEK RAIN GAGE E2-1005 NEAR FOUNTAIN CITY, WI

LOCATION.--Lat 44°13'56", long 91°40'55", in SW ¼ SE ¼ sec.3, T.20 N., R.11 W., Buffalo County, Hydrologic Unit 07040003, on Schaffner Valley Road, 1.7 mi north of junction with CTH G, near Fountain City.

PERIOD OF RECORD.--October 1990 to June 1996, October 2002 to September 2003 (non-frozen precipitation).

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

REMARKS.--Rainfall estimated to be 0.00 for Jan. 31 and Mar. 7 because recorded precipitation interpreted as collector snowmelt. Rainfall missing for period Oct. 21-29.

EXTREMES FOR PERIOD OF RECORD.-- Maximum daily rainfall, 5.46 in., Aug. 13, 1995.

EXTREMES FOR CURRENT YEAR.-- Maximum daily rainfall, 1.66 in., Sept. 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.00	0.00
2	---	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.01	0.00
3	---	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.89	0.01	0.00
4	---	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.32	0.00	0.00
5	---	0.04	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
6	---	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.52	0.18	0.16	0.00
7	---	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.01	0.15	0.00	0.00
8	---	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.89	0.02	0.00	0.00
9	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.06	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.74	0.07	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.00	0.00	0.00	0.00
12	0.10	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
13	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.02
14	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.00	0.01
15	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00
16	0.06	0.00	0.00	0.00	0.00	0.07	1.10	0.00	0.00	0.00	0.00	0.00
17	0.06	0.00	0.02	0.00	0.00	0.01	0.26	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.33	0.00	0.00	0.00	0.01	0.00	0.04	0.00	0.00	1.66
19	0.01	0.00	0.01	0.00	0.00	0.26	0.75	0.23	0.00	0.00	0.03	0.05
20	0.00	0.00	0.00	0.00	0.00	0.09	0.06	0.00	0.00	0.00	0.00	0.00
21	---	0.04	0.00	0.00	0.09	0.18	0.03	0.00	0.00	0.08	0.00	0.06
22	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
24	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
25	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.18	0.00
26	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.06	0.00	0.14
27	---	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.07	0.00	0.00	0.03
28	---	0.00	0.00	0.00	0.00	0.34	0.00	0.16	0.12	0.00	0.00	0.00
29	---	0.00	0.00	0.00	---	0.00	0.00	0.00	0.01	0.00	0.00	0.03
30	0.00	0.00	0.00	0.00	---	0.00	0.01	0.27	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.23	0.00	---
TOTAL	---	0.08	0.40	0.00	0.30	1.83	2.45	5.12	3.30	2.06	0.39	2.62

## 441527091365300 JOOS VALLEY CREEK RAIN GAGE J3-1003 NEAR ARCADIA, WI

LOCATION.--Lat 44°15'27", long 91°36'53", in NE 1/4 NW 1/4 sec.32, T.21 N., R.10 W., Buffalo County, Hydrologic Unit 07040003, on Hannon Road, 0.1 mi north of junction with Pausy Pass, near Arcadia.

PERIOD OF RECORD.--October 1990 to June 1996, October 2002 to September 2003 (non-frozen precipitation).

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

REMARKS.--Rainfall estimated to be 0.00 for Jan. 7, 31, and Mar. 7 because recorded precipitation interpreted as collector snowmelt.

EXTREMES FOR PERIOD OF RECORD.-- Maximum daily rainfall, 7.53 in., Aug. 13, 1995.

EXTREMES FOR CURRENT YEAR.-- Maximum daily rainfall, 1.61 in., Sept. 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.01	0.00
2	---	---	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.56	0.00
3	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.73	0.00	0.00
4	---	---	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.22	0.00	0.00
5	---	---	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.00
6	---	---	0.00	0.00	0.00	0.00	0.01	0.00	0.52	0.14	0.12	0.00
7	---	---	0.00	0.00	0.00	0.00	0.00	0.14	0.01	0.17	0.00	0.00
8	---	---	0.00	0.00	0.00	0.00	0.00	0.08	0.83	0.01	0.00	0.00
9	---	---	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.05	0.00	0.00
10	---	---	0.00	0.00	0.00	0.00	0.00	0.22	0.68	0.05	0.00	0.00
11	---	---	0.00	0.00	0.00	0.00	0.00	1.01	0.00	0.00	0.00	0.00
12	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54
13	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
14	---	0.00	0.00	0.00	0.00	0.00	0.00	1.39	0.00	0.01	0.00	0.00
15	---	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00
16	---	0.00	0.00	0.00	0.00	0.03	1.19	0.00	0.00	0.00	0.00	0.00
17	---	0.00	0.03	0.00	0.00	0.01	0.05	0.00	0.00	0.00	0.00	0.00
18	---	0.00	0.30	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	1.61
19	---	0.00	0.01	0.00	0.00	0.24	0.66	0.17	0.00	0.00	0.01	0.07
20	---	0.00	0.00	0.00	0.00	0.04	0.09	0.00	0.00	0.00	0.01	0.00
21	---	0.00	0.00	0.00	0.04	0.20	0.05	0.00	0.00	0.01	0.00	0.04
22	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00
25	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.19	0.00
26	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.14
27	---	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.05	0.00	0.00	0.00
28	---	0.00	0.00	0.00	0.00	0.23	0.00	0.07	0.01	0.00	0.00	0.00
29	---	0.00	0.00	0.00	---	0.00	0.00	0.00	0.01	0.00	0.00	0.01
30	---	0.00	0.00	0.00	---	0.00	0.02	0.25	0.00	0.15	0.00	0.00
31	---	---	0.00	0.00	---	0.00	---	0.00	---	0.21	0.00	---
TOTAL	---	---	0.34	0.00	0.07	1.67	2.23	4.95	2.94	1.78	0.90	2.43

WAUMANDEE CREEK BASIN

441402091375900 JOOS VALLEY CREEK RAIN GAGE J2-1002 NEAR FOUNTAIN CITY, WI

LOCATION.--Lat 44°14'02", long 91°37'59", in NE ¼ SE ¼ sec.1, T.20 N., R.11 W., Buffalo County, Hydrologic Unit 07040003, on Slaby Farm entrance road, just off Joos Valley road, and approximately 3.1 mi northeast of the junction of Joos Valley Road and CTH G, near Fountain City.

PERIOD OF RECORD.--October 1990 to June 1996, October 2002 to September 2003 (non-frozen precipitation).

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

REMARKS.--Rainfall estimated to be 0.00 for Jan. 4, 6, 31, Feb. 1, and Mar. 7, 11 because recorded precipitation interpreted as collector snowmelt. Prior to October 1992, precipitation data published under number 441402091395900. Rainfall data missing for period July 18 to Sept. 12.

EXTREMES FOR PERIOD OF RECORD.-- Maximum daily rainfall, 6.36 in., Aug. 13, 1995.

EXTREMES FOR CURRENT YEAR.-- Maximum daily rainfall, 1.66 in., Sept. 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	---	---
2	---	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	---	---
3	---	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.90	---	---
4	---	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.34	---	---
5	---	0.05	0.00	0.00	0.00	0.00	0.05	0.44	0.00	0.00	---	---
6	---	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.61	0.19	---	---
7	---	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.03	0.30	---	---
8	---	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.90	0.01	---	---
9	---	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.08	---	---
10	---	0.00	0.00	0.00	0.00	0.00	0.72	0.45	0.67	0.13	---	---
11	---	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	---	---
12	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---
13	---	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	---	0.04
14	---	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.00	0.00	---	0.00
15	---	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	---	0.00
16	---	0.00	0.00	0.00	0.00	0.08	1.25	0.00	0.00	0.00	---	0.00
17	---	0.00	0.04	0.00	0.00	0.01	0.32	0.00	0.00	0.00	---	0.00
18	---	0.00	0.32	0.00	0.00	0.00	0.01	0.00	0.06	---	---	1.66
19	---	0.00	0.00	0.00	0.00	0.30	0.68	0.18	0.00	---	---	0.05
20	---	0.00	0.00	0.00	0.00	0.09	0.08	0.00	0.00	---	---	0.00
21	---	0.03	0.00	0.00	0.11	0.19	0.05	0.00	0.00	---	---	0.05
22	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	0.00
23	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	0.00
24	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	---	---	0.00
25	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	---	---	0.00
26	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	---	---	0.21
27	---	0.00	0.00	0.00	0.00	1.09	0.00	0.00	0.07	---	---	0.01
28	---	0.00	0.00	0.00	0.00	0.33	0.00	0.15	0.03	---	---	0.00
29	---	0.00	0.00	0.00	---	0.00	0.00	0.00	0.01	---	---	0.04
30	0.00	0.00	0.00	0.00	---	0.00	0.02	0.27	0.00	---	---	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	---	---	---
TOTAL	---	0.08	0.36	0.00	0.37	2.12	3.39	5.46	3.20	---	---	---

05378183 JOOS VALLEY CREEK NEAR FOUNTAIN CITY, WI

LOCATION.--Lat 44°12'54", long 91°39'54" in NE ¼ NE ¼ sec.14, T.20 N., R.11 W., Buffalo County, Hydrologic Unit 07040003, on left bank at bridge on private road, 6.3 mi northeast of Fountain City.

DRAINAGE AREA.--5.89 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1990 to July 1996, October 2002 to September 2003.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 800 ft above NGVD of 1929, from topographic map.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4.0	2.6	2.8	2.6	3.0	2.8	4.3	3.6	3.9	3.3	2.9	2.5
2	e3.5	2.8	2.7	2.5	3.0	2.5	4.1	3.3	3.7	3.2	2.8	2.4
3	e3.0	2.8	2.6	2.5	2.8	2.6	4.0	3.2	3.5	4.8	3.0	2.4
4	e10	2.8	2.6	2.7	2.5	2.5	3.8	3.8	2.9	4.3	3.0	2.4
5	e5.5	2.9	2.4	2.9	2.5	2.4	3.7	7.3	2.5	3.6	2.9	2.4
6	e6.0	2.9	2.4	2.7	2.4	2.6	3.4	4.5	3.4	3.6	3.1	2.4
7	e4.4	2.9	2.4	2.9	2.4	2.4	3.4	4.5	3.4	4.0	3.0	2.2
8	3.7	3.0	2.2	2.9	e2.3	2.3	3.3	4.2	6.2	3.5	2.7	2.1
9	2.8	3.0	2.4	2.9	e2.3	2.3	3.3	6.6	4.6	3.4	2.7	2.1
10	4.3	3.1	2.4	2.5	e2.3	2.4	3.3	5.0	6.3	3.6	2.6	2.2
11	3.7	3.0	2.5	2.6	e2.4	3.1	3.2	12	4.8	3.5	2.5	2.3
12	3.6	3.0	2.5	2.7	e2.2	2.9	3.2	7.1	4.6	3.3	2.4	3.4
13	2.8	3.0	2.4	2.7	e2.3	3.2	3.2	5.7	4.5	3.1	2.4	3.0
14	2.6	3.0	2.4	2.6	e2.3	34	3.2	12	4.0	3.1	2.4	2.7
15	2.5	2.9	2.5	e2.3	e2.2	30	3.4	7.9	3.9	3.0	2.4	2.4
16	2.3	2.9	2.6	e2.4	e2.3	20	10	6.2	3.8	3.0	2.4	2.5
17	2.3	2.9	2.4	e2.4	2.5	8.9	7.5	5.7	3.8	3.0	2.4	2.3
18	2.6	2.9	3.0	e2.4	2.5	5.1	5.5	5.4	3.7	2.9	2.4	3.2
19	2.4	2.9	2.7	e2.5	2.6	4.9	7.6	5.4	3.5	2.9	2.6	4.9
20	2.5	2.9	2.6	e2.5	11	7.2	7.6	5.2	3.4	2.9	2.7	2.6
21	3.2	2.8	2.5	e2.3	11	9.9	5.8	4.8	3.3	2.8	2.4	2.4
22	2.8	2.7	2.5	e2.1	4.6	5.3	5.0	4.7	3.3	2.8	2.7	2.5
23	2.6	2.8	2.4	e1.9	2.8	4.4	4.7	4.7	3.4	2.6	2.5	2.3
24	2.6	2.7	e2.4	e2.1	2.5	4.2	4.5	4.6	4.2	2.5	2.5	2.1
25	2.8	2.6	e2.3	e2.5	e2.4	4.0	4.3	4.7	4.0	2.6	3.0	2.0
26	3.0	2.6	2.3	e2.4	e2.4	3.8	4.2	4.9	3.8	2.7	3.0	2.2
27	2.9	2.6	2.4	e2.5	2.6	17	4.0	4.6	3.7	2.6	2.7	2.3
28	2.9	2.7	2.5	e2.5	2.7	13	3.7	4.6	3.7	2.4	2.6	2.1
29	2.8	3.0	2.7	e2.5	---	5.4	3.6	4.4	3.6	2.4	2.5	2.1
30	2.8	2.7	2.8	2.8	---	4.6	3.7	4.7	3.3	2.5	2.5	2.2
31	2.6	---	2.5	2.8	---	4.4	---	4.2	---	2.8	2.5	---
TOTAL	105.5	85.4	77.8	78.6	88.8	220.1	134.5	169.5	116.7	96.7	82.2	74.6
MEAN	3.40	2.85	2.51	2.54	3.17	7.10	4.48	5.47	3.89	3.12	2.65	2.49
MAX	10	3.1	3.0	2.9	11	34	10	12	6.3	4.8	3.1	4.9
MIN	2.3	2.6	2.2	1.9	2.2	2.3	3.2	3.2	2.5	2.4	2.4	2.0
CFSM	0.58	0.48	0.43	0.43	0.54	1.21	0.76	0.93	0.66	0.53	0.45	0.42
IN.	0.67	0.54	0.49	0.50	0.56	1.39	0.85	1.07	0.74	0.61	0.52	0.47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	3.68	4.11	3.40	3.06	3.61	6.15	5.49	4.79	4.06	3.76	4.70	4.07		
MAX	5.01	6.24	4.65	4.15	6.85	8.25	10.0	7.26	7.96	7.99	7.06	5.89		
(WY)	(1994)	(1992)	(1994)	(1994)	(1994)	(1995)	(1993)	(1993)	(1993)	(1993)	(1993)	(1993)		
MIN	2.40	2.09	1.92	1.89	2.05	3.66	3.98	2.95	2.88	2.66	2.65	2.49		
(WY)	(1991)	(1991)	(1991)	(1991)	(1991)	(1991)	(1996)	(1996)	(1995)	(1990)	(2003)	(2003)		

SUMMARY STATISTICS

	FOR 2003 WATER YEAR	WATER YEARS 1990 - 2003
ANNUAL TOTAL	1,330.4	
ANNUAL MEAN	3.64	4.34
HIGHEST ANNUAL MEAN		5.81
LOWEST ANNUAL MEAN		3.03
HIGHEST DAILY MEAN	34 Mar 14	90 Aug 14, 1995
LOWEST DAILY MEAN	1.9 Jan 23	1.5 Dec 27, 1990
ANNUAL SEVEN-DAY MINIMUM	2.1 Sep 24	1.6 Dec 22, 1990
MAXIMUM PEAK FLOW	150 Mar 14	(a)1,480 Aug 14, 1995
MAXIMUM PEAK STAGE	6.32 Mar 14	12.14 Aug 14, 1995
INSTANTANEOUS LOW FLOW	0.56 Mar 9	(b)0.54 (c)Dec 3, 1990
ANNUAL RUNOFF (CFSM)	0.62	0.74
ANNUAL RUNOFF (INCHES)	8.40	10.02
10 PERCENT EXCEEDS	5.0	6.0
50 PERCENT EXCEEDS	2.9	3.7
90 PERCENT EXCEEDS	2.4	2.4

- (a) From rating curve extended above 86 ft<sup>3</sup>/s on basis of step-backwater method
- (b) Result of freezeup
- (c) Also occurred Dec. 5, 1995
- (e) Estimated due to ice effect or missing record

05378183 JOOS VALLEY CREEK NEAR FOUNTAIN CITY, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1990 to June 1996, October 2002 to September 2003.

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1990 to June 1996, October 2002 to September 2003.

SUSPENDED-SOLIDS DISCHARGE: July 1990 to June 1996, October 2002 to September 2003.

TOTAL-PHOSPHORUS DISCHARGE: July 1990 to June 1996, October 2002 to September 2003.

DISSOLVED OXYGEN: July 1990 to September 1992.

INSTRUMENTATION.--Water-quality sampler July 1990 to June 1996 and October 2002 to September 2003; continuous water-temperature recorder July 1990 to June 1996 and October 2002 to September 2003; dissolved-oxygen recorder July 1990 to September 1992.

REMARKS.--Records represent water temperature at sensor within 0.5°C. Chemical analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum observed, 31.0°C, June 27-28, 1991 and July 13, 1995; minimum observed, 0.0°C on many days during 1991, 1992, 1993, 1995, 1996, and 2003 winter periods.

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 4,570 tons, Aug. 14, 1995; minimum daily, 0.04 ton, Nov. 8-9, 1990, Aug. 2-12, 1995, Oct. 1-4, 13-22, 1995, May 9, 1996, and Sept. 23-30, 2003.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 7,350 lb, Aug. 14, 1995; minimum daily, 0.22 lb, Nov. 9, 1990.

DISSOLVED OXYGEN: Maximum observed, 15.8 mg/L, Apr. 26, 1991; minimum observed, 4.3 mg/L, June 28, 1991.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 24.0°C, July 2, 5; minimum observed, 0.0°C on many days.

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 235 tons, Mar. 14; minimum daily 0.04 ton, Sept. 23-30.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 775 lb, Mar. 14; minimum daily, 0.41 lb, Dec. 8.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	6.0	2.5	4.0	2.0	0.0	1.0	1.0	0.0	0.5
2	---	---	---	6.5	2.5	4.0	2.0	0.0	1.5	2.0	0.0	1.0
3	---	---	---	7.0	2.5	4.5	0.5	0.0	0.5	1.0	0.0	0.5
4	---	---	---	7.0	4.5	5.5	1.0	0.5	0.5	2.5	0.0	1.0
5	---	---	---	6.0	4.5	5.0	0.5	0.0	0.5	3.0	2.5	2.5
6	---	---	---	8.0	5.0	6.0	0.5	0.0	0.5	3.0	1.5	2.0
7	---	---	---	8.5	4.0	6.0	1.5	0.5	0.5	4.5	1.5	2.5
8	14.0	9.0	11.0	9.0	6.0	7.5	0.5	0.0	0.5	5.0	2.0	3.5
9	13.0	8.0	10.5	9.0	5.5	7.5	0.5	0.0	0.5	3.0	0.5	2.0
10	14.5	9.5	11.5	10.0	8.0	8.5	1.5	0.5	0.5	0.5	0.0	0.0
11	15.0	9.5	12.0	8.0	4.5	6.5	3.0	0.5	1.5	0.5	0.0	0.0
12	12.5	9.5	12.0	6.5	2.5	4.5	4.5	2.5	3.5	0.5	0.0	0.5
13	10.5	6.5	8.5	6.0	3.0	4.5	3.5	0.5	2.0	0.5	0.0	0.5
14	11.0	6.0	8.5	5.5	3.5	5.0	3.5	1.0	2.0	0.5	0.0	0.5
15	11.0	7.5	9.0	4.0	1.5	3.0	4.0	2.0	3.0	0.5	0.0	0.5
16	8.5	4.5	7.0	4.5	2.5	3.5	2.5	0.5	1.0	0.5	0.0	0.5
17	9.0	6.5	7.5	4.5	1.5	3.0	3.0	1.5	2.5	0.5	0.0	0.5
18	10.0	7.5	8.5	4.5	2.0	3.0	5.5	3.0	4.0	0.5	0.0	0.5
19	8.0	6.5	7.5	5.5	1.5	3.5	5.0	3.0	4.0	0.5	0.0	0.5
20	7.0	5.5	6.0	6.0	3.5	4.5	3.0	1.0	2.0	0.5	0.0	0.5
21	7.0	5.5	6.5	5.0	3.5	4.5	1.5	0.0	1.0	0.5	0.0	0.5
22	7.5	6.0	6.5	5.0	2.5	3.5	2.0	0.5	1.0	0.5	0.0	0.5
23	8.0	5.5	6.5	6.0	3.5	4.5	0.5	0.0	0.5	0.5	0.0	0.5
24	7.0	5.5	6.5	4.0	2.5	3.0	0.5	0.0	0.5	0.5	0.5	0.5
25	7.5	6.5	7.0	3.5	0.5	2.0	1.0	0.0	0.5	0.5	0.0	0.5
26	8.0	6.5	7.5	2.0	0.5	1.0	0.5	0.0	0.5	0.5	0.0	0.0
27	7.0	5.0	6.5	2.0	0.5	1.0	0.5	0.0	0.5	0.5	0.0	0.5
28	8.5	6.0	7.0	3.0	0.5	1.5	2.0	0.5	1.0	0.5	0.5	0.5
29	8.5	7.0	7.5	5.0	3.0	3.5	3.5	1.0	2.5	0.5	0.0	0.5
30	9.0	6.0	7.5	3.5	0.0	1.5	4.0	1.0	3.0	0.5	0.5	0.5
31	7.5	4.0	6.0	---	---	---	1.0	0.0	0.5	0.5	0.5	0.5
MONTH	15.0	4.0	8.1	10.0	0.0	4.2	5.5	0.0	1.4	5.0	0.0	0.8



05378183 JOOS VALLEY CREEK NEAR FOUNTAIN CITY, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	0.5	1.0	2.0	0.0	1.0	13.5	4.0	8.5	16.5	8.0	12.0
2	2.0	1.0	1.5	2.5	0.0	1.0	11.5	6.0	8.5	17.0	8.5	12.5
3	2.0	1.5	2.0	0.5	0.0	0.5	6.5	3.0	4.5	17.5	7.5	12.5
4	1.5	0.5	1.0	1.0	0.0	0.5	3.0	1.0	2.5	12.0	8.5	9.5
5	1.0	0.0	0.5	0.5	0.0	0.5	7.0	0.5	3.5	9.5	8.5	9.0
6	1.5	0.5	0.5	1.5	0.0	0.5	7.0	0.5	4.0	14.5	9.0	11.5
7	0.5	0.0	0.5	3.0	0.5	1.5	4.5	2.0	3.0	14.0	10.0	12.0
8	1.0	0.5	0.5	1.5	0.0	0.5	11.0	1.0	5.5	13.5	8.0	11.0
9	0.5	0.0	0.5	0.5	0.0	0.0	12.0	2.5	7.0	16.0	10.5	12.5
10	0.5	0.5	0.5	0.5	0.0	0.5	13.0	3.5	8.0	14.5	9.0	11.5
11	0.5	0.0	0.5	1.0	0.0	0.5	15.5	5.5	10.0	11.5	9.0	10.0
12	0.5	0.0	0.5	3.0	0.5	2.0	15.0	5.5	10.5	17.0	7.5	12.0
13	0.5	0.5	0.5	5.0	2.0	3.0	15.5	6.5	11.0	18.5	8.0	13.0
14	1.0	0.5	0.5	5.5	0.0	2.0	19.5	9.5	14.0	13.5	10.0	11.0
15	1.0	0.5	0.5	6.0	0.0	2.0	20.5	12.5	16.0	18.5	8.5	13.0
16	1.0	0.5	0.5	6.5	1.0	3.0	15.0	5.0	8.5	19.5	9.0	14.0
17	1.5	0.5	0.5	8.0	2.0	5.0	6.5	4.5	5.5	18.5	10.5	14.5
18	2.5	1.0	1.5	7.5	5.0	6.5	8.0	5.0	6.5	19.5	11.0	15.0
19	2.5	1.0	1.5	6.5	4.5	6.0	8.5	6.0	7.0	16.5	13.5	15.0
20	3.0	0.0	1.0	5.5	3.5	4.5	8.0	7.0	7.5	17.5	9.5	13.0
21	2.0	0.0	0.5	4.5	3.0	4.0	12.0	6.5	8.5	16.0	8.5	12.0
22	2.0	0.0	1.0	8.0	3.0	5.0	15.0	4.5	9.5	13.0	8.5	11.0
23	0.5	0.0	0.5	11.0	3.0	7.0	16.0	5.5	10.5	17.5	9.0	13.0
24	0.5	0.0	0.0	11.0	7.0	8.5	15.0	7.0	10.5	18.0	9.5	13.5
25	0.5	0.0	0.0	11.0	4.0	7.5	17.0	7.5	11.5	19.5	9.5	14.5
26	0.5	0.0	0.5	11.5	4.0	7.5	17.5	7.5	12.5	19.5	10.5	15.0
27	1.0	0.0	0.5	7.5	3.0	4.5	15.5	10.0	13.0	20.5	10.5	15.5
28	1.5	0.0	0.5	3.5	2.5	3.0	17.5	8.5	13.0	21.0	13.5	16.5
29	---	---	---	8.5	2.0	4.5	15.5	8.5	12.0	19.0	11.0	15.0
30	---	---	---	9.0	1.5	5.0	12.5	10.0	11.0	20.0	13.0	16.0
31	---	---	---	8.0	2.5	5.5	---	---	---	19.0	11.5	15.0
MONTH	3.0	0.0	0.7	11.5	0.0	3.3	20.5	0.5	8.8	21.0	7.5	13.0
	JUNE			JULY			AUGUST			SEPTEMBER		
1	20.0	10.5	15.0	23.5	15.0	19.0	21.5	16.0	18.5	18.5	12.5	15.0
2	16.0	11.5	14.0	24.0	16.0	20.0	20.5	16.0	18.5	19.0	12.5	15.5
3	18.5	11.5	15.0	23.5	18.0	20.5	19.0	16.0	17.0	17.0	14.0	15.5
4	20.0	12.0	15.5	23.0	18.0	20.0	19.0	15.0	16.5	17.5	11.5	14.5
5	19.5	12.0	16.0	24.0	17.0	20.0	18.5	14.5	16.5	18.0	11.5	15.0
6	16.5	13.0	14.0	20.5	17.0	18.5	20.5	15.5	18.0	20.0	13.5	16.5
7	15.0	12.0	13.5	21.0	16.5	18.5	21.5	16.0	18.5	20.5	14.5	17.5
8	17.5	12.5	14.5	19.0	15.0	17.0	20.5	15.5	18.0	20.5	14.5	17.5
9	20.5	12.0	16.0	18.5	15.0	16.5	21.5	15.0	18.0	20.0	15.0	17.5
10	18.5	14.0	16.0	17.0	14.5	15.5	18.0	15.0	16.5	20.0	16.0	18.0
11	16.0	13.0	14.5	19.5	13.0	16.0	21.0	14.5	17.5	21.0	16.5	18.5
12	19.0	11.0	15.0	22.0	14.0	17.5	21.0	15.0	18.0	18.5	15.5	17.5
13	21.5	13.5	17.0	22.5	14.5	18.5	22.0	15.0	18.5	16.0	14.5	15.5
14	22.0	14.0	18.0	19.5	16.0	18.0	21.5	16.0	19.0	16.5	13.5	15.0
15	23.5	14.0	18.5	22.0	16.0	19.0	22.5	17.0	19.5	17.0	11.5	14.0
16	23.0	14.5	19.0	21.5	14.5	18.0	23.0	17.0	20.0	18.0	11.5	14.5
17	22.5	14.5	18.5	21.0	15.5	18.5	21.5	17.0	19.5	19.5	14.5	16.5
18	23.5	16.0	19.5	22.0	15.0	18.5	23.0	17.0	20.0	18.5	14.5	16.5
19	22.5	14.0	18.0	22.0	14.5	18.5	22.0	18.5	20.0	14.5	12.0	13.5
20	22.0	12.5	17.5	21.5	16.5	18.5	23.5	18.0	20.5	15.5	9.0	12.5
21	22.0	13.0	17.5	21.0	16.0	18.5	22.5	18.5	20.5	13.0	10.5	12.0
22	21.0	14.5	18.0	19.0	14.0	16.5	21.0	15.5	18.5	15.0	12.0	13.0
23	20.5	16.0	18.0	21.0	13.5	17.0	20.5	15.5	18.0	15.0	9.0	12.0
24	23.5	16.5	19.5	20.5	13.5	17.0	23.0	16.5	19.5	13.5	11.0	12.5
25	21.0	16.5	18.5	21.0	15.5	18.0	20.5	17.0	18.5	13.0	9.0	11.0
26	17.0	14.0	15.5	21.5	18.0	19.5	22.0	15.5	18.5	11.5	10.0	11.0
27	20.0	12.5	16.0	23.5	17.0	20.0	20.5	15.0	18.0	10.5	9.0	10.0
28	19.5	15.0	17.0	22.5	17.0	20.0	19.5	15.5	17.5	11.5	9.0	10.0
29	22.5	14.5	18.0	23.0	15.5	19.5	19.5	15.0	17.0	10.5	6.5	8.5
30	22.5	14.5	18.5	22.5	16.5	19.5	18.0	12.5	15.5	10.0	6.0	8.0
31	---	---	---	20.0	15.5	17.5	16.5	12.5	15.0	---	---	---
MONTH	23.5	10.5	16.7	24.0	13.0	18.4	23.5	12.5	18.2	21.0	6.0	14.2

## WAUMANDEE CREEK BASIN

05378183 JOOS VALLEY CREEK NEAR FOUNTAIN CITY, WI—Continued

SUSPENDED SOLIDS, DRIED AT 105 DEGREES CELSIUS, WATER, UNFILTERED, TONS PER DAY  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.08	0.14	0.07	0.09	0.10	0.16	0.19	0.09	0.13	0.26	0.06	0.05
2	0.07	0.14	0.06	0.09	0.10	0.14	0.17	0.08	0.12	0.25	0.06	0.05
3	0.06	0.14	0.06	0.09	0.09	0.13	0.15	0.07	0.10	0.53	0.07	0.05
4	3.4	0.13	0.06	0.10	0.08	0.12	0.13	0.18	0.08	0.40	0.07	0.05
5	0.47	0.13	0.05	0.11	0.08	0.11	0.12	1.1	0.07	0.26	0.07	0.05
6	0.62	0.13	0.05	0.10	0.08	0.12	0.10	0.18	0.11	0.24	0.07	0.05
7	0.22	0.12	0.05	0.11	0.07	0.10	0.09	0.13	0.12	0.24	0.07	0.05
8	0.13	0.12	0.05	0.12	0.07	0.09	0.08	0.21	0.69	0.19	0.07	0.05
9	0.06	0.12	0.05	0.12	0.07	0.09	0.08	1.2	0.26	0.17	0.07	0.05
10	0.21	0.12	0.05	0.11	0.07	0.09	0.07	0.53	0.73	0.16	0.07	0.05
11	0.13	0.11	0.05	0.12	0.07	0.11	0.07	4.9	0.30	0.14	0.07	0.05
12	0.11	0.11	0.05	0.13	0.06	0.10	0.07	0.72	0.26	0.12	0.06	0.07
13	0.07	0.10	0.05	0.13	0.06	0.10	0.07	0.24	0.27	0.10	0.06	0.06
14	0.07	0.10	0.05	0.13	0.06	235	0.07	8.9	0.26	0.09	0.06	0.06
15	0.07	0.10	0.05	0.11	0.06	102	0.09	1.9	0.27	0.08	0.06	0.05
16	0.07	0.09	0.06	0.11	0.06	14	5.6	0.70	0.29	0.07	0.06	0.05
17	0.07	0.09	0.05	0.11	0.06	1.8	1.3	0.60	0.32	0.06	0.06	0.05
18	0.08	0.09	0.07	0.11	0.06	0.18	0.32	0.55	0.34	0.06	0.06	0.18
19	0.08	0.09	0.06	0.11	0.06	0.32	1.0	0.54	0.32	0.06	0.07	0.57
20	0.09	0.09	0.06	0.11	22	1.5	0.84	0.50	0.31	0.06	0.07	0.06
21	0.12	0.08	0.06	0.10	5.1	5.9	0.24	0.43	0.30	0.06	0.06	0.05
22	0.11	0.08	0.06	0.09	0.56	0.27	0.18	0.39	0.29	0.06	0.06	0.05
23	0.11	0.08	0.06	0.08	0.19	0.14	0.15	0.35	0.30	0.06	0.06	0.04
24	0.11	0.07	0.06	0.08	0.17	0.12	0.14	0.32	0.36	0.05	0.06	0.04
25	0.13	0.07	0.06	0.10	0.16	0.11	0.13	0.30	0.34	0.06	0.07	0.04
26	0.14	0.07	0.07	0.09	0.15	0.10	0.12	0.28	0.32	0.06	0.07	0.04
27	0.14	0.07	0.07	0.09	0.16	39	0.11	0.24	0.31	0.06	0.06	0.04
28	0.15	0.07	0.07	0.09	0.16	14	0.10	0.23	0.30	0.05	0.06	0.04
29	0.16	0.07	0.08	0.09	---	0.81	0.09	0.20	0.29	0.05	0.05	0.04
30	0.15	0.07	0.09	0.10	---	0.25	0.09	0.19	0.26	0.05	0.05	0.04
31	0.14	---	0.08	0.10	---	0.21	---	0.16	---	0.06	0.05	---
TOTAL	7.62	2.99	1.86	3.22	30.01	417.17	11.96	26.41	8.42	4.16	1.96	2.12

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	0.55	0.53	0.59	0.65	1.5	1.1	1.1	0.71	1.2	0.72	0.65
2	1.2	0.57	0.49	0.58	0.65	1.4	1.1	1.0	0.64	1.2	0.68	0.64
3	1.0	0.58	0.48	0.58	0.59	1.4	1.0	1.0	0.58	1.8	0.72	0.64
4	31	0.58	0.48	0.63	0.52	1.4	0.94	1.8	0.47	1.6	0.72	0.63
5	4.0	0.60	0.45	0.68	0.52	1.4	0.90	8.3	0.43	1.3	0.70	0.62
6	5.4	0.59	0.44	0.64	0.50	1.5	0.82	1.8	0.75	1.3	0.74	0.61
7	1.8	0.59	0.45	0.70	0.49	1.4	0.79	1.0	0.75	1.4	0.70	0.56
8	1.3	0.60	0.41	0.72	0.46	1.4	0.77	1.5	6.0	1.2	0.64	0.53
9	0.95	0.61	0.43	0.71	0.45	1.4	0.73	9.2	2.1	1.2	0.62	0.53
10	1.4	0.63	0.44	0.63	0.45	1.5	0.73	2.4	6.4	1.2	0.60	0.54
11	1.2	0.60	0.45	0.67	0.46	1.9	0.72	29	2.5	1.2	0.59	0.56
12	1.1	0.59	0.45	0.71	0.42	1.8	0.70	7.8	2.1	1.1	0.54	0.85
13	0.87	0.59	0.44	0.71	0.43	2.0	0.70	4.0	1.3	1.0	0.54	0.73
14	0.79	0.59	0.45	0.68	0.43	775	0.72	52	1.3	0.99	0.54	0.66
15	0.74	0.57	0.46	0.60	0.41	439	0.79	21	1.3	0.95	0.56	0.61
16	0.67	0.57	0.49	0.62	0.42	149	16	3.7	1.4	0.93	0.57	0.62
17	0.65	0.57	0.46	0.61	0.44	30	6.3	2.4	1.5	0.91	0.57	0.57
18	0.72	0.57	0.57	0.61	0.45	4.2	2.2	2.1	1.6	0.87	0.58	1.8
19	0.65	0.57	0.52	0.63	0.46	4.5	5.3	2.1	1.5	0.86	0.63	5.5
20	0.65	0.56	0.52	0.62	133	14	5.5	1.9	1.4	0.86	0.65	0.66
21	0.82	0.54	0.49	0.56	126	20	2.1	1.7	1.4	0.81	0.61	0.56
22	0.69	0.52	0.51	0.51	23	4.8	1.4	1.5	1.4	0.79	0.67	0.54
23	0.63	0.54	0.50	0.45	1.5	2.9	1.2	1.4	1.4	0.74	0.64	0.49
24	0.62	0.51	0.49	0.50	1.3	2.7	1.1	1.3	1.7	0.70	0.65	0.44
25	0.65	0.50	0.48	0.58	1.2	2.4	1.1	1.3	1.6	0.70	0.78	0.43
26	0.68	0.50	0.49	0.56	1.2	2.2	1.1	1.3	1.5	0.74	0.79	0.48
27	0.63	0.50	0.51	0.57	1.4	121	1.1	1.1	1.4	0.68	0.71	0.49
28	0.63	0.51	0.54	0.57	1.4	99	1.1	1.1	1.4	0.62	0.69	0.44
29	0.60	0.56	0.58	0.56	---	10	1.1	0.96	1.4	0.61	0.67	0.46
30	0.58	0.51	0.61	0.62	---	2.3	1.1	0.96	1.3	0.62	0.68	0.46
31	0.55	---	0.55	0.61	---	1.2	---	0.83	---	0.69	0.65	---
TOTAL	64.57	16.87	15.16	19.01	299.20	1,704.2	60.21	168.55	49.23	30.77	20.15	23.30

## 05378183 JOOS VALLEY CREEK NEAR FOUNTAIN CITY, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Discharge, cfs (00060)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, fltrd, mg/L as N (00608)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)
OCT 2002								
08...	1505	--	5.0	10	7	0.035	0.040	0.064
29...	1730	--	2.8	10	21	<0.013	0.017	0.039
NOV								
13...	0855	--	3.0	10	13	<0.013	0.015	--
DEC								
12...	1246	--	2.4	10	7	<0.013	0.017	0.033
JAN 2003								
14...	1438	--	2.8	10	18	<0.013	0.020	0.049
FEB								
18...	1406	--	2.4	10	9	0.043	0.016	0.033
20...	1350	--	4.6	50	90	0.316	--	0.318
20...	1435	--	8.8	50	402	0.652	--	0.802
20...	1535	--	15	50	760	1.25	--	1.84
20...	1625	--	26	50	1,530	0.885	--	2.68
20...	1920	--	23	50	456	0.886	--	2.12
20...	2010	--	27	50	720	1.06	--	2.37
20...	2025	--	32	50	1,040	1.33	--	2.84
20...	2035	--	34	50	1,350	1.44	--	3.21
20...	2135	--	31	50	1,030	1.65	--	2.78
21...	0010	--	21	50	366	2.32	--	2.82
21...	0430	--	12	50	174	2.54	--	3.03
21...	1334	--	6.9	10	72	2.22	--	2.06
21...	1402	--	7.2	50	80	2.25	--	2.10
21...	1505	--	8.5	50	126	1.81	--	2.07
21...	1845	--	13	50	242	1.63	--	1.19
22...	0420	--	5.8	50	53	1.91	--	2.41
25...	1246	2.4	--	10	25	0.078	--	0.095
MAR								
13...	1226	--	2.5	10	12	0.049	0.082	0.117
14...	1210	--	4.8	50	49	0.236	--	0.370
14...	1340	--	25	50	1,550	0.877	--	2.51
14...	1450	--	56	50	2,770	0.884	--	3.90
14...	1520	--	89	50	5,410	0.971	--	6.30
15...	1314	--	23	10	338	2.16	--	2.00
15...	1315	--	24	50	2,760	2.02	--	3.90
15...	1435	--	87	50	2,470	1.99	--	3.41
15...	2105	--	32	50	528	1.45	--	2.14
16...	0315	--	13	50	116	1.28	--	1.41
16...	1655	--	31	50	432	0.963	--	1.49
17...	0140	--	12	50	180	0.792	--	1.06
21...	1540	--	20	50	558	0.297	--	0.695
27...	0805	--	6.0	50	186	0.154	--	0.221
27...	1228	--	25	10	820	0.210	0.290	0.890
27...	1230	--	25	50	720	0.200	0.286	0.965
28...	0030	--	19	50	988	1.13	--	2.05
28...	1230	--	12	50	178	0.903	--	1.29
APR								
10...	1302	--	3.4	10	8	<0.013	0.019	0.041
16...	0145	--	5.8	50	245	0.092	--	0.280
16...	1345	--	12	50	130	0.103	--	0.268
18...	0145	--	6.0	50	23	0.036	--	0.085
19...	0540	--	7.9	50	58	0.053	--	0.140
20...	1740	--	6.7	50	17	0.029	--	0.082
23...	1054	--	4.8	10	12	<0.013	0.015	0.046
MAY								
05...	0135	--	8.7	50	101	0.162	--	0.258
08...	1245	--	4.2	10	18	<0.013	0.010	0.034
09...	0315	--	9.1	50	100	0.226	--	0.413
11...	0230	--	9.5	50	84	0.141	--	0.370
11...	1430	--	14	50	133	0.119	--	0.409
14...	1000	--	8.8	50	62	0.191	0.155	0.292
14...	1245	--	20	50	364	0.340	0.461	0.886
15...	0045	--	9.9	50	125	0.739	0.542	0.954
20...	1110	--	5.2	10	36	<0.013	0.012	0.067
JUN								
04...	1214	--	3.2	10	10	0.015	0.029	0.029
18...	1010	--	3.9	10	34	0.106	0.029	0.078
JUL								
02...	1140	--	3.5	10	29	0.055	0.035	0.070
17...	1418	--	3.1	10	8	0.017	0.034	0.057
31...	1110	--	2.6	10	8	0.024	0.025	0.046
AUG								
14...	0745	--	2.4	10	10	0.014	0.020	0.042
28...	1120	--	2.6	10	8	0.030	0.030	0.050
SEP								
11...	1514	--	2.3	10	8	<0.013	--	0.046
19...	0040	--	11	50	85	0.073	--	0.385
22...	1135	--	2.6	10	7	0.018	0.029	0.040

05378183 JOOS VALLEY CREEK NEAR FOUNTAIN CITY, WI—Continued

## PRECIPITATION QUANTITY

PERIOD OF RECORD.--October 1990 to June 1996, October 2002 to September 2003 (non-frozen precipitation).

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

REMARKS.--Rainfall estimated to be 0.00 for Jan. 4, 5, 29, 31, Feb. 11, 26, and Mar. 5, 7, 8, 11 because recorded precipitation interpreted as collector snowmelt. Rainfall data missing for period June 24 to July 17.

EXTREMES FOR PERIOD OF RECORD.-- Maximum daily rainfall, 4.26 in., Aug. 13, 1995.

EXTREMES FOR CURRENT YEAR.-- Maximum daily rainfall, 1.59 in., Sept. 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	---	0.02	0.00
2	---	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	---	0.08	0.00
3	---	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	---	0.01	0.00
4	---	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	---	0.00	0.00
5	---	0.06	0.00	0.00	0.00	0.00	0.11	0.48	0.00	---	0.01	0.00
6	---	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.70	---	0.56	0.00
7	0.00	0.01	0.00	0.00	0.00	0.00	0.06	0.15	0.01	---	0.01	0.00
8	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.86	---	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.01	---	0.00	0.00
10	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.69	---	0.00	0.00
11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.00	---	0.00	0.00
12	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.61
13	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	---	0.00	0.04
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.06	0.00	---	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	---	0.00	0.00
16	0.01	0.00	0.00	0.00	0.00	0.10	1.26	0.00	0.00	---	0.00	0.00
17	0.03	0.00	0.04	0.00	0.00	0.02	0.25	0.00	0.00	---	0.00	0.00
18	0.21	0.01	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59
19	0.00	0.00	0.00	0.00	0.00	0.32	0.80	0.21	0.00	0.00	0.04	0.05
20	0.05	0.00	0.00	0.00	0.00	0.11	0.07	0.00	0.00	0.00	0.01	0.00
21	0.32	0.04	0.00	0.00	0.16	0.21	0.04	0.00	0.00	0.03	0.00	0.07
22	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00
25	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.30	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.01	0.00	0.13
27	0.00	0.00	0.00	0.00	0.00	1.18	0.00	0.00	---	0.00	0.00	0.02
28	0.03	0.00	0.00	0.00	0.00	0.40	0.00	0.11	---	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	---	0.00	0.00	0.02
30	0.00	0.00	0.00	0.00	---	0.00	0.01	0.30	---	0.06	0.00	0.01
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.24	0.00	---
TOTAL	---	0.12	0.42	0.00	0.56	2.37	2.77	5.50	---	---	1.04	2.54

05378185 EAGLE CREEK, AT COUNTY HIGHWAY G, NEAR FOUNTAIN CITY, WI

LOCATION.--Lat 44°12'34", long 91°40'42" in SW ¼ NE ¼ sec.15, T.20 N., R.11 W., Buffalo County, Hydrologic Unit 07040003, on right bank at CTH "G" and 5.7 mi north of Fountain City.

DRAINAGE AREA.--14.3 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1990 to July 1996, October 2002 to September 2003.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 770 ft above NGVD of 1929, from topographic map.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e9.0	7.3	6.8	8.3	6.8	7.6	12	8.4	7.0	5.9	5.7	4.5
2	e8.5	7.3	6.8	7.1	7.2	7.3	11	8.5	7.0	5.7	5.4	4.4
3	e8.0	7.4	6.4	e6.9	7.3	7.6	11	8.1	6.9	8.8	5.7	4.4
4	e24	7.6	6.5	e7.2	7.0	7.2	10	9.4	7.0	7.9	5.5	4.5
5	e14	7.9	6.1	e7.4	7.5	7.7	10	17	7.2	6.4	5.4	4.4
6	e16	7.8	6.1	e7.3	6.8	7.9	9.6	12	8.5	6.7	5.8	4.5
7	e12	7.7	6.3	7.7	e6.6	7.8	9.6	11	8.5	7.4	5.5	4.3
8	e10	7.9	5.8	7.5	e6.5	7.5	9.3	9.7	13	6.5	5.3	4.2
9	8.9	7.9	6.0	7.3	e6.4	e7.4	8.7	14	9.3	6.5	5.2	4.2
10	11	7.9	6.5	6.7	e6.3	8.2	8.4	11	13	6.8	5.3	4.1
11	9.6	7.6	6.8	e6.6	e6.4	8.9	8.2	26	9.7	6.6	5.2	3.9
12	10	7.5	7.0	e7.0	e6.3	8.5	8.2	15	8.9	6.3	5.0	5.5
13	9.3	7.6	6.9	6.8	e6.3	9.3	8.2	13	8.3	6.0	4.9	5.0
14	8.7	7.6	7.1	e6.4	e6.2	7.5	8.4	22	7.9	5.9	4.9	4.8
15	8.3	7.4	7.1	e5.8	e6.2	6.4	8.9	16	7.5	6.1	4.7	4.6
16	8.1	7.3	7.3	e5.8	e6.3	4.0	23	13	7.3	6.0	4.7	4.6
17	8.1	7.3	7.6	e6.0	6.7	19	18	12	7.1	5.9	4.6	4.4
18	8.7	7.4	8.9	e6.0	6.8	12	14	11	6.9	5.6	4.5	5.6
19	8.1	7.4	8.2	e6.0	7.3	12	18	11	6.5	5.6	4.7	9.9
20	8.0	7.1	7.8	e5.8	2.6	16	18	11	6.4	5.7	4.8	4.7
21	9.1	7.2	7.7	e5.6	2.6	21	14	9.7	6.2	5.6	4.5	4.5
22	8.5	7.1	7.5	e5.2	1.2	14	12	9.6	6.3	5.5	4.4	4.7
23	7.9	7.1	7.2	e5.4	8.4	1.2	11	9.2	6.4	5.3	4.4	4.6
24	7.8	7.1	e7.0	e5.8	7.6	1.2	10	8.7	7.8	5.2	4.3	4.5
25	8.0	6.9	e7.0	e6.2	e7.4	1.1	9.7	8.3	7.6	5.1	4.9	4.6
26	7.9	6.8	e6.8	e5.8	e7.2	1.1	9.2	8.0	7.3	5.5	5.1	5.0
27	7.6	6.8	7.0	e5.8	7.6	3.2	9.0	7.8	6.7	5.4	4.6	5.3
28	7.6	6.8	7.3	e6.0	7.5	3.0	8.8	8.0	6.7	5.2	4.6	5.1
29	7.6	7.1	7.5	e6.0	---	1.5	8.2	7.5	6.5	5.2	4.5	4.8
30	7.5	6.9	8.0	e6.2	---	1.3	8.2	8.1	6.1	5.4	4.5	4.9
31	7.3	---	8.1	6.5	---	1.2	---	7.5	---	5.7	4.5	---
TOTAL	295.1	220.7	219.1	200.1	236.6	523.9	332.6	351.5	231.5	187.4	153.1	144.5
MEAN	9.52	7.36	7.07	6.45	8.45	16.9	11.1	11.3	7.72	6.05	4.94	4.82
MAX	24	7.9	8.9	8.3	26	75	23	26	13	8.8	5.8	9.9
MIN	7.3	6.8	5.8	5.2	6.2	7.2	8.2	7.5	6.1	5.1	4.3	3.9
CFSM	0.67	0.51	0.49	0.45	0.59	1.18	0.78	0.79	0.54	0.42	0.35	0.34
IN.	0.77	0.57	0.57	0.52	0.62	1.36	0.87	0.91	0.60	0.49	0.40	0.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

	MEAN	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8.62	9.23	7.89	7.03	8.25	12.9	11.8	10.3	9.55	10.6	9.70	
MAX	11.9	13.0	10.9	9.65	14.3	16.9	21.2	16.4	21.4	19.7	17.8	14.2
(WY)	(1994)	(1992)	(1994)	(1994)	(1994)	(2003)	(1993)	(1991)	(1993)	(1993)	(1993)	(1993)
MIN	6.44	5.58	4.90	4.70	5.09	7.98	10.0	8.82	7.48	6.05	4.94	4.82
(WY)	(1991)	(1991)	(1991)	(1991)	(1991)	(1991)	(1996)	(1992)	(1995)	(2003)	(2003)	(2003)

SUMMARY STATISTICS

	FOR 2003 WATER YEAR	WATER YEARS 1991 - 2003
ANNUAL TOTAL	3,096.1	
ANNUAL MEAN	8.48	10.1
HIGHEST ANNUAL MEAN		13.5
LOWEST ANNUAL MEAN		7.75
HIGHEST DAILY MEAN	75	192
LOWEST DAILY MEAN	3.9	3.9
ANNUAL SEVEN-DAY MINIMUM	4.2	4.2
MAXIMUM PEAK FLOW	279	(b)2,400
MAXIMUM PEAK STAGE	6.48	11.61
INSTANTANEOUS LOW FLOW	3.6	(c)1.7
ANNUAL RUNOFF (CFSM)	0.59	0.70
ANNUAL RUNOFF (INCHES)	8.05	9.55
10 PERCENT EXCEEDS	12	14
50 PERCENT EXCEEDS	7.3	8.4
90 PERCENT EXCEEDS	4.8	5.9

(a) Also occurred Sept. 11, 2003  
 (b) From rating curve extended above 380 ft<sup>3</sup>/s on basis of step-backwater method  
 (c) Result of freezeup  
 (e) Estimated due to ice effect or missing record

05378185 EAGLE CREEK, AT COUNTY HIGHWAY G, NEAR FOUNTAIN CITY, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1990 to June 1996, October 2002 to September 2003.

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1990 to June 1996, October 2002 to September 2003.

SUSPENDED-SOLIDS DISCHARGE: July 1990 to June 1996, October 2002 to September 2003.

TOTAL-PHOSPHORUS DISCHARGE: July 1990 to June 1996, October 2002 to September 2003.

DISSOLVED OXYGEN: July 1990 to September 1992.

INSTRUMENTATION.--Water-quality sampler July 1990 to June 1996 and October 2002 to September 2003; continuous water-temperature recorder July 1990 to June 1996 and October 2002 to September 2003; dissolved-oxygen recorder July 1990 to September 1992.

REMARKS.--Records represent water temperature at sensor within 0.5°C. Chemical analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum observed, 28.0°C, July 14, 1995; minimum observed, 0.0°C on many days during 1991, 1992, 1993, 1994, 1995, 1996, and 2003 winter periods.

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 4,750 tons, Aug. 14, 1995; minimum daily, 0.07 ton, Sept. 11, 2003.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 9,370 lb, Aug. 14, 1995; minimum daily, 0.74 lb, Jan. 25, 1991.

DISSOLVED OXYGEN: Maximum observed, 14.9 mg/L, Apr. 12, 1992; minimum observed, 4.2 mg/L, July 21, 1991.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 23.0°C, July 29, 30; minimum observed, 0.0°C on many days.

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 721 tons, Mar. 14; minimum daily 0.07 ton, Sept. 11.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,800 lb, Mar. 14; minimum daily, 1.1 lb, Sept. 11.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
				MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	6.0	4.5	5.0	2.5	1.5	2.0	2.0	0.0	1.0			
2	---	---	---	6.0	4.5	5.0	2.5	1.5	2.0	2.5	0.0	1.5			
3	---	---	---	6.0	4.0	5.0	1.5	1.0	1.0	2.0	0.0	0.5			
4	---	---	---	6.5	5.0	5.5	2.0	1.0	1.5	3.0	0.5	2.0			
5	---	---	---	6.0	5.0	5.5	1.5	1.0	1.5	3.5	3.0	3.0			
6	---	---	---	7.0	5.5	6.0	1.5	0.5	1.0	3.0	2.0	2.5			
7	---	---	---	7.5	5.5	6.5	2.0	1.5	1.5	4.5	2.0	3.0			
8	---	---	---	8.0	6.5	7.0	1.5	0.5	1.0	5.0	2.5	4.0			
9	11.5	9.0	10.5	8.0	6.5	7.5	1.0	0.5	1.0	3.5	0.5	2.5			
10	12.5	9.5	11.0	8.5	8.0	8.5	2.0	1.0	1.5	0.5	0.0	0.0			
11	12.5	10.0	11.5	8.0	6.0	7.0	3.0	1.5	2.0	0.0	0.0	0.0			
12	12.5	10.5	12.0	6.5	4.5	5.5	4.0	3.0	3.5	0.5	0.0	0.0			
13	10.5	8.5	9.5	6.0	5.0	5.5	3.5	2.5	3.0	0.0	0.0	0.0			
14	10.0	7.5	8.5	6.0	5.0	5.5	3.0	2.0	2.5	0.5	0.0	0.0			
15	10.0	8.5	9.0	5.0	3.5	4.0	3.5	3.0	3.0	0.0	0.0	0.0			
16	---	---	---	4.5	3.5	4.0	3.5	2.0	2.5	1.0	0.0	0.5			
17	8.5	7.0	8.0	4.5	3.5	4.0	3.5	2.5	3.0	0.5	0.0	0.0			
18	9.0	8.0	8.5	4.5	3.0	4.0	5.0	3.5	4.0	1.0	0.0	0.5			
19	8.5	7.5	8.0	5.0	3.5	4.0	5.0	4.0	4.5	1.0	0.0	0.5			
20	7.5	6.5	6.5	5.5	4.0	4.5	4.0	2.5	3.5	1.0	0.0	0.0			
21	7.0	6.5	6.5	5.0	4.5	5.0	2.5	2.0	2.5	0.0	0.0	0.0			
22	7.5	6.5	7.0	5.0	4.0	4.5	2.5	2.0	2.0	0.0	0.0	0.0			
23	7.5	6.0	6.5	5.5	4.0	4.5	2.0	1.0	1.5	0.0	0.0	0.0			
24	7.0	6.5	6.5	5.0	3.5	4.0	1.5	0.5	1.0	0.0	0.0	0.0			
25	7.5	7.0	7.0	3.5	2.5	3.5	2.0	0.5	1.0	0.5	0.0	0.0			
26	8.0	7.0	7.5	3.0	2.0	2.5	1.5	0.0	0.5	0.0	0.0	0.0			
27	7.5	6.0	6.5	2.5	1.5	2.0	2.0	0.0	1.0	0.5	0.0	0.0			
28	8.0	6.5	7.0	3.0	2.0	2.5	3.5	1.5	2.5	1.5	0.5	1.0			
29	8.0	7.0	7.5	4.5	3.0	4.0	4.0	1.5	3.0	1.5	0.0	0.5			
30	8.0	7.0	7.5	4.0	1.5	3.0	4.5	2.0	3.5	2.0	0.5	1.0			
31	7.5	6.0	7.0	---	---	---	2.0	0.0	1.0	3.0	1.5	2.0			
MONTH	12.5	6.0	8.2	8.5	1.5	4.8	5.0	0.0	2.1	5.0	0.0	0.8			

05378185 EAGLE CREEK, AT COUNTY HIGHWAY G, NEAR FOUNTAIN CITY, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	2.5	2.0	2.5	2.5	1.0	2.0	12.5	4.0	8.0	15.0	8.0	11.5
2	3.0	2.5	2.5	2.5	1.0	1.5	10.5	6.0	8.0	16.0	8.5	12.0
3	3.0	1.5	2.5	1.0	0.5	0.5	7.0	3.5	4.5	16.0	7.0	11.5
4	1.5	0.0	0.5	1.0	0.5	1.0	3.5	1.5	3.0	11.5	8.0	9.0
5	1.5	0.0	0.5	1.5	0.5	0.5	6.0	1.0	3.5	9.5	8.0	8.5
6	2.0	0.0	0.5	2.0	0.5	1.0	7.0	1.0	4.0	14.0	8.5	10.5
7	0.0	0.0	0.0	2.5	1.5	2.0	4.5	2.5	3.5	13.5	10.0	11.5
8	1.5	0.0	0.5	2.0	0.5	1.5	10.0	1.5	5.5	12.5	7.5	10.5
9	0.5	0.0	0.0	0.5	0.0	0.5	11.0	2.5	6.5	14.5	10.0	12.0
10	1.0	0.0	0.5	1.0	0.0	0.5	13.0	3.5	7.5	13.5	8.5	11.0
11	1.0	0.0	0.5	2.5	0.5	1.5	14.0	5.5	9.5	11.0	9.0	9.5
12	1.0	0.0	0.0	3.0	1.5	2.0	13.5	5.5	9.5	15.5	7.5	11.0
13	2.5	0.0	1.0	3.5	2.5	3.0	16.0	6.5	11.0	16.5	7.5	12.0
14	2.0	0.0	1.0	3.5	0.5	2.0	19.0	9.0	13.5	12.5	10.0	11.0
15	2.0	0.5	1.0	5.0	0.5	2.0	---	---	---	16.5	8.5	12.0
16	2.5	0.0	1.0	6.0	1.0	3.0	---	---	---	17.0	9.5	13.0
17	3.0	0.0	1.0	7.0	2.5	5.0	14.5	9.5	11.0	16.5	10.5	13.5
18	4.0	1.5	2.5	7.0	5.0	6.0	12.0	10.0	11.0	18.5	10.5	14.0
19	4.0	1.0	2.0	6.5	4.5	6.0	12.5	9.0	10.5	16.0	13.0	14.0
20	4.0	0.5	2.0	6.0	4.0	4.5	11.5	9.5	10.5	15.5	10.0	12.5
21	2.0	0.5	1.5	4.5	3.5	4.0	16.0	9.0	11.5	14.0	8.5	11.0
22	2.0	1.0	1.0	7.5	3.5	5.0	17.0	7.0	11.5	12.0	8.5	10.5
23	1.0	0.5	0.5	10.0	3.5	6.5	18.5	7.0	12.0	15.5	9.0	12.0
24	0.5	0.0	0.5	10.0	7.0	8.0	15.0	8.0	11.5	15.5	9.5	12.5
25	0.5	0.0	0.5	10.0	4.0	7.0	16.5	8.0	11.5	17.5	9.5	13.0
26	1.0	0.0	0.5	10.5	4.0	7.0	16.5	7.5	11.5	17.0	10.5	13.5
27	2.0	0.0	1.0	7.0	3.5	5.0	15.0	9.5	12.5	18.0	10.5	14.0
28	2.5	0.5	1.5	3.5	2.5	3.0	16.5	8.5	12.0	18.0	13.0	15.5
29	---	---	---	7.5	2.5	4.5	14.5	8.0	11.5	17.0	11.5	14.5
30	---	---	---	8.5	2.0	5.0	12.0	9.5	10.5	18.0	12.5	15.0
31	---	---	---	7.5	2.5	5.0	---	---	---	16.5	11.5	14.0
MONTH	4.0	0.0	1.0	10.5	0.0	3.4	19.0	1.0	9.2	18.5	7.0	12.1
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.5	10.5	13.5	20.5	14.0	17.0	21.0	16.5	18.5	16.5	12.5	14.0
2	14.5	11.5	13.0	21.5	14.5	18.0	19.5	15.5	17.5	16.5	12.5	14.5
3	16.5	11.5	13.5	21.5	16.5	19.0	18.0	15.0	16.5	15.5	14.0	14.5
4	17.5	12.0	14.5	21.0	16.5	18.5	17.5	14.5	15.5	15.5	12.0	13.5
5	17.0	12.0	14.5	22.0	15.5	18.5	17.5	14.0	15.5	16.0	11.5	13.5
6	15.5	12.5	13.5	19.0	15.5	17.0	19.0	14.5	16.5	---	---	---
7	14.5	12.0	13.0	19.0	15.5	17.0	20.0	15.0	17.0	---	---	---
8	16.0	12.0	13.5	17.5	14.5	15.5	19.0	15.0	17.0	20.0	14.5	17.0
9	19.5	11.5	15.0	16.5	14.0	15.5	19.0	14.5	16.5	20.0	14.5	17.0
10	17.5	13.5	15.5	15.5	14.0	14.5	17.0	14.0	15.5	19.0	15.5	17.5
11	15.0	13.0	14.0	17.5	12.5	15.0	19.0	14.0	16.5	---	---	---
12	17.5	10.5	14.0	19.0	13.5	16.0	19.0	14.0	16.5	---	---	---
13	19.0	13.0	16.0	19.5	14.0	16.5	19.5	14.0	16.5	16.5	15.0	15.5
14	21.0	13.0	16.5	17.5	15.0	16.5	20.0	15.5	17.5	16.5	14.0	15.0
15	21.0	13.5	17.0	20.0	15.5	17.5	20.5	16.0	18.0	16.5	12.0	14.0
16	21.5	13.5	17.5	19.0	14.5	16.5	21.0	16.0	18.0	17.5	11.5	14.5
17	20.5	14.0	17.5	19.0	15.0	17.0	19.5	16.0	17.5	18.5	15.0	16.5
18	21.0	15.0	18.0	19.5	14.5	17.0	21.0	15.5	18.0	18.0	15.0	16.5
19	20.5	13.5	16.5	19.5	14.0	16.5	20.5	16.5	18.5	15.0	12.0	13.5
20	19.5	12.0	16.0	18.5	15.0	17.0	21.0	16.5	18.5	15.0	9.5	12.0
21	20.0	12.5	16.0	18.5	15.5	16.5	19.5	17.0	18.5	13.0	10.5	12.0
22	19.0	14.0	16.5	17.5	13.5	15.5	19.0	15.0	17.0	14.5	12.0	13.0
23	18.5	15.0	17.0	18.0	13.0	15.5	18.0	14.5	16.5	14.5	9.5	12.0
24	22.0	15.5	18.0	18.0	13.5	15.5	20.0	15.0	17.5	13.0	11.5	12.5
25	19.0	16.0	17.5	19.0	14.5	16.5	---	---	---	12.5	9.0	11.0
26	16.0	13.5	14.5	19.0	16.5	17.5	---	---	---	12.0	10.5	11.0
27	18.0	12.0	14.5	22.5	16.0	18.5	---	---	---	---	---	---
28	17.5	14.0	15.5	22.5	17.5	20.0	---	---	---	---	---	---
29	20.0	14.0	16.5	23.0	16.5	19.5	17.0	14.0	15.5	10.5	7.0	9.0
30	20.0	13.5	16.5	23.0	17.5	19.5	16.5	13.0	14.5	10.0	6.0	8.0
31	---	---	---	20.0	15.5	17.5	15.0	12.5	14.0	---	---	---
MONTH	22.0	10.5	15.5	23.0	12.5	17.0	21.0	12.5	16.9	20.0	6.0	13.6

## WAUMANDEE CREEK BASIN

05378185 EAGLE CREEK, AT COUNTY HIGHWAY G, NEAR FOUNTAIN CITY, WI—Continued

SUSPENDED SOLIDS, DRIED AT 105 DEGREES CELSIUS, WATER, UNFILTERED, TONS PER DAY  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.31	0.24	0.66	0.92	0.64	0.40	0.82	0.54	0.11	0.87	0.50	0.09
2	0.30	0.27	0.66	0.79	0.66	0.39	0.68	0.52	0.09	0.88	0.49	0.08
3	0.28	0.29	0.62	0.78	0.66	0.40	0.58	0.47	0.08	2.1	0.53	0.08
4	37	0.32	0.65	0.81	0.63	0.38	0.48	1.4	0.08	2.0	0.53	0.08
5	3.4	0.36	0.61	0.84	0.67	0.40	0.40	6.8	0.09	0.94	0.53	0.08
6	6.2	0.39	0.62	0.83	0.60	0.40	0.33	0.94	0.37	0.97	0.59	0.08
7	1.7	0.41	0.64	0.88	0.57	0.40	0.28	0.87	0.37	1.1	0.58	0.08
8	0.77	0.45	0.59	0.85	0.56	0.38	0.24	0.65	2.5	0.92	0.58	0.08
9	0.46	0.49	0.62	0.84	0.54	0.37	0.19	3.0	0.56	0.89	0.59	0.08
10	1.2	0.53	0.67	0.76	0.53	0.41	0.16	1.7	2.5	0.92	0.62	0.08
11	0.64	0.55	0.71	0.76	0.53	0.44	0.15	59	0.67	0.88	0.63	0.07
12	0.77	0.59	0.73	0.81	0.51	0.42	0.15	5.4	0.46	0.82	0.62	0.10
13	0.56	0.63	0.72	0.79	0.51	0.45	0.15	1.4	0.35	0.78	0.63	0.10
14	0.28	0.64	0.75	0.74	0.49	721	0.16	23	0.38	0.76	0.62	0.09
15	0.27	0.63	0.75	0.67	0.49	482	0.19	2.2	0.42	0.77	0.53	0.09
16	0.26	0.63	0.78	0.66	0.49	187	43	0.85	0.47	0.75	0.46	0.09
17	0.26	0.63	0.81	0.67	0.51	31	15	0.75	0.53	0.72	0.40	0.08
18	0.27	0.64	0.95	0.66	0.51	1.4	3.3	0.69	0.59	0.67	0.34	0.54
19	0.25	0.65	0.88	0.66	0.55	2.5	14	0.67	0.59	0.65	0.31	2.9
20	0.24	0.63	0.84	0.63	116	7.5	14	0.87	0.60	0.64	0.27	0.09
21	0.27	0.65	0.83	0.60	39	20	2.8	0.51	0.61	0.62	0.22	0.08
22	0.25	0.64	0.81	0.55	7.1	2.4	1.2	0.45	0.64	0.58	0.19	0.09
23	0.23	0.65	0.78	0.56	3.4	1.0	1.1	0.39	0.68	0.55	0.17	0.09
24	0.22	0.65	0.76	0.60	2.4	0.88	0.99	0.33	0.87	0.52	0.14	0.08
25	0.23	0.63	0.77	0.63	1.7	0.76	0.90	0.28	0.88	0.51	0.14	0.09
26	0.22	0.63	0.75	0.58	0.84	0.65	0.80	0.24	0.88	0.53	0.13	0.09
27	0.21	0.63	0.77	0.57	0.44	75	0.74	0.21	0.84	0.50	0.10	0.10
28	0.21	0.65	0.80	0.59	0.40	47	0.68	0.19	0.88	0.47	0.09	0.10
29	0.21	0.68	0.83	0.58	---	2.9	0.60	0.16	0.88	0.46	0.09	0.09
30	0.22	0.66	0.88	0.59	---	1.2	0.56	0.15	0.86	0.46	0.08	0.09
31	0.23	---	0.91	0.62	---	0.97	---	0.13	---	0.48	0.09	---
TOTAL	57.92	16.44	23.15	21.82	181.93	1,590.40	104.63	114.76	19.83	24.71	11.79	5.86

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	1.4	1.8	2.3	1.6	4.3	2.4	2.0	1.3	3.0	1.8	1.3
2	2.8	1.5	1.8	2.0	1.6	4.1	2.3	1.9	1.2	3.0	1.8	1.2
3	2.6	1.5	1.7	1.9	1.6	4.3	2.2	1.8	1.2	6.5	1.9	1.2
4	75	1.6	1.8	2.0	1.6	4.1	2.1	3.9	1.2	5.3	1.9	1.3
5	11	1.6	1.7	2.0	1.6	4.3	2.1	22	1.3	3.8	1.9	1.3
6	18	1.6	1.7	2.0	1.5	4.5	2.0	4.2	1.7	3.9	2.1	1.3
7	6.3	1.6	1.8	2.1	1.4	4.4	2.0	3.9	1.7	4.7	2.1	1.2
8	3.3	1.7	1.6	2.0	1.4	4.3	1.9	2.0	8.4	3.8	2.1	1.2
9	2.9	1.7	1.7	2.0	1.4	4.2	1.8	10	2.4	3.7	2.1	1.2
10	4.6	1.7	1.9	1.8	1.3	4.7	1.7	3.7	8.4	3.9	2.2	1.2
11	2.9	1.7	2.0	1.8	1.3	5.0	1.7	100	2.8	3.8	2.2	1.1
12	3.3	1.7	2.0	1.9	1.3	4.8	1.7	17	2.3	3.6	2.2	1.6
13	2.7	1.7	2.0	1.8	1.3	5.3	1.7	8.3	2.3	3.5	2.2	1.4
14	2.5	1.7	2.1	1.7	1.2	1,800	1.7	57	2.3	3.4	2.2	1.4
15	2.3	1.7	2.0	1.6	1.2	1,450	1.9	20	2.3	3.5	2.1	1.3
16	2.2	1.7	2.1	1.5	1.2	669	82	6.7	2.4	3.5	2.0	1.3
17	2.1	1.7	2.2	1.6	1.3	140	32	2.7	2.4	3.4	1.9	1.3
18	2.2	1.7	2.5	1.6	1.3	11	11	2.6	2.5	3.1	1.8	3.7
19	2.0	1.7	2.4	1.6	1.5	12	29	2.6	2.4	3.0	1.8	14
20	1.9	1.7	2.2	1.5	358	27	29	3.9	2.4	2.9	1.8	1.3
21	2.2	1.7	2.2	1.4	339	56	9.3	2.2	2.4	2.7	1.6	1.2
22	2.0	1.7	2.1	1.3	108	14	4.6	2.1	2.5	2.5	1.5	1.2
23	1.8	1.8	2.0	1.3	28	6.8	3.7	2.0	2.6	2.3	1.5	1.2
24	1.7	1.8	2.0	1.4	13	6.6	3.3	1.8	3.3	2.2	1.4	1.2
25	1.7	1.7	2.0	1.5	7.2	6.4	3.0	1.7	3.3	2.1	1.5	1.2
26	1.7	1.7	1.9	1.4	5.2	6.2	2.7	1.6	3.3	2.1	1.5	1.3
27	1.6	1.7	2.0	1.4	4.4	199	2.6	1.6	3.1	2.0	1.3	1.4
28	1.5	1.8	2.0	1.4	4.2	170	2.4	1.6	3.2	1.8	1.3	1.3
29	1.5	1.8	2.1	1.4	---	14	2.1	1.4	3.1	1.7	1.3	1.3
30	1.5	1.8	2.2	1.4	---	2.6	2.0	1.5	3.0	1.7	1.3	1.3
31	1.4	---	2.3	1.5	---	2.5	---	1.4	---	1.8	1.3	---
TOTAL	172.2	50.4	61.8	52.1	893.6	4,651.4	247.9	295.1	82.7	98.2	55.6	53.4



05378185 EAGLE CREEK, AT COUNTY HIGHWAY G, NEAR FOUNTAIN CITY, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Discharge, cfs (00060)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, fltrd, mg/L as N (00608)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)
OCT 2002								
08...	1340	10	--	10	13	0.022	0.036	0.061
29...	1520	--	7.7	10	10	<0.013	0.019	0.036
NOV								
13...	0818	--	7.7	10	31	0.023	0.017	--
DEC								
12...	1138	--	6.9	10	39	<0.013	0.020	0.054
JAN 2003								
14...	1212	6.4	--	10	43	0.017	0.021	0.050
FEB								
18...	1128	--	6.8	10	28	0.032	0.015	0.036
20...	1435	--	12	50	503	0.180	--	0.523
20...	1630	--	32	50	1,810	0.839	--	2.28
20...	1725	--	54	50	2,530	0.778	--	3.36
20...	1815	--	67	50	3,080	0.923	--	3.54
21...	0025	--	48	50	1,140	1.98	--	3.16
21...	0250	--	33	50	800	2.21	--	3.11
21...	1248	--	17	10	227	1.83	--	1.89
21...	1306	--	18	50	276	1.78	--	1.91
21...	1750	--	28	50	582	1.52	--	2.20
22...	0430	--	16	50	210	1.70	--	2.02
25...	1158	7.4	--	10	92	0.082	--	0.170
MAR								
13...	1334	--	7.7	10	18	0.046	0.071	0.105
14...	1220	--	13	50	240	0.252	--	0.630
14...	1410	--	79	50	4,740	1.09	--	4.70
14...	1525	--	187	50	5,020	1.46	--	5.47
14...	1605	--	243	50	5,880	1.49	--	6.30
14...	1745	--	277	50	4,380	2.64	--	4.90
14...	1835	--	248	50	3,670	2.77	--	5.17
14...	2030	--	137	50	1,910	3.07	--	3.46
14...	2235	--	67	50	1,740	2.77	--	3.42
15...	1159	--	21	10	1,190	2.07	--	2.28
15...	1200	--	22	50	1,990	1.95	--	3.01
15...	1400	--	86	50	3,010	1.58	--	4.37
15...	1525	--	179	50	3,280	1.48	--	4.64
15...	2015	--	87	50	3,160	1.75	--	4.80
16...	0655	--	22	50	1,650	1.32	--	3.46
16...	1700	--	68	50	1,670	0.747	--	2.85
17...	0500	--	18	50	1,350	0.835	--	2.62
20...	0000	--	24	50	560	0.371	--	0.638
21...	1605	--	35	50	884	0.373	--	0.930
27...	0845	--	16	50	247	0.133	--	0.277
27...	1120	--	35	50	864	0.500	--	0.946
27...	1144	--	38	10	1,050	0.380	0.226	1.25
27...	1145	--	38	50	1,020	0.290	0.194	0.983
27...	1930	--	49	50	936	0.479	--	1.35
27...	2145	--	59	50	1,380	0.691	--	1.65
28...	0135	--	39	50	864	0.879	--	1.55
28...	1330	--	26	50	288	0.604	--	0.927
APR								
10...	1502	--	8.2	10	7	0.021	0.021	0.038
16...	0225	--	16	50	500	0.093	--	0.495
16...	0540	--	33	50	1,170	0.183	--	1.00
18...	0540	--	15	50	128	0.034	--	0.162
19...	2005	--	20	50	88	0.044	--	0.131
20...	2005	--	15	50	169	0.084	--	0.238
23...	1432	--	12	10	38	0.015	0.018	0.063
MAY								
05...	0010	--	16	50	238	0.090	--	0.269
05...	1240	--	18	50	149	0.173	--	0.273
08...	1250	--	9.8	10	24	0.013	0.014	0.036
09...	0305	--	17	50	120	0.130	--	0.268
11...	0055	--	17	50	224	0.036	--	0.283
11...	0340	--	26	50	604	0.092	--	0.656
11...	0515	--	35	50	684	0.224	--	1.11
11...	1715	--	26	50	928	0.084	--	0.461
14...	1035	--	17	50	99	0.065	0.043	0.146
14...	1210	--	25	50	552	0.072	0.060	0.556
14...	1335	--	35	50	734	0.072	0.151	0.701
14...	2150	--	21	50	195	0.158	0.115	0.345
20...	1045	--	11	10	22	<0.013	0.016	0.043
JUN								
04...	1052	--	7.1	10	4	0.020	0.031	0.031
18...	1045	--	7.1	10	32	0.099	0.034	0.067
JUL								
02...	1105	--	6.0	10	57	0.056	0.041	0.097
17...	1544	--	6.2	10	45	0.041	0.044	0.107
31...	1100	--	5.5	10	31	0.033	0.033	0.057

## WAUMANDEE CREEK BASIN

05378185 EAGLE CREEK, AT COUNTY HIGHWAY G, NEAR FOUNTAIN CITY, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, fltrd, mg/L as N (00608)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)
AUG 2003							
14...	0730	5.0	10	49	0.021	0.028	0.086
28...	1105	4.7	10	7	0.030	0.037	0.052
SEP							
11...	1252	4.0	10	7	<0.013	--	0.053
19...	0040	16	50	283	0.107	--	0.546
22...	1105	4.7	10	7	0.025	0.034	0.049

05378185 EAGLE CREEK, AT COUNTY HIGHWAY G, NEAR FOUNTAIN CITY, WI—Continued

PRECIPITATION QUANTITY

PERIOD OF RECORD.--October 1990 to June 1996, October 2002 to September 2003 (non-frozen precipitation).

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

REMARKS.--Rainfall estimated to be 0.00 for Jan. 28, 31, Feb. 5, and Mar. 8 because recorded precipitation interpreted as collector snowmelt.

EXTREMES FOR PERIOD OF RECORD.-- Maximum daily rainfall, 4.85 in., Aug. 13, 1995.

EXTREMES FOR CURRENT YEAR.-- Maximum daily rainfall, 2.01 in., Sept. 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.00	0.00
2	---	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.01	0.00
3	---	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.74	0.01	0.00
4	---	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.57	0.00	0.00
5	---	0.05	0.00	0.00	0.00	0.00	0.01	0.42	0.00	0.00	0.00	0.00
6	---	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.61	0.23	0.36	0.00
7	---	0.00	0.00	0.00	0.00	0.00	0.01	0.16	0.01	0.50	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.84	0.02	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.01	0.09	0.00	0.00
10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.71	0.16	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.00	0.00	0.00	0.00
12	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
14	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.08	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.07	1.04	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.01	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01
19	0.00	0.01	0.00	0.00	0.00	0.25	0.76	0.21	0.00	0.00	0.03	0.05
20	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00
21	0.02	0.03	0.00	0.00	0.12	0.10	0.00	0.00	0.00	0.02	0.00	0.07
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.30	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.13
27	0.00	0.00	0.00	0.00	0.00	0.95	0.00	0.00	0.05	0.00	0.00	0.03
28	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.17	0.06	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.02
30	0.00	0.00	0.00	0.00	---	0.00	0.01	0.25	0.00	0.14	0.00	0.01
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.28	0.00	---
TOTAL	---	0.09	0.30	0.00	0.45	1.65	2.17	5.48	3.12	2.76	0.71	3.02

## UPPER MISSISSIPPI RIVER MAIN STEM

05378500 MISSISSIPPI RIVER AT WINONA, MN

LOCATION.--Lat 44°03'21", long 91°38'16", in sec. 23, T.107 N., R.7 W., Winona County, Hydrologic Unit 07040003, on right bank at Winona pumping station in Winona, 9.5 mi upstream from Trempealeau River, and at mile 725.7 upstream from the Ohio River.

DRAINAGE AREA.--59,200 mi<sup>2</sup> (approximately).

PERIOD OF RECORD.--June 1928 to current year. Gage-height records collected in this vicinity since 1878 are contained in reports of Mississippi River Commission.

GAGE.--Water-stage recorder. Datum of gage is 639.64 ft above sea level (NGVD of 1929). June 10, 1928 to Apr. 15, 1931, nonrecording gage at site 800 ft upstream. Prior to Oct. 1, 1929, at datum 0.20 ft higher and Oct. 1, 1929 to Apr. 15, 1931, at datum 0.12 ft lower. Apr. 16, 1931 to Nov. 12, 1934, nonrecording gage at present site and datum. Since Mar. 31, 1937, auxiliary water-stage recorder 2.7 mi upstream at tailwater of navigation dam 5A.

REMARKS.--Records are good to fair for Oct. 1 to 31 and Apr. 19 to July 23, fair to poor for Nov. 1 to Apr. 18, and poor for Aug. 25 to Sep. 30 (see page 11). Some regulation by reservoirs, navigation dams, and power plants at low and medium stages. Daily discharges for some days were based in part on instantaneous discharges obtained from the U.S. Army Corps of Engineers for Lock and Dam 5A.

EXTREMES FOR PERIOD OF RECORD.--Minimum gage height, -3.38 ft, Aug. 31, 1934 (prior to dam construction in 1936); minimum gage height since 1938, after completion of dam, 1.95 ft, Jan. 27, 1944.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38,900	45,200	23,200	e22,200	e14,200	e13,600	37,300	66,900	51,200	56,000	23,000	12,000
2	39,400	43,700	23,000	e22,200	e14,200	e13,800	35,100	e62,500	47,500	60,900	22,200	12,200
3	39,300	40,900	e21,500	e21,300	e14,600	e13,800	32,300	e60,000	45,100	61,600	21,700	10,700
4	40,300	39,700	e19,900	e19,400	e15,400	e13,800	32,300	e56,100	44,100	63,100	22,700	9,930
5	42,000	38,800	e18,200	e18,400	e15,400	e13,700	34,500	e53,000	41,600	64,000	22,400	e9,200
6	47,700	37,800	e17,200	e18,500	e15,300	e13,700	34,100	e50,000	39,400	64,000	21,000	e9,400
7	53,100	37,200	e15,900	e18,500	e15,200	e13,000	30,300	e45,700	38,900	63,600	19,900	e9,600
8	57,100	36,500	e16,000	e18,500	e15,200	e12,700	28,600	45,600	38,700	62,600	20,000	e9,700
9	64,700	35,600	e17,400	e18,800	e15,100	e12,700	28,000	46,800	37,400	58,800	20,000	e10,800
10	70,900	34,600	e16,200	e19,000	e15,000	e12,800	26,400	48,600	36,900	56,500	19,700	e10,700
11	75,900	35,100	e19,700	e15,700	e15,000	e12,800	25,800	54,600	37,500	55,700	18,900	e10,000
12	77,700	35,300	e27,400	e17,800	e14,600	e12,800	26,700	63,900	39,600	52,900	17,500	e11,000
13	77,600	34,100	e27,800	e15,400	e14,300	e12,900	27,000	72,600	42,000	50,300	17,100	12,900
14	73,300	33,500	e25,800	e14,100	e14,000	e13,300	26,700	83,900	43,400	47,200	16,300	14,900
15	70,700	33,400	e23,500	e14,400	e14,000	e16,800	25,900	99,200	44,300	46,500	16,200	15,300
16	67,900	33,200	e23,100	e14,400	e14,100	23,300	26,200	114,000	43,600	47,500	16,400	14,500
17	64,400	32,400	e23,200	e14,400	e14,100	31,000	31,600	119,000	43,100	47,700	16,100	13,100
18	59,300	31,100	e22,900	e13,900	e14,100	33,600	41,300	115,000	41,600	48,300	13,100	11,900
19	56,800	30,400	e24,000	e14,000	e14,200	35,800	49,300	106,000	39,800	46,600	12,100	13,000
20	55,500	29,800	e24,500	e14,300	e14,100	38,300	60,300	97,800	38,900	44,100	14,400	13,200
21	53,200	29,400	e24,800	e14,400	e14,500	37,300	67,400	90,300	36,000	43,600	17,800	13,300
22	52,900	28,900	e25,700	e14,400	e14,900	36,900	70,500	85,400	32,700	40,400	17,300	12,900
23	52,000	28,400	e26,100	e14,800	e15,300	37,100	72,500	82,600	30,200	38,800	14,700	15,000
24	50,700	28,800	e24,700	e14,700	e15,200	36,000	76,100	80,500	29,200	35,600	11,600	14,200
25	49,400	28,700	e22,300	e14,600	e15,100	35,200	80,400	78,000	31,500	34,900	11,000	13,200
26	48,100	27,500	e20,400	e14,600	e14,900	35,400	81,600	74,700	35,600	34,200	10,800	10,900
27	47,800	26,100	e17,800	e14,500	e14,800	35,600	78,100	72,500	42,200	30,000	11,400	10,500
28	46,700	26,200	e16,800	e13,800	e14,700	36,700	74,800	70,100	46,400	29,200	11,700	11,600
29	45,900	25,100	e17,100	e13,800	---	38,000	71,900	67,600	49,600	28,900	11,400	11,600
30	45,800	23,800	e18,100	e13,800	---	39,200	68,800	63,400	54,100	25,600	11,800	10,700
31	46,100	---	e22,400	e13,800	---	38,900	---	56,400	---	23,700	12,300	---
TOTAL	1,711,100	991,200	666,600	502,400	411,500	770,500	1,401,800	2,282,700	1,222,100	1,462,800	512,500	357,930
MEAN	55,200	33,040	21,500	16,210	14,700	24,850	46,730	73,640	40,740	47,190	16,530	11,930
MAX	77,700	45,200	27,800	22,200	15,400	39,200	81,600	119,000	54,100	64,000	23,000	15,300
MIN	38,900	23,800	15,900	13,800	14,000	12,700	25,800	45,600	29,200	23,700	10,800	9,200
AC-FT	3,394,000	1,966,000	1,322,000	996,500	816,200	1,528,000	2,780,000	4,528,000	2,424,000	2,901,000	1,017,000	710,000
CFSM	0.93	0.56	0.36	0.27	0.25	0.42	0.79	1.24	0.69	0.80	0.28	0.20
IN.	1.08	0.62	0.42	0.32	0.26	0.48	0.88	1.43	0.77	0.92	0.32	0.22

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2003, BY WATER YEAR (WY)

MEAN	22,810	23,190	17,920	15,470	15,730	30,420	62,450	49,970	40,070	32,520	21,920	22,490
MAX	85,950	50,040	40,440	30,480	35,900	86,420	152,600	119,800	100,200	118,800	67,560	69,490
(WY)	(1987)	(1972)	(1992)	(1983)	(1984)	(1983)	(1965)	(2001)	(1993)	(1993)	(1993)	(1986)
MIN	6,774	7,367	6,286	6,742	7,874	9,023	12,810	11,930	8,450	7,063	5,391	6,790
(WY)	(1934)	(1934)	(1934)	(1940)	(1977)	(1934)	(1931)	(1931)	(1934)	(1934)	(1934)	(1933)

## 05378500 MISSISSIPPI RIVER AT WINONA, MN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1928 - 2003	
ANNUAL TOTAL	15,381,800		12,293,130			
ANNUAL MEAN	42,140		33,680		29,610	
HIGHEST ANNUAL MEAN					56,850	1986
LOWEST ANNUAL MEAN					9,742	1934
HIGHEST DAILY MEAN	124,000	Apr 19	119,000	May 17	264,000	Apr 20, 1965
LOWEST DAILY MEAN	15,900	Dec 7	9,200	Sep 5	2,250	Dec 29, 1933
ANNUAL SEVEN-DAY MINIMUM	17,200	Dec 5	9,900	Sep 3	3,210	Dec 27, 1933
MAXIMUM PEAK FLOW			119,000	May 17	268,000	Apr 19, 1965
MAXIMUM PEAK STAGE			13.11	May 17	(a)20.77	Apr 19, 1965
INSTANTANEOUS LOW FLOW					(b)1,940	Dec 12, 1980
ANNUAL RUNOFF (AC-FT)	30,510,000		24,380,000		21,450,000	
ANNUAL RUNOFF (CFSM)	0.71		0.57		0.50	
ANNUAL RUNOFF (INCHES)	9.67		7.72		6.80	
10 PERCENT EXCEEDS	66,100		64,500		60,700	
50 PERCENT EXCEEDS	41,500		28,400		21,400	
90 PERCENT EXCEEDS	18,500		13,000		10,000	

a From highwater mark.

b Result of ice jam upstream.

c Estimated.

## 053793305 TRAVERSE VALLEY CREEK, NORTH TRIBUTARY, NEAR INDEPENDENCE, WI

LOCATION.--Lat 44°23'55", long 91°33'05" in NE ¼ SE ¼ sec.11, T.22 N., R.10 W., Buffalo County, Hydrologic Unit 07040005, 100 ft upstream of culvert crossing at County Highway X at Bragger family farm, 6.7 mi west-northwest of Independence.

DRAINAGE AREA.--0.65 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Water levels are controlled by a 4.5 ft H flume. Elevation of gage is 970 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.176	0.156	0.140	0.127	0.132	0.141	0.171	0.144	0.163	0.123	0.132	0.107
2	0.163	0.156	0.136	0.127	0.134	0.107	0.168	0.141	0.161	0.123	0.130	0.106
3	0.158	0.157	0.131	0.126	0.133	0.106	0.165	0.138	0.162	0.199	0.131	0.106
4	0.518	0.156	0.134	0.128	0.129	0.105	0.160	0.157	0.159	0.158	0.128	0.105
5	0.197	0.157	0.132	0.130	0.127	0.102	0.154	0.214	0.158	0.135	0.127	0.104
6	0.207	0.157	0.133	0.128	0.124	0.105	0.150	0.178	0.183	0.134	0.129	0.104
7	0.183	0.159	0.136	0.133	0.123	0.107	0.148	0.172	0.169	0.155	0.125	0.105
8	0.176	0.164	0.129	0.137	0.123	0.104	0.146	0.164	0.197	0.132	0.123	0.105
9	0.166	0.164	0.131	0.133	0.121	0.102	0.144	0.225	0.164	0.133	0.122	0.105
10	0.213	0.165	0.136	0.123	0.121	0.101	0.143	0.199	0.190	0.139	0.123	0.104
11	0.191	0.159	0.138	0.115	0.122	0.136	0.142	0.547	0.165	0.132	0.121	0.103
12	0.188	0.155	0.139	0.119	0.118	0.144	0.141	0.315	0.159	0.128	0.119	0.126
13	0.170	0.154	0.136	0.116	0.119	0.160	0.141	0.252	0.156	0.125	0.119	0.112
14	0.169	0.153	0.137	0.114	0.119	2.23	0.141	0.315	0.154	0.133	0.118	0.109
15	0.167	0.148	0.140	0.113	0.116	2.49	0.157	0.271	0.150	0.136	0.118	0.106
16	0.161	0.148	0.134	0.115	0.115	1.07	0.420	0.235	0.148	0.128	0.118	0.106
17	0.164	0.147	0.136	0.114	0.117	0.266	0.288	0.214	0.146	0.132	0.118	0.104
18	0.171	0.149	0.156	0.116	0.121	0.159	0.234	0.196	0.161	0.129	0.115	0.149
19	0.164	0.149	0.148	0.116	0.119	0.194	0.269	0.198	0.145	0.128	0.119	0.135
20	0.160	0.150	0.143	0.115	0.527	0.226	0.295	0.183	0.138	0.131	0.120	0.109
21	0.171	0.149	0.138	0.113	0.460	0.430	0.249	0.176	0.135	0.130	0.118	0.110
22	0.165	0.146	0.136	0.109	0.151	0.184	0.217	0.174	0.137	0.127	0.114	0.109
23	0.162	0.149	0.132	0.107	0.114	0.157	0.200	0.168	0.138	0.125	0.113	0.106
24	0.163	0.145	0.129	0.118	0.107	0.154	0.185	0.165	0.147	0.124	0.112	0.106
25	0.169	0.142	0.129	0.120	0.107	0.146	0.175	0.162	0.151	0.125	0.119	0.104
26	0.169	0.140	0.126	0.119	0.109	0.143	0.166	0.160	0.138	0.129	0.115	0.109
27	0.166	0.138	0.129	0.123	0.112	0.381	0.161	0.161	0.131	0.126	0.111	0.107
28	0.166	0.142	0.134	0.126	0.152	0.414	0.156	0.167	0.139	0.123	0.112	0.104
29	0.166	0.149	0.134	0.124	---	0.205	0.148	0.165	0.144	0.122	0.110	0.104
30	0.163	0.139	0.137	0.127	---	0.181	0.149	0.174	0.127	0.121	0.108	0.103
31	0.158	---	0.129	0.132	---	0.175	---	0.164	---	0.144	0.108	---
TOTAL	5.680	4.542	4.198	3.763	4.172	10.725	5.583	6.294	4.615	4.129	3.695	3.272
MEAN	0.18	0.15	0.14	0.12	0.15	0.35	0.19	0.20	0.15	0.13	0.12	0.11
MAX	0.518	0.165	0.156	0.137	0.527	2.49	0.420	0.547	0.197	0.199	0.132	0.149
MIN	0.158	0.138	0.126	0.107	0.107	0.101	0.141	0.138	0.127	0.121	0.108	0.103
CFSM	0.28	0.23	0.21	0.19	0.23	0.53	0.29	0.31	0.24	0.20	0.18	0.17
IN.	0.33	0.26	0.24	0.22	0.24	0.61	0.32	0.36	0.26	0.24	0.21	0.19

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	0.18	0.17	0.16	0.14	0.18	0.30	0.20	0.21	0.30	0.18	0.15	0.17
MAX	0.18	0.18	0.18	0.17	0.21	0.35	0.21	0.21	0.45	0.22	0.19	0.21
(WY)	(2003)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)
MIN	0.17	0.15	0.14	0.12	0.15	0.25	0.19	0.20	0.15	0.13	0.12	0.11
(WY)	(2002)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 2001 - 2003

ANNUAL TOTAL	78.450	60.730	
ANNUAL MEAN	0.21	0.17	0.19
HIGHEST ANNUAL MEAN			0.22 2002
LOWEST ANNUAL MEAN			0.17 2003
HIGHEST DAILY MEAN	4.52 Jun 3	2.49 Mar 15	4.52 Jun 3, 2002
LOWEST DAILY MEAN	0.126 Dec 26	0.101 Mar 10	0.101 Mar 10, 2003
ANNUAL SEVEN-DAY MINIMUM	0.130 Dec 23	0.104 Sep 5	0.104 Sep 5, 2003
MAXIMUM PEAK FLOW		10.2 Mar 14	104.2 Jun 3, 2002
MAXIMUM PEAK STAGE		1.78 Mar 14	4.73 Jun 3, 2002
INSTANTANEOUS LOW FLOW		0.085 Mar 5	0.085 Mar 5, 2003
ANNUAL RUNOFF (CFSM)	0.33	0.26	0.30
ANNUAL RUNOFF (INCHES)	4.49	3.48	4.03
10 PERCENT EXCEEDS	0.26	0.20	0.24
50 PERCENT EXCEEDS	0.18	0.14	0.17
90 PERCENT EXCEEDS	0.14	0.11	0.12

053793305 TRAVERSE VALLEY CREEK, NORTH TRIBUTARY, NEAR INDEPENDENCE, WI—Continued

## WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: September 2001 to current year.

INSTRUMENTATION.--Continuous water temperature recorder and water-quality sampler since September 2001.

REMARKS.--Records represent water temperature at sensor within 0.5°C. Max, Min, and Mean water temperature estimated Aug. 2. Chemical analyses by the Wisconsin State Laboratory of Hygiene. Samples collected during periods of non-stormflow are grab samples. Samples during storms are composite samples collected by an automatic point sampler. The sample volume is the stream discharge that occurs between the time of the first sample and the last sample. The storm volume is the stream discharge that occurs between the start of the storm and the end of the storm. An approximate storm load (in pounds) can be computed by multiplying the storm volume (in thousands of cubic feet) by the constituent (in mg/L) by a factor of 0.0624.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum temperature, 19.0°C, June 30 and July 1, 2002, and Apr. 15, 2003; minimum, 0.0°C, Feb. 20, Mar. 10 and 14, 2003.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum temperature, 19.0°C, Apr. 15; minimum, 0.0°C, Feb. 20, Mar. 10 and 14.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.5	11.0	12.5	8.0	5.0	6.0	5.5	2.0	4.0	4.0	2.0	3.0
2	11.5	10.5	11.0	8.5	5.0	6.0	4.5	2.0	3.5	4.5	2.0	3.0
3	11.5	10.5	11.0	9.0	5.0	6.5	4.0	1.5	2.5	4.5	1.5	3.0
4	12.5	10.0	11.5	8.5	5.5	6.5	4.5	3.0	3.5	4.5	2.5	3.5
5	12.0	9.0	10.5	7.0	5.5	6.5	4.0	2.0	2.5	5.0	4.0	4.5
6	11.5	9.5	10.5	9.0	5.5	7.0	4.5	1.5	3.0	5.5	3.0	3.5
7	10.0	8.0	9.0	9.5	5.5	7.5	5.0	3.0	3.5	6.5	3.0	4.5
8	13.0	9.0	10.5	10.0	7.0	8.0	3.5	1.0	2.5	7.0	4.0	5.0
9	12.5	8.5	9.5	9.5	6.5	8.0	4.0	1.0	2.5	5.0	2.0	4.0
10	13.5	9.0	10.5	11.0	8.0	9.0	6.0	3.0	4.0	3.0	1.0	2.0
11	13.0	9.5	11.0	8.0	5.5	7.0	6.0	3.0	4.5	2.0	1.0	1.5
12	12.0	9.0	10.5	8.5	5.0	6.5	6.5	3.5	5.0	2.5	1.0	1.5
13	11.0	7.5	9.0	7.5	5.0	6.5	5.5	3.0	4.0	2.0	1.0	1.5
14	11.5	7.5	9.0	7.0	5.0	6.5	6.0	3.0	4.5	2.0	1.0	1.0
15	11.5	7.5	9.0	6.5	4.0	5.0	6.0	4.0	5.0	2.0	1.0	1.0
16	10.0	6.0	8.0	6.5	5.0	5.5	4.0	2.5	3.5	3.0	1.0	1.5
17	9.5	7.5	8.5	7.0	4.0	5.0	5.0	3.5	4.0	2.0	1.0	1.0
18	10.5	8.0	9.0	7.0	4.0	5.5	7.0	4.5	5.5	3.0	1.0	1.5
19	9.0	7.5	8.5	8.0	5.0	6.0	6.0	4.5	5.5	2.0	1.0	1.5
20	8.0	7.0	7.5	8.0	5.5	6.5	5.0	3.5	4.5	2.0	1.0	1.5
21	8.0	7.0	7.5	7.0	5.5	6.0	4.5	3.0	4.0	2.0	0.5	1.0
22	8.5	7.0	7.5	7.0	4.5	5.5	4.5	3.0	4.0	2.0	0.5	1.0
23	8.5	6.5	7.5	8.0	5.0	6.0	4.0	2.0	2.5	2.0	0.5	1.0
24	9.0	7.0	7.5	6.0	4.0	5.0	3.5	1.5	2.5	1.5	1.0	1.0
25	8.5	7.5	8.0	5.5	3.0	4.5	4.0	1.5	3.0	2.5	1.5	2.0
26	9.5	7.0	8.0	5.0	3.0	4.0	4.5	1.5	2.5	2.0	0.5	1.0
27	8.5	6.0	7.5	5.0	3.0	3.5	5.0	2.0	3.0	2.0	1.0	1.5
28	9.5	7.0	8.0	6.0	3.5	4.5	6.0	3.5	4.5	3.0	1.5	2.0
29	9.0	7.5	8.0	7.0	4.5	6.0	6.0	3.0	4.5	3.0	1.5	2.0
30	9.5	7.0	8.0	4.5	2.0	3.5	6.5	3.0	4.5	3.0	2.0	2.5
31	8.5	5.5	7.0	---	---	---	4.5	2.0	3.0	4.0	2.5	3.5
MONTH	14.5	5.5	9.1	11.0	2.0	6.0	7.0	1.0	3.7	7.0	0.5	2.2

## 053793305 TRAVERSE VALLEY CREEK, NORTH TRIBUTARY, NEAR INDEPENDENCE, WI--Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.0	3.0	3.5	5.0	1.5	2.5	13.0	3.5	7.0	15.0	6.5	9.5
2	4.0	3.0	3.5	3.5	0.5	1.5	10.0	4.0	6.5	14.5	6.5	9.0
3	4.0	2.0	3.5	2.0	0.5	1.0	4.0	2.0	3.0	15.0	5.5	9.0
4	3.0	0.5	1.5	3.0	0.5	1.5	2.5	1.0	1.5	9.5	6.0	7.5
5	3.0	0.5	1.5	3.0	0.5	1.5	7.0	0.5	2.5	9.0	7.5	8.0
6	3.0	0.5	1.5	4.0	0.5	2.0	6.5	0.5	2.5	11.5	7.5	9.0
7	2.0	0.5	1.0	4.5	1.5	2.5	4.0	0.5	2.0	11.5	7.5	9.0
8	3.5	0.5	2.0	3.0	0.5	1.5	11.0	0.5	3.0	12.0	6.5	9.0
9	2.0	0.5	1.0	2.5	0.5	1.0	11.5	0.5	3.5	13.0	8.0	10.0
10	2.5	0.5	1.5	2.5	0.0	1.0	13.5	0.5	5.0	12.0	7.0	9.0
11	2.5	0.5	1.5	5.5	1.0	3.0	16.0	2.5	7.0	9.5	8.0	8.5
12	2.0	0.5	1.0	5.0	2.0	3.0	16.0	2.0	6.5	13.0	7.0	9.5
13	4.0	1.0	2.0	6.0	1.5	3.0	14.0	2.0	7.0	13.5	7.0	9.5
14	3.5	1.0	2.0	5.5	0.0	1.5	18.5	7.0	11.5	11.5	8.0	9.0
15	3.5	1.0	2.0	5.0	0.5	2.0	19.0	9.5	13.0	14.0	7.0	9.5
16	3.5	0.5	1.5	5.0	1.0	3.0	9.5	5.0	7.0	14.0	7.5	10.0
17	4.0	0.5	2.0	9.0	2.5	5.0	6.5	5.0	5.5	14.0	7.5	10.5
18	5.5	1.5	3.0	6.5	4.5	5.5	7.0	5.5	6.0	15.0	8.0	11.0
19	5.5	1.0	3.0	6.5	4.0	5.5	7.5	5.5	6.5	13.0	9.5	11.0
20	6.5	0.0	2.5	6.0	3.5	4.5	7.5	6.5	7.0	14.5	7.5	10.0
21	4.0	1.0	2.0	5.5	3.5	4.0	10.0	5.5	7.0	13.5	6.5	9.5
22	3.5	0.5	2.0	7.0	3.0	5.0	11.5	4.5	7.5	10.5	7.0	8.5
23	2.0	0.5	1.0	12.0	2.0	6.0	12.0	4.5	7.5	14.0	8.0	10.0
24	2.0	0.5	1.0	9.5	4.0	6.5	11.5	5.0	8.0	14.0	7.5	10.5
25	2.0	0.5	1.0	11.0	1.5	5.0	12.5	6.0	8.5	14.5	8.0	10.5
26	3.0	0.5	1.5	12.0	1.5	5.0	13.0	5.5	8.5	14.5	8.0	10.5
27	4.5	0.5	2.0	5.0	2.5	4.0	12.5	7.0	9.0	15.0	8.5	11.0
28	5.5	1.5	2.5	4.5	2.5	4.0	13.5	6.5	9.0	15.0	9.5	11.5
29	---	---	---	7.5	3.0	4.5	13.5	6.0	9.0	14.5	9.0	11.0
30	---	---	---	7.5	2.5	4.5	10.0	7.0	8.0	16.0	9.5	11.5
31	---	---	---	8.0	1.5	4.5	---	---	---	14.5	9.0	11.0
MONTH	6.5	0.0	1.9	12.0	0.0	3.4	19.0	0.5	6.5	16.0	5.5	9.8
	JUNE			JULY			AUGUST			SEPTEMBER		
1	15.0	8.0	11.0	16.0	10.5	12.5	14.5	11.5	12.5	14.0	10.5	12.0
2	13.0	8.5	10.5	17.5	11.0	13.0	14.0	11.5	12.5	14.5	10.5	12.0
3	14.5	9.0	11.0	17.0	11.5	14.0	14.0	11.0	12.0	13.5	11.0	12.0
4	15.0	9.0	11.5	15.5	11.5	13.0	13.0	11.0	12.0	14.0	10.5	11.5
5	15.5	9.0	11.5	16.5	11.5	13.0	13.0	11.0	12.0	14.0	9.5	11.5
6	11.5	10.0	10.5	14.5	11.5	12.5	15.0	11.5	12.5	14.5	11.0	12.5
7	11.5	9.5	10.5	15.0	11.5	13.0	14.5	11.5	12.5	14.5	11.5	12.5
8	13.5	9.5	11.0	14.5	11.0	12.5	14.0	11.5	12.5	15.0	11.5	12.5
9	14.0	9.0	11.5	13.0	11.0	12.0	14.5	11.0	12.5	15.0	11.5	12.5
10	14.5	10.0	11.5	12.0	11.5	11.5	13.0	11.5	12.0	14.5	12.0	13.0
11	12.0	9.5	11.0	14.5	10.5	12.0	15.0	11.5	12.5	15.5	12.5	13.5
12	13.5	9.5	11.0	15.5	10.5	12.5	14.5	11.0	12.5	13.5	11.5	13.0
13	15.5	9.5	12.0	15.5	10.5	12.5	15.0	11.0	12.5	13.0	11.5	12.0
14	15.5	10.0	12.5	13.0	11.0	12.5	14.5	11.5	13.0	13.5	10.5	12.0
15	16.0	10.0	12.5	15.0	11.5	13.0	15.0	12.0	13.0	13.5	10.5	11.5
16	16.5	10.5	12.5	15.0	11.0	12.5	15.5	12.0	13.0	14.0	10.0	11.5
17	16.0	10.0	12.5	14.0	11.5	12.5	14.5	11.5	12.5	15.0	11.5	12.5
18	16.0	11.0	13.0	15.5	11.0	12.5	16.0	12.0	13.5	15.0	11.5	13.0
19	15.5	10.0	12.0	15.0	10.5	12.5	15.0	12.0	13.5	12.5	10.0	11.5
20	15.5	9.5	12.0	14.5	11.5	12.5	16.0	12.5	13.5	13.0	9.0	11.0
21	16.0	9.5	12.0	14.5	11.5	12.5	15.0	12.0	13.5	11.5	9.5	10.5
22	15.5	10.5	12.5	13.5	11.0	12.0	15.0	11.5	13.0	12.5	10.0	11.5
23	14.0	11.0	12.5	15.0	10.5	12.0	14.5	12.0	13.0	12.5	9.5	10.5
24	16.5	11.5	13.5	14.5	10.5	12.0	16.0	12.0	13.5	11.5	10.0	11.0
25	13.0	12.0	12.5	15.5	11.0	12.5	13.0	12.0	13.0	11.5	9.0	10.0
26	13.0	10.5	12.0	15.0	12.5	13.0	15.5	12.0	13.0	11.0	9.5	10.5
27	14.5	10.0	12.0	15.5	12.0	13.0	15.0	11.5	12.5	10.0	9.5	10.0
28	13.5	11.0	12.0	15.0	11.5	13.0	14.5	11.5	13.0	10.5	8.5	10.0
29	15.0	10.5	12.5	15.0	11.0	12.5	14.5	11.5	12.5	10.5	8.0	9.0
30	15.0	10.5	12.5	15.0	11.5	13.0	14.0	10.5	12.0	10.0	7.5	8.5
31	---	---	---	14.5	11.5	12.5	13.0	10.5	11.5	---	---	---
MONTH	16.5	8.0	11.8	17.5	10.5	12.6	16.0	10.5	12.7	15.5	7.5	11.5



053793305 TRAVERSE VALLEY CREEK, NORTH TRIBUTARY, NEAR INDEPENDENCE, WI--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (00417)	Chloride, water, fltrd, mg/L (00940)	Residue on evap. at 105degC wat unfltrd, mg/L (00500)	Residue total at 105 deg. C, suspended, mg/L (00530)	Residue volatile, suspended, mg/L (00535)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd, mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)
OCT 2002													
25...	1400	0.17	70	8.3	499	243	5.9	312	6	<2	<0.14	<0.14	<0.013
NOV													
13...	1305	0.15	70	8.2	507	244	5.8	316	6	<2	0.34	<0.14	<0.013
DEC													
12...	1603	0.14	70	8.2	501	239	6.0	318	8	<2	0.40	0.14	<0.013
JAN 2003													
14...	1704	0.12	70	7.9	494	242	5.9	308	6	--	0.18	<0.14	<0.013
FEB													
18...	1035	0.12	70	8.2	491	238	5.8	300	3	<2	0.33	<0.14	<0.013
MAR													
13...	1024	0.11	70	8.2	493	236	5.6	304	5	<2	0.40	0.32	0.036
APR													
30...	1325	0.14	70	8.3	496	242	6.5	336	19	3	<0.14	0.23	0.023
MAY													
20...	1215	0.18	70	8.3	499	245	6.0	326	13	2	0.49	0.15	0.017
JUN													
18...	1105	0.15	70	8.3	500	245	--	328	15	4	0.16	<0.14	0.021
JUL													
17...	1105	0.13	70	8.2	502	245	6.2	326	14	3	0.19	0.20	0.018
AUG													
14...	1305	0.11	70	8.0	500	247	5.8	332	6	<2	0.32	<0.14	<0.013

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)
OCT 2002			
25...	2.36	0.015	0.024
NOV			
13...	2.40	0.015	0.015
DEC			
12...	2.30	0.015	0.024
JAN 2003			
14...	2.36	0.018	0.025
FEB			
18...	2.41	0.009	0.013
MAR			
13...	2.24	0.022	0.030
APR			
30...	2.25	0.016	0.033
MAY			
20...	2.28	0.017	0.029
JUN			
18...	1.60	0.016	0.032
JUL			
17...	1.97	0.019	0.038
AUG			
14...	2.08	0.016	0.027

053793305 TRAVERSE VALLEY CREEK, NORTH TRIBUTARY, NEAR INDEPENDENCE, WI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
COMPOSITE SAMPLES

Beginning date	Beginning time	Ending date	Ending time	Sam-pling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conduc-tance, wat unfl lab, uS/cm 25 degC (90095)	ANC, wat unfl fixed end pt, lab, mg/L as CaCO3 (00417)	Chlor-ide, water, fltrd, mg/L (00940)	Residue on evap. at 105degC wat unfl mg/L (00500)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Residue vola-tile, sus-pended, mg/L (00535)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
OCT 2002 04-04	0326	20021004	0754	50	7.5	206	92	3.2	1,350	1,130	134	0.55	5.4
FEB 2003 20-21	1500	20030221	2315	50	7.0	391	133	20.4	452	146	30	4.7	3.4
MAR 14-15	1130	20030315	0358	50	6.8	250	83	12.6	1,300	1,080	144	4.4	11
MAR 15-16	1121	20030316	0436	50	7.0	285	87	18.3	1,400	1,170	108	4.7	10
MAR 16-17	1024	20030317	1219	50	7.4	356	120	21.2	980	708	68	3.9	6.6
MAR 21-21	1115	20030321	1951	50	7.9	389	133	19.6	1,220	904	88	1.8	4.5
MAY 11-11	0237	20030511	0821	50	7.8	354	162	4.7	992	796	124	0.67	4.1
MAY 11-11	1102	20030511	1806	50	8.2	469	218	6.6	346	48	10	0.38	0.64
MAY 14-14	0919	20030514	1,03	50	--	--	--	5.8	340	49	10	0.17	0.63
JUL 03-03	0356	20030703	0751	50	8.1	343	162	4.4	630	410	69	0.44	2.9
SEP 18-19	2001	20030919	0105	50	8.2	413	190	6.8	364	116	22	0.89	1.6

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Tri-a-zine screen, wat unfl ELISA, ug/L as atrazin (34757)	Sus-pended sedi-ment concen-tration mg/L (80154)	Runoff volume thousands of cubic feet (99904)
OCT 2002 04-04	0.021	1.38	0.419	1.93	--	--	28
FEB 2003 20-21	1.09	2.80	1.17	1.70	--	149	78
MAR 14-15	1.36	1.02	1.25	2.65	--	1,090	190
MAR 15-16	1.58	1.46	1.54	2.69	--	1,200	210
MAR 16-17	1.41	2.30	1.17	1.83	--	730	86
MAR 21-21	0.400	5.42	0.300	0.960	--	938	24
MAY 11-11	0.110	3.18	0.105	0.747	0.3	754	18
MAY 11-11	0.033	2.52	0.052	0.112	0.2	44	14
MAY 14-14	0.018	2.31	0.039	0.108	--	49	14
JUL 03-03	0.035	1.77	0.113	0.591	--	410	6.3
SEP 18-19	<0.013	1.58	0.197	0.374	--	116	6.0

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

STORM BEGINNING DATE	STORM BEGINNING TIME	STORM ENDING DATE	STORM ENDING TIME	STORM RUNOFF VOLUME, THOUSANDS OF CUBIC FEET	PEAK DISCHARGE (CFS)	NUMBER OF SUBSAMPLES
10-04-02	0300	10-04-02	0810	28.40	6.11	40
02-20-03	1415	02-22-03	0245	81.181	1.94	41
03-14-03	0945	03-15-03	0759	196.404	10.24	39
03-15-03	0800	03-16-03	0759	221.988	10.12	32
03-16-03	0800	03-17-03	0930	87.782	3.16	16
03-21-03	0845	03-21-03	2330	30.983	1.17	11
05-11-03	0130	05-11-03	0900	19.768	2.07	20
05-11-03	1030	05-11-03	1800	14.705	0.64	16
05-14-03	0630	05-14-03	1930	16.701	0.50	16
07-03-03	0335	07-03-03	0745	6.696	1.43	12
09-18-03	1855	09-19-03	0200	7.430	0.45	10

053793305 TRAVERSE VALLEY CREEK, NORTH TRIBUTARY, NEAR INDEPENDENCE, WI—Continued

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

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

REMARKS.--Rainfall estimated to be 0.00 Jan. 7, 31, Feb. 2, 21, Mar. 16-17, and Apr. 5-6 because recorded precipitation interpreted as collector snowmelt.

EXTREMES FOR PERIOD OF RECORD.-- Maximum daily rainfall, 2.36 in., June 3, 2002.

EXTREMES FOR CURRENT YEAR.-- Maximum daily rainfall, 1.80 in., Sept. 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.00	0.03	0.00
2	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
3	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	1.36	0.20	0.00
4	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.00	0.54	0.00	0.00
5	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
6	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.65	0.16	0.11	0.00
7	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.48	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.80	0.01	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.01	0.23	0.00	0.00
10	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.55	0.13	0.00	0.00
11	0.00	0.01	0.00	0.00	0.00	0.00	0.00	1.44	0.00	0.06	0.00	0.00
12	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.73
13	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.38	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.01	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.00	0.00	0.00	0.00	0.00
17	0.02	0.00	0.02	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.00	0.00
18	0.21	0.00	0.42	0.00	0.00	0.00	0.03	0.00	0.40	0.00	0.00	1.80
19	0.01	0.00	0.00	0.00	0.00	0.27	0.78	0.42	0.00	0.00	0.00	0.11
20	0.02	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.01	0.00
21	0.28	0.00	0.00	0.00	0.00	0.21	0.07	0.00	0.00	0.00	0.00	0.03
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00
25	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.05	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.09
27	0.01	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.04	0.00	0.00	0.03
28	0.01	0.00	0.00	0.00	0.00	0.34	0.03	0.06	0.62	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.13	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.22	0.00	0.01	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.69	0.00	---
TOTAL	3.33	0.03	0.44	0.00	0.00	1.85	2.94	5.53	3.96	4.10	0.42	2.81
CAL YR	2002	TOTAL		32.76								
WTR YR	2003	TOTAL		25.41								

## 053793306 TRAVERSE VALLEY CREEK, SOUTH TRIBUTARY, NEAR INDEPENDENCE, WI

LOCATION.--Lat 44°23'44", long 91°33'13" in SE ¼ SE ¼ sec.11, T.22 N., R.10 W., Buffalo County, Hydrologic Unit 07040005, 1,300 ft upstream of confluence with north unnamed tributary at Bragger family farm, 6.7 mi west-northwest of Independence.

DRAINAGE AREA.--0.35 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Water levels are controlled by a 3.0 ft H flume. Elevation of gage is 965 ft above NGVD of 1929, 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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.053	0.046	0.030	0.026	0.031	0.027	0.030	0.024	0.027	0.023	0.021	0.016
2	0.050	0.048	0.033	0.025	0.031	0.023	0.030	0.024	0.028	0.023	0.020	0.016
3	0.048	0.048	0.025	0.025	0.031	0.022	0.029	0.022	0.029	0.047	0.021	0.016
4	0.144	0.048	0.025	0.025	0.030	0.021	0.027	0.027	0.028	0.029	0.020	0.016
5	0.059	0.049	0.026	0.027	0.028	0.021	0.026	0.039	0.028	0.024	0.020	0.016
6	0.068	0.048	0.025	0.026	0.027	0.020	0.025	0.033	0.032	0.025	0.021	0.016
7	0.056	0.048	0.026	0.027	0.026	0.019	0.024	0.030	0.031	0.029	0.021	0.016
8	0.055	0.050	0.025	0.028	0.026	0.018	0.023	0.028	0.036	0.023	0.021	0.016
9	0.052	0.050	0.025	0.027	0.026	0.016	0.023	0.039	0.029	0.023	0.021	0.016
10	0.071	0.050	0.026	0.026	0.026	0.017	0.023	0.034	0.034	0.024	0.021	0.016
11	0.056	0.047	0.029	0.025	0.026	0.060	0.024	0.095	0.030	0.023	0.020	0.016
12	0.059	0.047	0.029	0.025	0.026	0.042	0.023	0.048	0.027	0.023	0.020	0.020
13	0.052	0.047	0.025	0.025	0.027	0.043	0.024	0.039	0.027	0.022	0.020	0.018
14	0.052	0.047	0.025	0.025	0.027	1.22	0.023	0.059	0.026	0.022	0.020	0.018
15	0.052	0.045	0.026	0.025	0.027	1.72	0.027	0.043	0.026	0.020	0.020	0.017
16	0.051	0.045	0.025	0.024	0.027	1.37	0.082	0.039	0.025	0.022	0.021	0.017
17	0.051	0.045	0.026	0.024	0.028	0.236	0.044	0.037	0.027	0.023	0.020	0.016
18	0.057	0.046	0.034	0.023	0.029	0.090	0.039	0.036	0.030	0.023	0.019	0.030
19	0.051	0.047	0.028	0.023	0.029	0.087	0.050	0.039	0.026	0.022	0.020	0.023
20	0.050	0.046	0.028	0.023	0.261	0.072	0.051	0.034	0.025	0.022	0.019	0.017
21	0.058	0.045	0.027	e0.022	0.150	0.207	0.045	0.029	0.024	0.022	0.019	0.018
22	0.050	0.044	0.027	e0.022	0.040	0.048	0.040	0.029	0.024	0.021	0.018	0.017
23	0.049	0.046	0.026	e0.021	0.026	0.048	0.036	0.029	0.025	0.020	0.017	0.017
24	0.050	0.043	0.025	e0.023	0.025	0.052	0.034	0.029	0.027	0.020	0.017	0.017
25	0.051	0.041	0.025	e0.024	0.025	0.041	0.032	0.029	0.027	0.020	0.018	0.015
26	0.049	0.038	0.025	e0.025	0.026	0.036	0.030	0.029	0.025	0.020	0.018	0.014
27	0.049	0.035	0.026	e0.026	0.026	0.128	0.030	0.029	0.023	0.020	0.017	0.014
28	0.049	0.036	0.028	e0.027	0.026	0.127	0.028	0.030	0.025	0.020	0.016	0.015
29	0.049	0.043	0.028	e0.028	---	0.038	0.027	0.028	0.025	0.019	0.017	0.015
30	0.048	0.037	0.028	0.029	---	0.032	0.027	0.030	0.023	0.020	0.016	0.015
31	0.048	---	0.026	0.031	---	0.031	---	0.028	---	0.023	0.015	---
TOTAL	1.737	1.355	0.832	0.782	1.133	5.932	0.976	1.088	0.819	0.717	0.594	0.509
MEAN	0.056	0.045	0.027	0.025	0.040	0.19	0.033	0.035	0.027	0.023	0.019	0.017
MAX	0.144	0.050	0.034	0.031	0.261	1.72	0.082	0.095	0.036	0.047	0.021	0.030
MIN	0.048	0.035	0.025	0.021	0.025	0.016	0.023	0.022	0.023	0.019	0.015	0.014
CFSM	0.16	0.13	0.08	0.07	0.12	0.55	0.09	0.10	0.08	0.07	0.05	0.05
IN.	0.18	0.14	0.09	0.08	0.12	0.63	0.10	0.12	0.09	0.08	0.06	0.05

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

	2001	2002	2003	2001	2002	2003	2001	2002	2003	2001	2002	2003
MEAN	0.050	0.049	0.035	0.028	0.044	0.13	0.044	0.048	0.077	0.042	0.036	0.038
MAX	0.056	0.052	0.042	0.030	0.046	0.19	0.056	0.062	0.13	0.061	0.051	0.052
(WY)	(2003)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)
MIN	0.044	0.047	0.029	0.026	0.042	0.061	0.032	0.035	0.028	0.022	0.020	0.019
(WY)	(2002)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 2001 - 2003
ANNUAL TOTAL	20.570	16.720	
ANNUAL MEAN	0.056	0.046	0.051
HIGHEST ANNUAL MEAN			0.057
LOWEST ANNUAL MEAN			0.046
HIGHEST DAILY MEAN	1.23 Jun 3	1.72 Mar 15	1.72 Mar 15, 2003
LOWEST DAILY MEAN	(a)0.025 Jan 1-3	0.014 Sep 26,27	0.014 Sep 26,27, 2003
ANNUAL SEVEN-DAY MINIMUM	0.025 Dec 3	0.015 Sep 24	0.015 Sep 24, 2003
MAXIMUM PEAK FLOW		6.67 Mar 15	31.9 Jun 3, 2002
MAXIMUM PEAK STAGE		1.55 Mar 15	3.04 Jun 3, 2002
INSTANTANEOUS LOW FLOW		0.013 Sep 26	0.013 Sep 26, 2003
ANNUAL RUNOFF (CFSM)	0.16	0.13	0.15
ANNUAL RUNOFF (INCHES)	2.19	1.78	1.99
10 PERCENT EXCEEDS	0.07	0.05	0.07
50 PERCENT EXCEEDS	0.05	0.03	0.04
90 PERCENT EXCEEDS	0.03	0.02	0.02

(a) Also occurred Jan. 7, 19, Dec. 3-4, 6, 8-9, 13-14, 16, 24-26

(e) Estimated due to ice effect or missing record

053793306 TRAVERSE VALLEY CREEK, SOUTH TRIBUTARY, NEAR INDEPENDENCE, WI—Continued

## WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 2001 to current year.

INSTRUMENTATION.--Continuous water temperature recorder and water-quality sampler since October 2001.

REMARKS.--Records represent water temperature at sensor within 0.5°C. Max, Min, and Mean water temperature estimated May 8. Chemical analyses by the Wisconsin State Laboratory of Hygiene. Samples collected during periods of non-stormflow are grab samples. Samples during storms are composite samples collected by an automatic point sampler. The sample volume is the stream discharge that occurs between the time of the first sample and the last sample. The storm volume is the stream discharge that occurs between the start of the storm and the end of the storm. An approximate storm load (in pounds) can be computed by multiplying the storm volume (in thousands of cubic feet) by the constituent (in mg/L) by a factor of 0.0624.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum temperature, 19.5°C, June 26, 30, and July 21, 2002; minimum, 0.0°C, Feb. 20 and Mar. 14-16, 2003.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum temperature, 16.5°C, Apr. 14; minimum, 0.0°C, Feb. 20 and Mar. 14-16.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.0	11.0	12.5	5.0	4.5	4.5	6.0	3.5	5.0	5.5	4.5	5.0
2	12.0	10.5	11.0	6.0	4.0	4.5	4.5	3.5	4.0	5.5	4.0	4.5
3	11.0	10.5	10.5	6.0	4.0	5.0	5.0	3.5	4.5	5.5	3.5	4.5
4	13.0	10.0	11.5	6.0	4.5	5.0	6.0	5.0	5.0	5.5	4.0	5.0
5	11.0	9.0	10.0	6.0	4.5	5.5	5.0	3.5	4.5	6.0	5.0	5.5
6	11.0	9.0	10.0	7.0	4.5	6.0	5.5	4.0	5.0	5.0	4.5	5.0
7	9.0	7.5	8.5	7.5	4.5	6.5	6.0	4.5	5.5	6.5	5.0	5.5
8	11.5	8.5	10.0	8.5	6.0	7.5	4.5	3.0	4.0	6.5	5.5	5.5
9	10.5	7.5	9.0	8.5	6.0	7.5	5.5	3.0	4.5	5.5	4.0	5.0
10	12.0	8.5	10.0	9.0	7.5	8.0	6.5	4.5	5.5	4.0	3.0	3.5
11	12.0	9.0	10.5	7.5	5.0	6.5	6.5	4.5	5.5	4.0	2.5	3.0
12	11.5	8.5	10.5	6.5	4.5	5.5	6.5	4.5	5.5	4.5	3.0	3.5
13	9.0	7.0	8.0	6.5	4.0	5.5	6.0	4.5	5.5	4.0	2.5	3.5
14	9.5	6.5	8.0	6.0	4.0	5.5	6.5	4.5	5.5	3.5	2.5	3.0
15	9.5	6.5	8.0	5.0	3.5	4.0	6.5	5.0	6.0	4.0	2.5	3.0
16	8.0	5.0	6.5	5.0	4.0	4.5	5.5	4.0	5.0	4.0	3.0	3.5
17	8.5	6.5	7.5	4.5	3.5	4.0	6.0	5.5	5.5	3.5	2.5	3.0
18	9.5	6.5	8.0	5.0	3.5	4.0	6.5	4.5	6.0	4.0	2.5	3.5
19	8.0	7.0	7.5	5.0	4.0	4.5	6.5	5.5	6.0	4.5	2.5	3.5
20	7.0	6.0	6.5	6.0	4.0	5.0	6.0	5.0	5.5	4.0	2.5	3.0
21	6.5	5.5	6.0	5.5	4.5	5.0	5.5	4.5	5.0	3.5	2.0	2.5
22	7.5	6.0	6.5	5.0	4.0	4.5	5.5	4.5	5.0	3.0	2.0	2.5
23	7.5	5.5	6.5	5.5	4.0	5.0	5.0	4.0	4.5	3.0	1.5	2.5
24	9.5	5.5	6.5	4.5	4.0	4.0	5.5	4.0	4.5	4.0	3.0	3.5
25	7.5	6.5	7.0	4.5	3.5	4.0	5.5	4.0	4.5	4.5	3.0	3.5
26	8.0	6.5	7.0	5.0	3.5	4.0	5.0	3.5	4.0	3.0	2.0	2.5
27	7.5	5.0	6.5	5.5	3.5	4.0	5.5	4.0	5.0	4.5	2.0	3.5
28	8.0	6.0	7.0	5.5	4.0	4.5	6.0	4.5	5.5	4.5	3.0	4.0
29	8.0	6.5	7.5	5.0	4.0	4.5	6.5	4.5	5.5	4.0	2.5	3.0
30	8.0	6.0	7.0	4.0	3.5	3.5	6.5	4.5	5.5	5.0	3.5	4.5
31	6.5	4.5	5.5	---	---	---	4.5	4.0	4.5	5.5	2.5	4.5
MONTH	14.0	4.5	8.3	9.0	3.5	5.1	6.5	3.0	5.1	6.5	1.5	3.8

## 053793306 TRAVERSE VALLEY CREEK, SOUTH TRIBUTARY, NEAR INDEPENDENCE, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.0	3.0	3.5	5.5	2.5	3.5	11.5	4.0	7.0	15.0	7.0	10.0
2	3.5	2.0	3.5	4.0	1.5	2.5	9.5	4.5	6.5	16.0	6.0	9.5
3	3.5	2.0	3.0	4.0	1.5	3.0	4.5	3.5	4.0	16.0	5.5	9.5
4	2.0	1.5	1.5	4.5	2.0	3.0	4.0	3.0	3.5	10.5	6.0	7.5
5	3.5	1.0	2.5	4.5	1.0	2.5	7.0	2.5	4.5	9.0	7.0	8.0
6	3.0	1.0	2.0	5.5	1.5	3.5	7.5	2.0	4.0	14.0	7.5	9.0
7	3.0	0.5	2.0	5.5	2.5	4.0	5.0	2.5	3.5	13.0	7.0	9.0
8	4.0	1.5	3.0	4.0	1.5	2.5	11.0	2.5	5.5	13.0	7.0	9.5
9	4.0	1.0	2.5	3.0	0.5	1.5	12.0	2.5	6.0	13.5	7.5	9.5
10	3.5	1.0	2.0	4.0	0.5	2.0	13.0	3.0	7.0	12.5	7.0	9.0
11	4.0	1.5	2.5	6.0	0.5	3.0	14.0	4.5	8.0	9.0	8.0	8.5
12	3.0	1.5	2.0	3.5	1.5	2.5	14.0	4.0	8.0	11.5	7.0	9.0
13	4.0	2.5	3.0	6.5	0.5	3.0	13.5	4.0	8.0	12.5	7.0	9.0
14	4.5	2.5	3.5	5.0	0.0	1.5	16.5	7.0	10.5	11.5	7.5	8.5
15	4.0	2.0	3.0	1.5	0.0	0.5	16.0	8.5	11.0	13.0	7.0	9.0
16	4.0	1.5	2.5	1.0	0.0	0.5	9.0	5.0	6.5	13.0	7.0	9.5
17	4.5	2.0	3.0	2.5	0.5	1.5	6.5	5.0	5.5	13.0	7.5	9.5
18	5.5	2.5	4.0	3.0	1.5	2.5	7.0	5.5	6.0	13.5	7.5	10.0
19	5.5	2.5	4.0	8.5	1.0	3.5	7.5	5.5	6.5	12.0	8.5	9.5
20	6.0	0.0	2.5	6.0	1.0	3.5	7.5	6.5	6.5	13.0	7.0	9.0
21	2.0	0.5	1.0	4.5	1.0	2.5	10.0	5.5	7.0	12.5	6.5	9.0
22	4.0	1.5	2.5	6.0	2.5	4.0	11.5	5.0	7.5	10.0	7.0	8.0
23	3.5	2.0	2.5	8.0	4.0	5.0	12.0	5.0	8.0	13.0	7.5	9.5
24	3.5	1.5	2.0	6.5	3.0	5.0	12.0	5.5	8.0	13.5	7.0	9.5
25	4.0	1.5	2.5	7.5	4.0	5.0	13.5	6.0	9.0	13.5	7.0	9.5
26	5.0	1.5	2.5	8.5	4.0	5.5	14.0	5.5	9.0	13.0	7.5	9.5
27	5.5	2.5	3.5	5.0	1.5	3.5	12.5	7.0	9.5	14.0	7.5	10.0
28	6.0	2.5	4.0	3.5	1.0	2.5	15.5	6.5	10.0	13.5	8.0	10.0
29	---	---	---	9.5	2.0	4.5	13.5	6.0	9.0	13.0	8.0	9.5
30	---	---	---	10.0	1.5	5.0	11.0	7.0	8.0	14.0	8.0	10.0
31	---	---	---	8.5	2.5	5.0	---	---	---	13.0	8.0	10.0
MONTH	6.0	0.0	2.7	10.0	0.0	3.1	16.5	2.0	7.1	16.0	5.5	9.2
	JUNE			JULY			AUGUST			SEPTEMBER		
1	13.0	7.5	9.5	12.5	9.5	10.5	12.5	10.5	11.0	12.0	10.0	11.0
2	11.0	8.0	9.0	14.5	9.5	11.0	12.0	10.5	11.0	12.0	9.5	11.0
3	13.0	8.5	10.0	15.5	10.0	12.0	12.0	10.5	11.0	11.5	10.0	11.0
4	13.0	8.0	10.0	12.0	10.0	11.0	11.5	10.0	11.0	12.0	9.5	10.5
5	13.5	8.0	10.0	12.0	10.0	11.0	11.5	10.0	11.0	12.0	9.0	10.5
6	10.0	8.5	9.5	11.5	10.0	10.5	13.0	10.5	11.0	12.0	10.0	11.0
7	10.5	9.0	9.5	12.5	10.0	11.0	12.5	10.5	11.0	12.5	10.5	11.0
8	12.0	8.5	10.0	11.5	10.0	10.5	12.5	10.5	11.0	12.5	10.5	11.0
9	13.0	8.5	10.0	11.5	10.0	10.5	12.5	10.0	11.0	12.5	10.5	11.0
10	12.5	9.0	10.0	10.5	10.0	10.5	12.0	10.0	11.0	12.5	11.0	11.5
11	11.0	8.5	9.5	11.5	10.0	10.5	13.0	10.5	11.5	13.0	11.5	12.0
12	12.0	8.5	10.0	12.0	10.0	10.5	12.5	10.0	11.0	12.5	10.5	11.5
13	13.0	9.0	10.5	12.0	9.5	10.5	13.0	10.0	11.0	11.5	10.5	11.5
14	13.0	9.0	10.5	11.5	10.0	10.5	12.5	10.5	11.0	12.0	10.0	11.0
15	13.0	9.0	10.5	12.5	10.0	11.0	13.0	10.5	11.5	11.5	9.5	10.5
16	13.5	9.0	10.5	12.0	10.0	11.0	13.0	11.0	11.5	12.0	9.5	10.5
17	13.0	9.0	10.5	12.0	10.0	11.0	12.5	10.5	11.5	12.5	10.5	11.5
18	13.0	9.0	10.5	13.0	10.0	11.0	13.5	11.0	12.0	12.5	11.0	11.5
19	12.5	8.5	10.0	12.5	9.5	11.0	13.0	11.0	11.5	12.0	9.5	10.5
20	13.0	8.5	10.0	13.0	10.0	11.0	13.5	11.0	12.0	11.5	8.5	10.0
21	12.5	8.5	10.0	12.5	10.0	11.0	13.0	11.0	12.0	10.5	9.0	10.0
22	12.5	9.0	10.5	12.0	9.5	10.5	12.5	10.5	11.5	11.5	9.5	10.5
23	12.0	9.5	10.5	12.5	9.5	10.5	12.5	10.5	11.5	11.0	9.0	10.0
24	13.0	9.5	11.0	12.5	9.5	10.5	13.5	11.0	12.0	11.0	9.5	10.0
25	11.0	10.0	10.5	13.0	10.0	11.0	12.0	11.0	11.5	10.5	9.0	9.5
26	11.0	9.5	10.0	12.5	11.0	11.5	13.0	11.0	12.0	10.5	9.5	10.0
27	12.0	9.0	10.0	13.0	10.5	11.5	12.5	10.5	11.5	10.0	9.5	9.5
28	11.5	9.5	10.0	12.5	10.0	11.0	12.5	10.5	11.5	10.0	8.5	9.5
29	12.0	9.5	10.5	13.0	10.0	11.0	12.5	10.5	11.0	10.0	8.0	9.0
30	12.5	9.5	10.5	12.5	10.0	11.0	12.0	10.0	11.0	9.5	7.5	8.5
31	---	---	---	13.5	10.0	11.0	11.5	10.0	10.5	---	---	---
MONTH	13.5	7.5	10.1	15.5	9.5	10.9	13.5	10.0	11.3	13.0	7.5	10.6

053793306 TRAVERSE VALLEY CREEK, SOUTH TRIBUTARY, NEAR INDEPENDENCE, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	ANC, wat unfltrd lab, mg/L as CaCO3 (00417)	Chloride, water, fltrd, mg/L (00940)	Residue on evap. at 105degC wat unfltrd, mg/L (00500)	Residue total at 105 deg. C, suspended, mg/L (00530)	Residue volatile, suspended, mg/L (00535)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd, mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)
OCT 2002 25...	1420	0.05	70	8.2	523	262	6.0	322	3	<2	<0.14	0.23	<0.013
NOV 13...	1245	0.05	70	8.2	529	262	5.3	320	<2	<2	0.47	<0.14	0.021
DEC 12...	1554	0.03	70	8.0	524	255	5.1	324	3	<2	0.39	<0.14	<0.013
JAN 2003 14...	1722	0.02	70	7.8	515	258	5.4	316	7	--	0.18	<0.14	<0.013
FEB 18...	1020	0.02	70	8.3	513	257	5.5	316	<2	<2	0.26	<0.14	0.023
MAR 13...	1042	0.02	70	8.2	524	255	6.4	318	2	<2	0.59	0.43	0.061
APR 30...	1215	0.03	70	8.2	519	258	6.5	330	4	<2	<0.14	0.22	0.030
MAY 20...	1235	0.03	70	8.1	531	259	6.9	326	4	<2	0.27	0.15	0.021
JUN 18...	1125	0.03	70	--	--	--	--	--	16	3	0.19	0.22	0.031
JUL 17...	1045	0.02	70	8.1	525	262	6.1	324	5	<2	0.22	<0.14	0.023
AUG 14...	1320	0.02	70	8.0	522	264	5.4	334	2	<2	0.39	<0.14	<0.013

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)
OCT 2002 25...	1.44	0.029	0.049
NOV 13...	1.54	0.026	0.026
DEC 12...	1.65	0.027	0.045
JAN 2003 14...	1.76	0.024	0.048
FEB 18...	1.69	0.016	0.024
MAR 13...	1.55	0.081	0.100
APR 30...	1.50	0.018	0.037
MAY 20...	1.99	0.024	0.040
JUN 18...	1.61	0.029	0.069
JUL 17...	1.56	0.025	0.050
AUG 14...	1.38	0.026	0.047

053793306 TRAVERSE VALLEY CREEK, SOUTH TRIBUTARY, NEAR INDEPENDENCE, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

## COMPOSITE SAMPLES

Beginning date	Beginning time	Ending date	Ending time	Sam- pling method, code (82398)	pH, water, unfltrd lab, std units (00403)	Specif. conduc- tance, wat unfl- trd lab, uS/cm 25 degC (90095)	ANC, wat unfl- fixed end pt, lab, mg/L as CaCO3 (00417)	Chlor- ide, water, fltrd, mg/L (00940)	Residue on evap. at 105degC wat unfl- mg/L (00500)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Residue vola- tile, sus- pended, mg/L (00535)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
OCT 2002 04-04	0308	20021004	0806	50	7.7	270	122	4.5	716	528	128	0.53	4.1
FEB 2003 20-21	1434	20030221	2207	50	7.1	313	103	15.7	338	88	16	2.7	2.0
MAR 14-14	1239	20030314	1453	50	6.8	214	58	19.4	870	682	88	2.2	6.6
MAR 14-15	1717	20030315	0238	50	7.0	213	67	11.0	378	192	34	2.5	4.7
MAR 15-15	1106	20030315	1529	50	6.9	175	57	7.9	794	632	66	2.9	6.1
MAR 16-17	0954	20030317	1405	50	7.2	224	72	11.6	650	442	40	3.1	5.1
MAR 21-21	1221	20030321	2147	50	8.1	284	102	6.6	308	89	12	1.8	2.4
MAY 11-11	0252	20030511	0843	50	8.0	434	199	6.7	438	176	26	0.42	1.2
MAY 11-11	1049	20030511	1817	50	8.1	534	237	9.7	408	71	9	0.37	0.75
MAY 14-14	0925	20030514	1948	50	8.3	487	231	7.7	336	31	5	0.33	0.44
JUL 03-03	0352	20030703	0703	50	8.0	336	157	5.9	524	312	56	0.92	2.4
SEP 18-18	2103	20030918	2355	50	8.2	465	199	13.0	378	74	15	1.1	1.4

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)	Tri- zine screen, wat unfl- ELISA, ug/L as atrazin (34757)	Sus- pended sedi- ment concen- tration mg/L (80154)	Runoff volume thousands of cubic feet (99904)
OCT 2002 04-04	<0.013	1.09	0.522	1.72	--	538	7.4
FEB 2003 20-21	0.270	2.17	1.75	2.14	--	89	32
MAR 14-14	0.244	0.985	0.866	2.39	--	694	32
MAR 14-15	0.851	1.26	1.35	1.85	--	195	29
MAR 15-15	0.872	0.913	1.49	1.64	--	643	85
MAR 16-17	1.20	1.47	1.49	2.68	--	468	110
MAR 21-21	0.430	3.95	0.440	0.619	--	89	15
MAY 11-11	0.027	2.70	0.075	0.340	0.1	172	3.4
MAY 11-11	0.032	5.25	0.055	0.132	--	65	2.4
MAY 14-14	0.021	2.79	0.052	0.122	--	33	3.1
JUL 03-03	0.104	0.985	0.143	0.852	--	308	2.0
SEP 18-18	<0.013	1.07	0.375	0.711	--	79	1.1



053793306 TRAVERSE VALLEY CREEK, SOUTH TRIBUTARY, NEAR INDEPENDENCE, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

STORM BEGINNING DATE	STORM BEGINNING TIME	STORM ENDING DATE	STORM ENDING TIME	STORM RUNOFF VOLUME, THOUSANDS OF CUBIC FEET	PEAK DISCHARGE (CFS)	NUMBER OF SUBSAMPLES
10-04-02	0300	10-04-02	0830	7.629	1.41	22
02-20-03	1315	02-21-03	2230	33.653	1.02	42
03-14-03	1045	03-14-03	1600	56.782	6.29	29
03-14-03	1601	03-15-03	0714	50.440	5.33	10
03-15-03	0715	03-15-03	1529	87.186	6.67	38
03-16-03	0845	03-17-03	0800	110.169	4.38	27
03-21-03	1030	03-21-03	2330	16.399	0.73	13
05-11-03	0130	05-11-03	0900	3.741	0.26	16
05-11-03	1030	05-11-03	1745	2.350	0.10	12
05-14-03	0650	05-14-03	1930	3.413	0.16	16
07-03-03	0335	07-03-03	0730	2.151	0.40	12
09-18-03	1855	09-19-03	0115	1.754	0.14	8

053793306 TRAVERSE VALLEY CREEK, SOUTH TRIBUTARY, NEAR INDEPENDENCE, WI—Continued

## PRECIPITATION QUANTITY

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

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

REMARKS.--Rainfall estimated to be 0.00 for Jan. 30, Feb. 2, Mar. 11, 16, 23, and Apr. 5-6 because recorded precipitation interpreted as collector snowmelt.  
Rainfall estimated for May 8 due to equipment malfunction.

EXTREMES FOR PERIOD OF RECORD.-- Maximum daily rainfall, 2.31 in., June 3, 2002.

EXTREMES FOR CURRENT YEAR.-- Maximum daily rainfall, 1.76 in., Sept. 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.00	0.02	0.00
2	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
3	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	0.22	0.00
4	1.37	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.49	0.00	0.00
5	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00
6	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.13	0.13	0.00
7	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.49	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.29	0.81	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.16	0.00	0.00
10	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.58	0.17	0.00	0.00
11	0.01	0.01	0.00	0.00	0.00	0.00	0.00	1.40	0.00	0.07	0.00	0.00
12	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72
13	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.01
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.36	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.00	0.00	0.00	0.00	0.00
17	0.02	0.00	0.03	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
18	0.23	0.00	0.43	0.00	0.00	0.00	0.02	0.00	0.41	0.00	0.00	1.76
19	0.00	0.00	0.00	0.00	0.00	0.25	0.79	0.45	0.00	0.00	0.00	0.11
20	0.01	0.00	0.00	0.00	0.00	0.14	0.14	0.00	0.00	0.00	0.00	0.00
21	0.28	0.00	0.00	0.00	0.00	0.25	0.08	0.00	0.00	0.00	0.00	0.03
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00
25	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.04	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.08
27	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.00	0.03	0.00	0.00	0.03
28	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.08	0.67	0.00	0.00	0.02
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.17	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.22	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.69	0.00	---
TOTAL	3.47	0.04	0.46	0.00	0.00	1.92	2.91	5.35	4.04	3.91	0.45	2.76

e Estimated

## 442405091333300 TRAVERSE VALLEY CREEK TRIBUTARY, RAIN GAGE #1, NEAR INDEPENDENCE, WI

LOCATION.--Lat 44°24'05", long 91°33'33", in NE ¼ NW ¼ sec.11, T.22 N., R.10 W., Buffalo County, Hydrologic Unit 07040005, at hilltop of point 0.5 mi northwest of Bragger family farm and 7.0 mi west-northwest of Independence.

PERIOD OF RECORD.--May 2002 to current year.

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

REMARKS.--Rainfall estimated to be 0.00 for Jan. 31, Feb. 2, 10, Mar. 13, 16-17, and Apr. 6 because recorded precipitation interpreted as collector snowmelt.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 2.20 in., June 3, 2002.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.80 in., Sept. 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.00	0.04	0.00
2	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00
3	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.21	0.00
4	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.46	0.00	0.00
5	0.07	0.04	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00
6	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.70	0.14	0.18	0.00
7	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.54	0.00	0.00
8	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.83	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.28	0.00	0.00
10	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.58	0.12	0.00	0.00
11	0.00	0.02	0.00	0.00	0.00	0.00	0.00	1.24	0.00	0.09	0.00	0.00
12	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.43	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.00	0.00	0.00	0.00	0.00
17	0.02	0.00	0.02	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00
18	0.22	0.00	0.44	0.00	0.00	0.00	0.02	0.00	0.47	0.00	0.00	1.80
19	0.00	0.00	0.00	0.00	0.00	0.28	0.71	0.29	0.00	0.00	0.00	0.10
20	0.00	0.00	0.00	0.00	0.00	0.06	0.14	0.00	0.00	0.00	0.00	0.00
21	0.32	0.00	0.00	0.00	0.00	0.27	0.09	0.00	0.00	0.00	0.00	0.02
22	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
24	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00
25	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.09
27	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.04	0.00	0.00	0.03
28	0.02	0.00	0.00	0.00	0.00	0.26	0.00	0.05	0.61	0.00	0.00	0.01
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.11	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.22	0.00	0.01	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.74	0.00	---
TOTAL	3.61	0.06	0.46	0.00	0.00	1.71	3.03	5.33	4.07	4.08	0.50	2.75

## 442436091331800 TRAVERSE VALLEY CREEK TRIBUTARY, RAIN GAGE #2, NEAR INDEPENDENCE, WI

LOCATION.--Lat 44°24'36", long 91°33'18", in NE ¼ SE ¼ sec.2, T.22 N., R.10 W., Buffalo County, Hydrologic Unit 07040005, in hillside rock quarry at end of small gravel road intersecting with Schneider Road, 1.0 mi north-northwest of Bragger family farm and 7.1 mi west-northwest of Independence.

PERIOD OF RECORD.--May 2002 to current year.

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

REMARKS.--Data deleted Mar. 1 to Apr. 30 due to malfunctioning gage. Rainfall estimated to be 0.00 for Jan. 7 and 14 because recorded precipitation interpreted as collector snowmelt.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 2.09 in., June 3, 2002.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.80 in., Sept. 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.00
2	0.13	0.00	0.00	0.00	0.00	---	---	0.00	0.00	0.00	0.10	0.00
3	0.02	0.00	0.00	0.00	0.00	---	---	0.00	0.00	1.35	0.20	0.00
4	1.34	0.00	0.00	0.00	0.00	---	---	0.88	0.00	0.60	0.00	0.00
5	0.08	0.04	0.00	0.00	0.00	---	---	0.82	0.00	0.00	0.00	0.00
6	0.40	0.00	0.00	0.00	0.00	---	---	0.01	0.70	0.13	0.15	0.00
7	0.06	0.00	0.00	0.00	0.00	---	---	0.17	0.00	0.58	0.00	0.00
8	0.01	0.00	0.00	0.00	0.00	---	---	0.31	0.79	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	---	---	0.41	0.00	0.29	0.00	0.00
10	0.64	0.00	0.00	0.00	0.00	---	---	0.35	0.61	0.07	0.00	0.00
11	0.00	0.01	0.00	0.00	0.00	---	---	1.68	0.00	0.06	0.00	0.00
12	0.22	0.00	0.00	0.00	0.00	---	---	0.00	0.00	0.01	0.00	0.75
13	0.00	0.00	0.00	0.00	0.00	---	---	0.00	0.00	0.00	0.00	0.02
14	0.00	0.00	0.00	0.00	0.00	---	---	0.94	0.00	0.43	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	---	---	0.00	0.00	0.01	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	---	---	0.00	0.00	0.00	0.00	0.00
17	0.01	0.00	0.03	0.00	0.00	---	---	0.00	0.00	0.00	0.00	0.00
18	0.21	0.00	0.46	0.00	0.00	---	---	0.00	0.59	0.00	0.00	1.80
19	0.00	0.00	0.00	0.00	0.00	---	---	0.35	0.00	0.00	0.00	0.10
20	0.00	0.00	0.00	0.00	0.00	---	---	0.00	0.00	0.00	0.01	0.00
21	0.24	0.00	0.00	0.00	0.00	---	---	0.00	0.00	0.03	0.00	0.02
22	0.11	0.00	0.00	0.00	0.00	---	---	0.02	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	---	---	0.00	0.03	0.00	0.00	0.00
24	0.01	0.00	0.00	0.00	0.00	---	---	0.00	0.41	0.00	0.00	0.00
25	0.08	0.00	0.00	0.00	0.00	---	---	0.00	0.27	0.00	0.08	0.00
26	0.00	0.00	0.00	0.00	0.00	---	---	0.00	0.04	0.01	0.00	0.09
27	0.00	0.00	0.00	0.00	0.00	---	---	0.00	0.03	0.00	0.00	0.03
28	0.01	0.00	0.00	0.00	0.00	---	---	0.05	0.64	0.00	0.00	0.02
29	0.00	0.00	0.00	0.00	---	---	---	0.00	0.06	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	---	---	0.25	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	---	---	0.00	---	0.81	0.00	---
TOTAL	3.57	0.05	0.49	0.00	0.00	---	---	6.24	4.17	4.38	0.54	2.83

05379400 TREMPEALEAU RIVER AT ARCADIA, WI

LOCATION.--Lat 44°15'15", long 91°30'19" in SW 1/4 sec.32, T.21 N., R.9 W., Trempealeau County, Hydrologic Unit 07040005, on upstream side of River Street bridge, 300 ft north of State Highway 95 and 93 bridge, on left bank in village of Arcadia.

DRAINAGE AREA.--552 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1960 to September 1977, July 2001 to current year.

REVISED RECORDS.--WDR WI-70-1: 1968-69: 1975-77(M).

GAGE.--Water-stage recorder. Datum of gage is 719.59 ft above NGVD of 1929. July 1960 to September 1977, non-recording gage at site 300 ft downstream at datum 0.02 ft higher.

REMARKS.--Records good except those for periods July 29 to Aug. 6, Aug. 17-24, Aug. 31 to Sept. 1, and Sept. 3-15, which are fair, and those for estimated daily discharges, which are poor (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	615	385	e320	e310	e240	e260	466	480	395	349	317	217
2	501	377	e320	e290	e240	e260	458	463	379	336	319	214
3	439	368	e320	e260	e230	e260	441	437	370	422	325	212
4	656	353	e320	e230	e220	e260	416	414	362	468	319	210
5	833	356	e320	e250	e210	e260	388	553	359	435	297	214
6	639	368	e320	e260	e210	e260	365	749	369	399	288	216
7	576	374	e300	e270	e210	e260	362	634	438	403	290	216
8	506	376	e290	e270	e220	e250	356	605	512	402	280	218
9	480	382	e270	e270	e220	e240	357	696	571	380	269	212
10	514	386	e240	e260	e220	e240	364	762	582	379	260	212
11	613	379	e250	e240	e230	e240	368	1,130	611	383	258	212
12	541	366	e270	e210	e230	e250	382	1,330	537	386	261	220
13	501	358	e290	e200	e230	e300	402	957	467	365	258	258
14	462	357	e320	e210	e230	e500	421	945	429	346	257	272
15	431	350	e310	e210	e240	e1,100	451	993	401	352	254	261
16	412	342	e300	e210	e240	e1,400	790	804	380	358	260	248
17	403	340	e300	e220	e250	e1,500	1,170	660	364	341	257	238
18	415	337	e300	e220	e260	913	872	603	355	328	260	244
19	431	332	e280	e230	e270	634	735	573	361	317	266	339
20	426	331	e300	e230	e310	637	1,050	619	337	310	259	307
21	439	333	e300	e230	e300	645	1,050	645	321	309	252	273
22	468	337	e300	e230	e290	580	844	567	312	309	246	256
23	462	344	e300	e230	e280	477	675	511	311	303	239	248
24	442	344	e300	e230	e270	455	607	485	345	296	238	243
25	434	341	e300	e230	e270	445	570	463	359	292	239	233
26	436	337	e290	e220	e270	423	552	441	357	296	244	234
27	433	335	e280	e220	e270	523	538	428	344	288	239	237
28	422	e330	e280	e220	e270	1,210	521	423	349	277	232	237
29	412	e320	e290	e220	---	1,100	507	405	387	292	225	234
30	403	e320	e300	e230	---	679	494	411	382	310	222	228
31	394	---	e300	e240	---	508	---	417	---	298	217	---
TOTAL	15,139	10,558	9,180	7,350	6,930	17,069	16,972	19,603	12,046	10,729	8,147	7,163
MEAN	488	352	296	237	248	551	566	632	402	346	263	239
MAX	833	386	320	310	310	1,500	1,170	1,330	611	468	325	339
MIN	394	320	240	200	210	240	356	405	311	277	217	210
CFSM	0.88	0.64	0.54	0.43	0.45	1.00	1.02	1.15	0.73	0.63	0.48	0.43
IN.	1.02	0.71	0.62	0.50	0.47	1.15	1.14	1.32	0.81	0.72	0.55	0.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

MEAN	321	319	278	253	297	702	659	454	404	331	325	357
MAX	634	625	402	565	663	1,437	1,839	1,203	787	654	1,060	817
(WY)	(1973)	(1973)	(1973)	(1973)	(1976)	(1973)	(1965)	(1973)	(2002)	(1968)	(1975)	(1972)
MIN	175	190	148	157	153	250	259	228	165	139	124	190
(WY)	(1965)	(1965)	(1968)	(1968)	(1968)	(1964)	(1964)	(1964)	(1964)	(1964)	(1964)	(1977)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1960 - 2003
ANNUAL TOTAL	173,312	140,884	
ANNUAL MEAN	475	386	391
HIGHEST ANNUAL MEAN			703
LOWEST ANNUAL MEAN			206
HIGHEST DAILY MEAN	1,710	Jun 4	(a)1,500 Mar 17
LOWEST DAILY MEAN	(a)240	Dec 10	(a)200 Jan 13
ANNUAL SEVEN-DAY MINIMUM	(a)273	Dec 7	(a)211 Jan 12
MAXIMUM PEAK FLOW			(b)12,000 Aug 23, 1975
MAXIMUM PEAK STAGE		(c)7.28	Mar 17
INSTANTANEOUS LOW FLOW			8.64 Aug 23, 1975
ANNUAL RUNOFF (CFSM)	0.86	0.70	110 (d)Aug 8, 1964
ANNUAL RUNOFF (INCHES)	11.68	9.49	0.71
10 PERCENT EXCEEDS	681	612	9.61
50 PERCENT EXCEEDS	428	330	
90 PERCENT EXCEEDS	310	230	190

- (a) Ice affected
- (b) Based on calculation by USACE
- (c) Result of ice jam
- (d) Also occurred Aug. 9, 19, 1964
- (e) Estimated due to ice effect or missing record

## 05379500 TREMPEALEAU RIVER AT DODGE, WI

LOCATION.--Lat 44°07'54", long 91°33'12" (revised) in NE ¼ SE ¼ sec.10, T.19 N., R.10 W., Trempealeau County, Hydrologic Unit 07040005, near left bank on downstream side of County Trunk Highways J and P bridge in Dodge, 9.0 mi upstream from mouth.

DRAINAGE AREA.--643 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1913 to September 1919, April 1934 to current year.

REVISED RECORDS.--WSP 1238: Drainage area. WSP 1388: 1919(M). WSP 1438: 1914, 1915-18(M), 1934-44(M), 1946-49(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 661.42 ft above NGVD of 1929. Prior to July 14, 1977, nonrecording gage at same site and datum. Prior to Sept. 16, 1966, datum 2.00 ft higher.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	633	478	430	e330	e260	e280	579	520	489	409	345	262
2	588	476	e420	e320	e260	e280	545	507	474	392	344	262
3	521	471	e360	e290	e260	e280	533	496	463	432	337	259
4	627	470	e230	e260	e250	e280	518	490	456	509	341	259
5	914	471	e240	e270	e240	e280	497	591	447	478	337	261
6	784	476	e270	e290	e240	e280	481	780	456	440	328	260
7	705	474	e300	e300	e240	e270	475	768	506	449	324	259
8	619	474	e310	e300	e240	e270	469	697	569	435	322	257
9	575	473	e320	e300	e230	e270	459	751	626	428	310	255
10	585	471	e330	e300	e230	e260	454	818	655	422	302	252
11	670	466	e340	e280	e230	e270	454	997	679	419	295	251
12	667	459	e350	e270	e230	e280	456	1,400	631	414	291	270
13	624	455	e350	e250	e230	e450	456	1,380	558	409	289	300
14	586	457	e350	e240	e230	e800	457	1,070	512	390	285	300
15	549	457	e360	e240	e230	e1,100	470	1,240	484	385	283	293
16	522	460	e360	e240	e230	e1,500	659	1,050	460	396	283	290
17	508	457	e360	e240	e240	e1,800	1,160	837	448	388	280	282
18	511	456	e370	e240	e260	e2,000	1,120	740	438	374	276	280
19	519	453	e370	e240	e280	1,290	876	689	437	364	277	385
20	515	451	e350	e240	e300	815	994	690	423	364	286	383
21	522	452	e330	e240	e310	794	1,200	714	409	364	276	335
22	536	452	e330	e240	e300	760	1,030	685	402	361	271	318
23	542	452	e330	e240	e300	650	810	616	399	356	268	306
24	524	449	e330	e240	e300	589	700	581	426	350	265	300
25	517	447	e320	e240	e300	561	642	557	438	342	270	295
26	514	442	e310	e240	e290	532	604	534	436	341	280	292
27	513	e440	e310	e240	e280	588	577	516	420	342	274	298
28	510	e430	e300	e240	e300	1,060	558	510	408	337	269	302
29	495	e430	e300	e240	---	1,390	540	498	421	326	269	304
30	490	438	e330	e250	---	998	529	498	428	329	265	301
31	487	---	e350	e260	---	678	---	503	---	330	262	---
TOTAL	17,872	13,737	10,310	8,110	7,290	21,655	19,302	22,723	14,398	12,075	9,104	8,671
MEAN	577	458	333	262	260	699	643	733	480	390	294	289
MAX	914	478	430	330	310	2,000	1,200	1,400	679	509	345	385
MIN	487	430	230	240	230	260	454	490	399	326	262	251
CFSM	0.90	0.71	0.52	0.41	0.40	1.09	1.00	1.14	0.75	0.61	0.46	0.45
IN.	1.03	0.79	0.60	0.47	0.42	1.25	1.12	1.31	0.83	0.70	0.53	0.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

MEAN	381	393	328	285	341	804	687	495	512	428	371	412
MAX	1,314	856	953	679	878	2,325	2,146	1,320	1,516	1,332	1,050	1,239
(WY)	(1955)	(1992)	(1983)	(1973)	(1981)	(1936)	(1965)	(1973)	(1993)	(1993)	(1975)	(1992)
MIN	169	180	139	117	119	289	301	195	183	163	138	153
(WY)	(1951)	(1950)	(1959)	(1959)	(1959)	(1968)	(1964)	(1934)	(1964)	(1964)	(1964)	(1948)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1914 - 2003
ANNUAL TOTAL	200,267	165,247	
ANNUAL MEAN	549	453	454
HIGHEST ANNUAL MEAN			813
LOWEST ANNUAL MEAN			237
HIGHEST DAILY MEAN	1,800	Jun 6	(a)2,000 Mar 18
LOWEST DAILY MEAN	(a)230	Dec 4	(a)230 Dec 4
ANNUAL SEVEN-DAY MINIMUM	(a)286	Dec 4	(a)230 Feb 9
MAXIMUM PEAK FLOW		2,420	Mar 18
MAXIMUM PEAK STAGE		9.40	Mar 18
ANNUAL RUNOFF (CFSM)	0.85	0.70	(b)10.35
ANNUAL RUNOFF (INCHES)	11.59	9.56	0.71
10 PERCENT EXCEEDS	782	698	740
50 PERCENT EXCEEDS	493	408	350
90 PERCENT EXCEEDS	360	254	200

(a) Ice affected

(b) Datum then in use

(c) Estimated due to ice effect or missing record

## 05381000 BLACK RIVER AT NEILLSVILLE, WI

LOCATION.--Lat 44°33'35", long 90°36'54", in NW ¼ SW ¼ sec.15, T.24 N., R.2 W., Clark County, Hydrologic Unit 07040007, on right bank at downstream side of bridge on Business U.S. Highway 10 in Neillsville, 1.0 mi downstream from O'Neill Creek, and 2.6 mi upstream from Cunningham Creek.

DRAINAGE AREA.--749 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1905 to March 1909, October 1913 to September 1999, October 2000 to current year. Monthly discharge for some periods published in WSP 1308. Unfinalized 2000 water year records in District data files.

REVISED RECORDS.--WSP 1308: 1914. WSP 1438: 1905, 1906-8(M), 1914-17(M), 1918-19, 1920-25(M), 1926-27, 1928-29(M), 1930, 1931(M), 1932, 1933(M), 1934, 1935(M), 1936. WSP 1508: 1950. WDR WI-81-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 962.34 ft above NGVD of 1929. Prior to Oct. 24, 1934, nonrecording gage; Oct. 24, 1934, to June 16, 1977, water-stage recorder; June 17, 1977, to Nov. 19, 1977, nonrecording gage at site 150 ft downstream at datum 1.58 ft lower.

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,740	583	e160	e70	e16	e28	1,050	543	202	180	81	23
2	1,610	515	e150	e70	e15	e27	1,010	495	186	159	83	24
3	1,250	468	e140	e70	e13	e27	1,000	452	169	146	131	23
4	2,820	447	e130	e70	e13	e27	862	412	159	137	158	22
5	4,040	417	e140	e70	e13	e27	587	586	145	130	155	22
6	3,350	418	e140	e72	e13	e27	497	949	147	125	171	21
7	4,230	410	e140	e74	e13	e28	458	1,110	204	125	134	22
8	3,640	403	e140	e80	e13	e30	417	1,110	392	120	111	21
9	2,950	391	e140	e78	e13	e30	408	1,880	343	114	95	21
10	2,370	384	e150	e70	e14	e30	494	2,570	587	117	86	19
11	2,190	368	e150	e62	e14	e40	732	4,310	729	118	84	17
12	1,670	354	e140	e60	e14	e80	853	8,840	822	112	73	27
13	1,500	348	e140	e55	e15	e200	787	6,840	693	109	65	42
14	1,240	338	e130	e44	e16	e300	704	4,120	510	105	60	43
15	973	326	e120	e30	e17	e1,000	712	2,390	377	194	55	41
16	769	306	e120	e30	e18	e2,500	7,360	1,530	289	141	50	42
17	633	292	e120	e26	e19	e2,800	11,800	1,020	233	111	45	40
18	578	273	e130	e22	e20	e2,700	8,610	765	196	97	41	41
19	564	266	e140	e18	e22	e2,400	6,200	641	168	87	38	56
20	540	267	e140	e16	e24	2,320	7,290	1,020	146	81	37	55
21	555	262	e140	e15	e23	1,870	6,190	785	129	77	36	53
22	662	258	e130	e15	e22	1,580	4,600	680	118	73	36	56
23	832	252	e120	e15	e21	1,290	3,070	596	109	68	34	52
24	915	248	e110	e15	e20	1,270	2,100	497	111	64	33	47
25	1,030	e190	e100	e15	e20	1,050	1,490	423	138	63	31	45
26	1,710	e160	e90	e15	e21	840	1,110	360	198	59	32	46
27	1,860	e160	e80	e15	e23	907	887	314	198	61	33	48
28	1,450	e170	e80	e16	e25	3,360	758	278	199	59	29	49
29	1,080	e180	e80	e16	---	2,960	664	249	190	54	28	52
30	837	e170	e80	e16	---	2,010	595	236	183	51	26	51
31	691	---	e80	e16	---	1,360	---	223	---	57	24	---
TOTAL	50,279	9,624	3,850	1,256	490	33,118	73,295	46,224	8,270	3,194	2,095	1,121
MEAN	1,622	321	124	40.5	17.5	1,068	2,443	1,491	276	103	67.6	37.4
MAX	4,230	583	160	80	25	3,360	11,800	8,840	822	194	171	56
MIN	540	160	80	15	13	27	408	223	109	51	24	17
CFSM	2.17	0.43	0.17	0.05	0.02	1.43	3.26	1.99	0.37	0.14	0.09	0.05
IN.	2.50	0.48	0.19	0.06	0.02	1.64	3.64	2.30	0.41	0.16	0.10	0.06

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2003, BY WATER YEAR (WY)

	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	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
MEAN	400	455	193	108	134	1,236	1,998	874	824	308	257	522																																																																																							
MAX	2,101	2,345	1,133	615	1,348	3,960	5,025	3,538	4,689	1,538	1,293	4,304																																																																																							
(WY)	(1983)	(1992)	(1966)	(1973)	(1984)	(1973)	(1951)	(1973)	(1905)	(1978)	(1928)	(1938)																																																																																							
MIN	20.7	27.1	35.9	10.0	5.00	56.7	270	77.4	43.0	14.9	10.5	5.77																																																																																							
(WY)	(1934)	(1977)	(1934)	(1918)	(1918)	(1940)	(1946)	(1934)	(1964)	(1933)	(1933)	(1933)																																																																																							

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1905 - 2003	
ANNUAL TOTAL	361,551		232,816			
ANNUAL MEAN	991		638		606	
HIGHEST ANNUAL MEAN					1,213	
LOWEST ANNUAL MEAN					160	
HIGHEST DAILY MEAN	14,500	Jun 23	11,800	Apr 17	38,200	Sep 10, 1938
LOWEST DAILY MEAN	(a)64	Jan 13	(a)13	Feb 3-9	0.70	(b)Aug 10, 1936
ANNUAL SEVEN-DAY MINIMUM	(a)67	Jan 13	(a)13	Feb 3	1.0	Aug 10, 1936
MAXIMUM PEAK FLOW			13,300	Apr 16	48,800	Sep 10, 1938
MAXIMUM PEAK STAGE			13.49	Apr 16	23.80	Sep 10, 1938
INSTANTANEOUS LOW FLOW			(a)		0.60	Aug 15, 1936
ANNUAL RUNOFF (CFSM)	1.32		0.85		0.81	
ANNUAL RUNOFF (INCHES)	17.96		11.56		10.99	
10 PERCENT EXCEEDS	2,510		1,690		1,500	
50 PERCENT EXCEEDS	469		140		150	
90 PERCENT EXCEEDS	86		21		36	

(a) Ice affected

(b) Also occurred Aug. 11, 14-16, 1936

(c) Estimated due to ice effect or missing record

## 05382000 BLACK RIVER NEAR GALESVILLE, WI

LOCATION.--Lat 44°03'37", long 91°17'14" in NW ¼ SW ¼ sec.1, T.18 N., R.8 W., LaCrosse County, Hydrologic Unit 07040007, on left bank 1,000 ft upstream from bridge on U.S. Highway 53, 3.5 mi southeast of Galesville, and 4.8 mi downstream from Fleming Creek.

DRAINAGE AREA.--2,080 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1931 to current year.

REVISED RECORDS.--WSP 1438: 1932-34, 1935-36(M). WDR WI-81-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 658.43 ft above NGVD of 1929. Prior to Apr. 2, 1941, nonrecording gage on bridge 1,000 ft downstream at same datum. Apr. 3, 1941, to Oct. 1, 1971, water-stage recorder at site 1,030 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow partly regulated by Hatfield Dam Powerplant where drainage area is 1,290 mi<sup>2</sup> and storage capacity is 272,000,000 ft<sup>3</sup>. Water diverted periodically from basin into Lemonweir River basin for cranberry culture. Gage-height telemeter and data-collection platform at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,540	1,890	e680	e530	e440	e420	4,190	2,450	1,300	874	454	426
2	2,700	1,670	e650	e520	e430	e420	3,410	2,310	1,240	795	470	400
3	2,740	1,380	e580	e460	e430	e420	3,000	2,040	1,180	807	465	394
4	2,680	1,350	e450	e420	e410	e420	2,750	1,800	1,140	857	469	419
5	3,190	1,320	e400	e440	e390	e400	2,500	1,920	1,100	811	485	377
6	4,840	1,270	e430	e460	e390	e400	2,220	2,190	1,040	708	488	364
7	5,460	1,230	e480	e490	e370	e400	1,860	3,180	1,070	751	516	357
8	5,490	1,170	e500	e490	e350	e390	1,720	3,390	1,090	759	580	348
9	5,760	1,170	e500	e490	e340	e390	1,690	3,620	1,350	761	559	343
10	5,570	1,160	e530	e490	e340	e380	1,650	4,170	2,320	773	487	335
11	4,770	1,130	e550	e450	e340	e390	1,630	5,570	2,550	783	453	329
12	4,270	1,110	e570	e440	e340	e400	1,770	6,240	3,480	711	439	379
13	3,900	1,090	e570	e410	e340	e580	1,990	7,830	3,320	696	432	427
14	3,390	1,070	e570	e400	e340	e800	2,000	12,000	2,910	675	422	415
15	3,040	1,020	e580	e400	e340	e1,000	1,920	12,200	2,490	665	420	391
16	2,500	998	e590	e400	e340	e1,500	2,060	8,740	2,000	729	413	375
17	2,210	985	e580	e400	e350	e2,400	3,700	5,730	1,530	728	389	360
18	1,940	963	e590	e400	e380	e4,200	7,080	4,130	1,250	853	375	351
19	1,770	988	e580	e400	e410	5,370	15,200	3,240	1,210	792	371	405
20	1,630	920	e570	e400	e440	4,670	16,500	2,940	1,070	671	367	400
21	1,610	840	e540	e400	e460	4,150	12,700	3,170	956	632	368	396
22	1,620	846	e530	e400	e430	3,690	12,900	3,170	924	627	352	404
23	1,700	844	e530	e400	e430	3,240	12,300	2,740	860	608	345	399
24	1,960	836	e530	e400	e430	2,940	9,800	2,550	817	537	344	394
25	2,150	869	e520	e400	e430	2,760	7,180	2,400	831	497	368	388
26	2,240	870	e500	e400	e420	2,660	5,180	2,120	843	488	395	383
27	2,620	839	e500	e400	e410	2,470	4,090	1,890	862	496	369	393
28	3,250	770	e490	e400	e410	2,650	3,450	1,680	801	478	380	391
29	3,110	715	e490	e400	---	4,160	3,000	1,530	754	469	480	387
30	2,640	e690	e530	e410	---	5,480	2,670	1,470	810	464	467	390
31	2,190	---	e570	e430	---	5,200	---	1,380	---	465	455	---
TOTAL	94,480	32,003	16,680	13,330	10,930	64,750	152,110	119,790	43,098	20,960	13,377	11,520
MEAN	3,048	1,067	538	430	390	2,089	5,070	3,864	1,437	676	432	384
MAX	5,760	1,890	680	530	460	5,480	16,500	12,200	3,480	874	580	427
MIN	1,540	690	400	400	340	380	1,630	1,380	754	464	344	329
CFSM	1.47	0.51	0.26	0.21	0.19	1.00	2.44	1.86	0.69	0.33	0.21	0.18
IN.	1.69	0.57	0.30	0.24	0.20	1.16	2.72	2.14	0.77	0.37	0.24	0.21

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2003, BY WATER YEAR (WY)

	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	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
MEAN	1,285	1,402	982	725	774	2,968	4,689	2,546	2,321	1,269	946	1,501																																																												
MAX	5,231	4,401	3,468	2,661	3,664	9,521	12,210	7,993	11,880	4,361	4,421	9,373																																																												
(WY)	(1987)	(1935)	(1992)	(1932)	(1984)	(1973)	(1967)	(1960)	(1993)	(1978)	(1995)	(1938)																																																												
MIN	277	337	320	268	263	406	1,269	591	427	322	293	306																																																												
(WY)	(1959)	(1949)	(1959)	(1959)	(1959)	(1934)	(2000)	(1934)	(1988)	(1933)	(1964)	(1948)																																																												

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1932 - 2003	
ANNUAL TOTAL	846,457		593,028			
ANNUAL MEAN	2,319		1,625		1,783	
HIGHEST ANNUAL MEAN					3,456	
LOWEST ANNUAL MEAN					699	
HIGHEST DAILY MEAN	15,800	Apr 15	16,500	Apr 20	62,000	Apr 1, 1967
LOWEST DAILY MEAN	(a)400	Dec 5	329	Sep 11	180	Dec 20, 1932
ANNUAL SEVEN-DAY MINIMUM	(a)470	Dec 4	(a)340	Feb 9	218	Aug 10, 1933
MAXIMUM PEAK FLOW			18,300		(b)65,500	
MAXIMUM PEAK STAGE			12.76		16.64	
INSTANTANEOUS LOW FLOW			323		180	
ANNUAL RUNOFF (CFSM)	1.11		0.78		0.86	
ANNUAL RUNOFF (INCHES)	15.14		10.61		11.65	
10 PERCENT EXCEEDS	4,790		3,690		3,950	
50 PERCENT EXCEEDS	1,540		715		880	
90 PERCENT EXCEEDS	586		388		390	

(a) Ice affected

(b) Gage height, 14.63 ft, at location 1,000 ft downstream

(c) Estimated due to ice effect or missing record



05382325 LA CROSSE RIVER AT SPARTA, WI

LOCATION.--Lat 43°56'15", long 90°48'38", in SE 1/4 NE 1/4 sec.23, T.17 N., R.4 W., Monroe County, Hydrologic Unit 07040006, on left bank, 800 ft downstream from bridge on South Water Street, in Sparta, 0.35 mi downstream from Beaver Creek.

DRAINAGE AREA.--167 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 760.73 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Gage-height telemeter at station. Occasional regulation from two dams upstream from gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	142	122	119	119	111	143	139	133	111	102	102
2	140	140	125	119	120	110	140	132	131	108	99	99
3	150	138	117	117	e110	104	137	130	131	126	99	97
4	208	138	123	119	e110	e100	136	132	130	139	99	96
5	190	138	122	119	e100	e100	135	158	128	122	100	96
6	176	141	115	119	e110	e100	133	159	130	118	98	95
7	164	139	125	120	e110	e100	136	156	137	127	97	94
8	158	139	121	121	e110	e100	137	157	156	118	97	94
9	153	138	110	121	e100	e98	141	200	142	116	97	94
10	161	138	127	118	e110	e100	141	176	157	126	95	92
11	167	136	124	99	e110	e110	139	196	152	119	93	91
12	168	134	125	e100	e100	115	137	208	143	113	94	103
13	162	134	125	e100	e110	118	138	176	135	109	94	106
14	154	133	125	e100	e110	151	135	195	128	107	92	112
15	150	131	126	e100	e110	203	137	199	124	122	92	105
16	147	131	124	e100	109	222	165	172	121	117	90	101
17	147	131	124	e100	110	291	162	158	119	110	90	97
18	151	130	133	e100	115	173	153	153	124	106	90	95
19	151	131	133	e100	114	149	168	154	118	105	88	115
20	149	131	130	e100	124	145	193	167	115	104	88	105
21	157	131	128	e100	162	148	178	159	113	103	85	105
22	158	129	126	101	159	145	161	150	112	103	85	109
23	153	129	124	e100	120	138	149	147	112	101	86	105
24	151	128	119	104	114	137	144	143	131	101	85	102
25	153	127	123	106	e100	134	141	140	123	97	95	98
26	157	124	119	e100	e100	131	138	138	129	96	119	100
27	152	123	118	101	e100	155	136	136	119	96	98	101
28	149	124	123	107	112	187	134	137	123	95	110	99
29	147	126	122	111	---	166	132	135	123	95	147	100
30	145	126	123	112	---	149	137	142	117	97	113	104
31	144	---	122	117	---	142	---	139	---	104	104	---
TOTAL	4,848	3,980	3,823	3,350	3,178	4,332	4,356	4,883	3,856	3,411	3,021	3,012
MEAN	156	133	123	108	114	140	145	158	129	110	97.5	100
MAX	208	142	133	121	162	291	193	208	157	139	147	115
MIN	136	123	110	99	100	98	132	130	112	95	85	91
CFSM	0.94	0.79	0.74	0.65	0.68	0.84	0.87	0.94	0.77	0.66	0.58	0.60
IN.	1.08	0.89	0.85	0.75	0.71	0.96	0.97	1.09	0.86	0.76	0.67	0.67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	149	147	135	128	140	167	192	179	205	168	152	151
MAX	184	179	160	142	168	213	324	279	323	288	205	216
(WY)	(1996)	(1996)	(1995)	(1995)	(1994)	(1996)	(1993)	(1993)	(1993)	(1993)	(1998)	(1994)
MIN	122	124	117	108	114	133	126	153	129	110	97.5	100
(WY)	(2001)	(1998)	(2001)	(2003)	(2003)	(2000)	(2000)	(2000)	(2003)	(2003)	(2003)	(2003)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1992 - 2003
ANNUAL TOTAL	54,896	46,050	
ANNUAL MEAN	150	126	160
HIGHEST ANNUAL MEAN			211
LOWEST ANNUAL MEAN			126
HIGHEST DAILY MEAN	553	291	1,050
LOWEST DAILY MEAN	(a)100	85	(c)72
ANNUAL SEVEN-DAY MINIMUM	119	87	(c)84
MAXIMUM PEAK FLOW		512	1,270
MAXIMUM PEAK STAGE		5.51	8.94
ANNUAL RUNOFF (CFSM)	0.90	0.76	0.96
ANNUAL RUNOFF (INCHES)	12.23	10.26	13.00
10 PERCENT EXCEEDS	179	158	206
50 PERCENT EXCEEDS	140	123	147
90 PERCENT EXCEEDS	123	98	119

- (a) Ice affected
- (b) Also occurred Aug. 22 and 24
- (c) Regulation at dam upstream
- (e) Estimated due to ice effect or missing record

## LA CROSSE RIVER BASIN

05383075 LA CROSSE RIVER NEAR LA CROSSE, WI

LOCATION.--Lat 43°51'39", long 91°12'37", in NE ¼ SE ¼ sec.16, T.16 N., R.7 W., La Crosse County, Hydrologic Unit 07040006, on left bank just downstream from Great River State Trail, 3.9 mi northeast of post office in La Crosse.

DRAINAGE AREA.--471 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1999 to current year. Published as "at La Crosse" prior to October 2000.

GAGE.--Water-stage recorder. Elevation of gage is 650 ft above NGVD of 1929, from topographic map.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES\*

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	312	336	286	294	e300	e270	375	369	320	312	244	233
2	290	293	332	288	e300	e270	378	338	365	269	243	237
3	330	277	298	287	e300	e260	363	313	346	284	241	231
4	531	324	287	288	e290	e260	399	356	327	410	242	252
5	510	295	288	287	e270	e260	333	415	322	370	240	230
6	523	324	307	286	e270	e260	336	391	330	336	241	226
7	497	334	291	288	e270	e270	373	422	334	340	241	219
8	474	284	290	301	e270	e270	364	488	413	344	238	205
9	344	308	324	304	e250	e250	318	474	409	360	239	204
10	360	333	290	290	e270	e260	357	526	400	328	231	196
11	370	341	287	e210	e240	e290	374	591	396	288	211	200
12	344	314	289	e230	e250	e290	330	550	492	354	211	249
13	427	319	335	e240	e270	e300	339	527	340	323	210	231
14	328	326	311	e240	e280	e320	309	569	329	267	210	232
15	343	333	294	e240	e280	e400	351	569	364	271	245	228
16	340	288	294	e240	e270	e760	385	698	327	300	209	234
17	288	275	334	e240	e270	e900	404	520	315	295	208	229
18	323	325	307	e240	e280	862	485	377	312	254	207	238
19	322	293	356	e240	e290	602	418	400	308	252	207	265
20	328	270	357	e240	e310	514	535	515	308	251	207	230
21	333	272	326	e240	e380	496	522	406	300	249	205	229
22	363	299	297	e250	e330	384	505	390	269	262	205	245
23	334	396	345	e250	e290	436	497	394	281	264	204	246
24	336	281	312	e250	e270	354	443	390	290	249	203	252
25	339	331	295	e250	e250	431	369	396	336	248	225	230
26	344	291	307	e250	e270	374	379	351	342	249	216	229
27	333	283	307	e250	e280	433	330	381	271	253	208	228
28	463	283	293	e270	e270	449	370	341	309	254	213	226
29	287	323	292	e280	---	513	369	348	330	246	237	226
30	275	291	292	e280	---	502	332	358	285	243	275	225
31	327	---	330	e290	---	494	---	324	---	244	273	---
TOTAL	11,318	9,242	9,553	8,133	7,870	12,734	11,642	13,487	10,070	8,969	6,989	6,905
MEAN	365	308	308	262	281	411	388	435	336	289	225	230
MAX	531	396	357	304	380	900	535	698	492	410	275	265
MIN	275	270	286	210	240	250	309	313	269	243	203	196

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2003, BY WATER YEAR (WY)

MEAN	333	323	302	282	319	395	422	416	500	342	300	308
MAX	365	330	321	308	356	421	561	481	651	463	354	385
(WY)	(2003)	(2000)	(2002)	(2001)	(2002)	(2001)	(2001)	(2001)	(2000)	(2000)	(2000)	(2001)
MIN	304	308	277	262	281	356	310	344	336	289	225	230
(WY)	(2001)	(2003)	(2001)	(2003)	(2003)	(2000)	(2000)	(2002)	(2003)	(2003)	(2003)	(2003)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 2000 - 2003
ANNUAL TOTAL	126,934	116,912	
ANNUAL MEAN	348	320	353
HIGHEST ANNUAL MEAN			376
LOWEST ANNUAL MEAN			320
HIGHEST DAILY MEAN	893	Jun 6	(a)900
LOWEST DAILY MEAN	(a)240	Jan 18	196
ANNUAL SEVEN-DAY MINIMUM	259	Jul 13	205
MAXIMUM PEAK FLOW			(b)1,030
MAXIMUM PEAK STAGE			(c)7.47
INSTANTANEOUS LOW FLOW			193
10 PERCENT EXCEEDS	484		432
50 PERCENT EXCEEDS	326		298
90 PERCENT EXCEEDS	265		231

(a) Ice affected

(b) Gage height, 6.09 ft

(c) Result of ice jam

(e) Estimated due to ice effect or missing record

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA

LOCATION.--Lat 43°01'29", long 91°10'21", in SE¼ SE¼ sec.22, T.95 N., R.3 W., Clayton County, Hydrologic Unit 07060001, on right bank in city park at east end of Main Street in McGregor, 2.6 mi upstream from Wisconsin River, 4.3 mi downstream from Yellow River, and at mile 633.4 upstream from Ohio River.

DRAINAGE AREA.--67,500 mi<sup>2</sup>, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1936 to current year.

REVISED RECORDS.--WDR IA-75-1: 1974.

GAGE.--Water-stage recorder. Datum of gage is 604.84 ft above NGVD of 1929. Prior to June 1, 1937, and since June 2, 1939, auxiliary water-stage recorder; June 1, 1937 to June 1, 1939, auxiliary nonrecording gage 14.1 mi upstream in tailwater of dam 9, at datum 5.30 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poo (see page 11). Minor flow regulation caused by navigation dams. U.S. Geological Survey satellite and telephone modem data collection platform at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1828, that of Apr. 24, 1965.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38,300	48,600	28,600	26,500	e18,900	e19,900	48,600	84,300	71,400	55,800	25,900	13,600
2	39,900	47,700	24,200	26,800	e19,000	e18,900	48,900	80,500	64,100	57,800	25,400	14,800
3	41,500	46,900	23,400	26,800	e19,100	e18,900	46,900	76,600	58,200	62,300	23,500	13,900
4	43,000	45,800	e23,700	25,800	e19,300	e18,400	40,300	71,300	54,100	66,900	23,900	13,200
5	44,100	41,400	e23,800	24,100	e19,200	e18,400	37,300	66,200	50,700	67,600	24,600	10,800
6	44,700	40,900	e23,800	23,500	e19,700	e18,200	36,900	60,800	47,100	67,700	25,000	e9,830
7	47,400	40,900	e24,000	23,600	e20,400	e18,000	38,800	56,800	44,800	69,600	24,100	e9,510
8	53,300	40,300	e23,800	23,300	e20,300	e17,700	39,000	54,500	45,200	69,800	22,300	11,300
9	60,300	39,500	e22,800	22,600	e20,300	e17,700	33,500	56,200	e46,000	67,800	21,500	14,000
10	68,000	38,000	e21,500	22,800	e20,300	e17,700	28,600	59,000	e44,500	66,500	20,700	14,600
11	72,400	38,200	e23,200	e22,900	e20,200	e17,700	27,400	62,900	e44,500	65,700	20,300	14,500
12	77,200	38,500	29,300	e21,600	e20,200	e17,800	32,300	65,700	43,300	63,300	20,600	15,000
13	81,600	38,200	32,700	e21,700	e19,700	e17,500	33,000	69,500	45,400	61,600	18,100	17,800
14	83,900	37,400	34,300	e19,400	e19,100	e17,900	33,100	74,900	47,600	59,300	16,600	18,500
15	85,800	37,500	33,000	e19,300	e18,800	e19,300	e31,900	81,400	49,900	55,900	16,500	17,700
16	84,800	36,700	28,500	e19,200	e18,600	e21,000	31,600	88,500	52,200	52,500	17,200	19,700
17	82,600	35,200	25,000	e19,000	e18,500	33,700	32,200	95,300	52,400	52,000	18,600	17,700
18	80,000	34,000	26,200	e19,000	e18,200	42,200	38,300	102,000	50,500	51,900	16,500	15,100
19	76,700	33,700	28,500	e19,100	e17,900	47,500	46,700	109,000	47,900	52,100	14,000	16,600
20	72,400	33,700	29,800	e18,800	e18,100	48,100	61,300	113,000	45,400	52,100	e12,000	18,100
21	67,000	33,800	30,000	e18,900	e19,100	48,800	69,600	112,000	42,700	50,500	e16,200	18,300
22	62,100	31,800	30,100	e18,800	e20,200	49,700	74,300	106,000	40,200	47,000	20,700	17,900
23	57,900	30,600	30,200	e18,800	e21,200	49,800	78,100	99,700	35,000	43,900	22,100	18,700
24	56,600	31,000	28,400	e18,800	e22,000	48,200	83,100	95,000	32,900	41,000	19,800	17,800
25	55,300	32,300	27,100	e18,800	e22,200	46,200	85,200	91,100	33,900	39,500	12,700	19,900
26	53,900	32,500	26,000	e18,800	e22,200	44,600	87,600	88,900	35,900	36,700	e10,900	17,600
27	51,600	31,700	25,200	e18,900	e21,800	42,000	89,300	86,500	37,000	37,300	e11,300	12,300
28	49,500	28,200	24,600	e19,000	e21,400	42,400	89,900	84,300	42,900	35,400	11,800	e13,500
29	48,800	26,800	24,500	e18,900	---	43,900	88,600	80,800	50,400	31,100	e10,100	e13,200
30	48,600	27,600	24,900	e19,000	---	46,300	86,600	78,500	54,000	28,100	11,000	16,400
31	48,900	---	26,400	e19,100	---	47,700	---	75,800	---	24,600	12,500	---
TOTAL	1,878,100	1,099,400	827,500	653,600	555,900	976,100	1,598,900	2,527,000	1,410,100	1,633,300	566,400	461,840
MEAN	60,580	36,650	26,690	21,080	19,850	31,490	53,300	81,520	47,000	52,690	18,270	15,390
MAX	85,800	48,600	34,300	26,800	22,200	49,800	89,900	113,000	71,400	69,800	25,900	19,900
MIN	38,300	26,800	21,500	18,800	17,900	17,500	27,400	54,500	32,900	24,600	10,100	9,510
AC-FT	3,725,000	2,181,000	1,641,000	1,296,000	1,103,000	1,936,000	3,171,000	5,012,000	2,797,000	3,240,000	1,123,000	916,100
CFSM	0.90	0.54	0.40	0.31	0.29	0.47	0.79	1.21	0.70	0.78	0.27	0.23
IN.	1.04	0.61	0.46	0.36	0.31	0.54	0.88	1.39	0.78	0.90	0.31	0.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

MEAN	28,910	29,450	22,490	19,490	20,240	39,240	75,890	62,620	50,030	41,760	28,390	28,740
MAX	114,600	64,840	59,200	35,700	48,540	103,800	164,800	138,700	112,600	142,200	84,430	72,890
(WY)	(1987)	(1983)	(1992)	(1983)	(1984)	(1983)	(1965)	(2001)	(1993)	(1993)	(1993)	(1986)
MIN	9,874	10,870	9,506	7,665	9,934	13,190	27,780	18,240	13,420	11,220	10,330	10,650
(WY)	(1937)	(1938)	(1937)	(1940)	(1940)	(1940)	(1990)	(1977)	(1988)	(1988)	(1964)	(1940)

## MISSISSIPPI RIVER MAIN STEM

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL TOTAL	17,259,600		14,188,140		37,320	
ANNUAL MEAN	47,290		38,870		64,720	
HIGHEST ANNUAL MEAN					17,400	
LOWEST ANNUAL MEAN					1977	
HIGHEST DAILY MEAN	122,000	Apr 22	113,000	May 20	276,000	Apr 24, 1965
LOWEST DAILY MEAN	17,200	Mar 4	9,510	Sep 7	6,200	Dec 9, 1936
ANNUAL SEVEN-DAY MINIMUM	20,200	Feb 3	11,500	Aug 25	6,490	Dec 7, 1936
MAXIMUM PEAK FLOW			115,000	May 20	276,000	Apr 24, 1965
MAXIMUM PEAK STAGE			16.88	May 20	25.38	Apr 24, 1965
ANNUAL RUNOFF (AC-FT)	34,230,000		28,140,000		27,040,000	
ANNUAL RUNOFF (CFSM)	0.70		0.58		0.55	
ANNUAL RUNOFF (INCHES)	9.51		7.82		7.51	
10 PERCENT EXCEEDS	77,700		75,300		75,900	
50 PERCENT EXCEEDS	44,100		32,700		27,900	
90 PERCENT EXCEEDS	23,800		17,700		13,400	

(e) Estimated due to ice effect or missing record

## 05389500 MISSISSIPPI RIVER AT MCGREGOR, IA—Continued

## WATER-QUALITY RECORDS

LOCATION.--Samples collected from right bank dock 1.2 mi upstream from discharge station. Prior to April 1981, and March 7 to Sept. 30, 1997, samples collected at bridge on U.S. Highway 18, 1.2 mi upstream from gage. April 1981 to March 6, 1997, samples collected from right bank dock, 0.3 mi downstream from discharge station.

PERIOD OF RECORD.--July 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1975 to current year.

WATER TEMPERATURES: July 1975 to current year.

SUSPENDED-SEDIMENT DISCHARGE: July 1975 to current year.

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 633 microsiemens Nov. 3, 1996; minimum daily, 190 microsiemens Sept. 29, 1980.

WATER TEMPERATURES: Maximum daily, 31.0°C June 28, 2002; minimum daily, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,350 mg/L Mar. 19, 1986; minimum daily mean, 1 mg/L on many days in 1977-92 and 1999.

SEDIMENT LOADS: Maximum daily, 363,000 tons Mar. 19, 1986; minimum daily, 31 tons Dec. 25, 1976.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 490 microsiemens Feb. 2, 9, 19; minimum daily, 267 microsiemens May 20.

WATER TEMPERATURES: Maximum daily, 27.0°C, Aug. 18, 26; minimum daily, 0.0°C many days Dec.- Mar.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 49 mg/L July 14; minimum daily mean, 4 mg/L Dec. 25, 26, Jan. 5, 6, Mar. 8-10, 12.

SEDIMENT LOADS: Maximum daily, 8,690 tons Apr. 21; minimum daily, 191 tons Mar. 8-10.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Temperature, water, deg C (00010)	Suspnd. sediment, sieve diameter <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
NOV 2002						
07...	1215	43,500	--	96	40	4,700
MAR 2003						
17...	1330	42,100	2.0	83	16	1,820
APR						
16...	1200	36,400	14.4	99	46	4,520
MAY						
20...	1300	154,000	17.8	26	100	41,600
JUN						
12...	1000	47,300	20.0	98	25	3,190
AUG						
05...	1110	23,600	--	32	37	2,360
SEP						
15...	1530	17,100	--	99	13	600

## MISSISSIPPI RIVER MAIN STEM

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, LABORATORY, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	330	---	---	---	---	---	420	---	432	422	---	398
2	326	---	413	---	490	465	423	---	---	428	---	400
3	---	---	340	---	310	392	---	362	428	---	---	402
4	---	368	362	---	476	442	---	---	442	---	396	---
5	---	366	---	441	---	---	---	369	---	---	391	---
6	---	379	---	442	---	---	---	381	---	---	400	---
7	324	---	---	442	---	---	394	---	---	403	---	410
8	320	---	---	---	---	---	392	---	440	388	---	406
9	314	---	434	---	490	482	387	---	438	375	---	412
10	---	---	441	---	480	---	---	---	438	---	---	---
11	---	376	438	---	---	484	---	---	---	---	396	---
12	---	377	---	---	479	487	---	370	425	---	393	---
13	---	---	---	465	---	---	---	364	---	---	392	---
14	275	382	---	462	---	---	368	364	---	375	---	---
15	278	---	---	---	---	---	357	---	---	---	---	404
16	312	---	413	467	481	---	364	---	418	386	---	405
17	---	395	351	---	484	435	---	---	398	388	---	407
18	---	385	410	---	---	429	---	310	390	---	387	---
19	---	390	---	---	490	420	---	294	---	---	393	---
20	---	---	---	466	---	---	---	267	---	385	394	---
21	357	---	---	414	---	---	348	---	---	381	---	---
22	361	---	---	393	---	---	300	---	---	386	---	406
23	360	---	428	---	474	399	276	---	450	---	---	404
24	---	---	426	---	477	378	---	---	434	---	---	---
25	---	396	433	---	---	366	---	380	434	---	393	409
26	---	393	---	---	480	---	---	386	---	---	391	---
27	---	380	---	454	---	---	---	388	---	---	392	---
28	335	---	---	363	---	---	291	403	---	---	---	416
29	370	---	432	487	---	---	312	---	---	395	---	420
30	360	---	434	---	---	---	330	---	425	390	---	385
31	---	---	434	---	---	414	---	---	---	395	---	---

## 05389500 MISSISSIPPI RIVER AT MCGREGOR, IA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	---	---	---	---	---	8.0	---	20.0	24.0	---	23.0
2	20.0	---	0.0	---	1.0	0.0	9.0	---	---	25.0	---	22.0
3	---	---	0.0	---	0.0	0.0	---	15.0	19.0	---	---	23.0
4	---	10.0	0.0	---	0.0	0.0	---	---	19.0	---	25.0	---
5	---	5.0	---	1.0	---	---	---	13.0	---	---	25.0	---
6	---	5.0	---	1.0	---	---	---	15.0	---	---	25.0	---
7	15.0	---	---	1.0	---	---	4.0	---	---	26.0	---	23.0
8	15.0	---	---	---	---	---	5.0	---	20.0	25.0	---	24.0
9	15.0	---	0.0	---	0.0	0.0	6.0	---	20.0	24.0	---	23.0
10	---	---	0.0	---	0.0	---	---	---	22.0	---	---	---
11	---	8.0	0.0	---	---	1.0	---	---	---	---	26.0	---
12	---	8.0	---	---	0.0	1.0	---	14.0	20.0	---	25.0	---
13	---	---	---	0.0	---	---	---	15.0	---	---	25.0	---
14	13.0	6.0	---	0.0	---	---	14.0	15.0	---	24.0	---	---
15	13.0	---	---	---	---	---	15.0	---	---	---	---	21.0
16	12.0	---	0.0	0.0	0.0	---	14.4	---	25.0	25.0	---	21.0
17	---	4.0	1.0	---	0.0	2.0	---	---	26.0	25.0	---	21.0
18	---	4.0	2.0	---	---	3.0	---	17.0	26.0	---	27.0	---
19	---	4.0	---	---	0.0	2.0	---	17.0	---	---	23.0	---
20	---	---	---	0.0	---	---	---	17.8	---	25.0	26.0	---
21	11.0	---	---	0.0	---	---	12.0	---	---	24.0	---	---
22	10.0	---	---	0.0	---	---	12.0	---	---	24.0	---	18.0
23	10.0	---	0.0	---	0.0	4.0	11.0	---	25.0	---	---	16.0
24	---	---	0.0	---	0.0	6.0	---	---	26.0	---	---	---
25	---	3.0	0.0	---	---	6.0	---	18.0	25.0	---	26.0	16.0
26	---	2.0	---	---	0.0	---	---	18.0	---	---	27.0	---
27	---	2.0	---	0.0	---	---	---	20.0	---	---	26.0	---
28	10.0	---	---	0.0	---	---	15.0	20.0	---	---	---	13.0
29	8.0	---	0.0	0.0	---	---	15.0	---	---	26.0	---	13.0
30	8.0	---	1.0	---	---	---	14.0	---	24.0	26.0	---	11.0
31	---	---	1.0	---	---	6.0	---	---	---	26.0	---	---

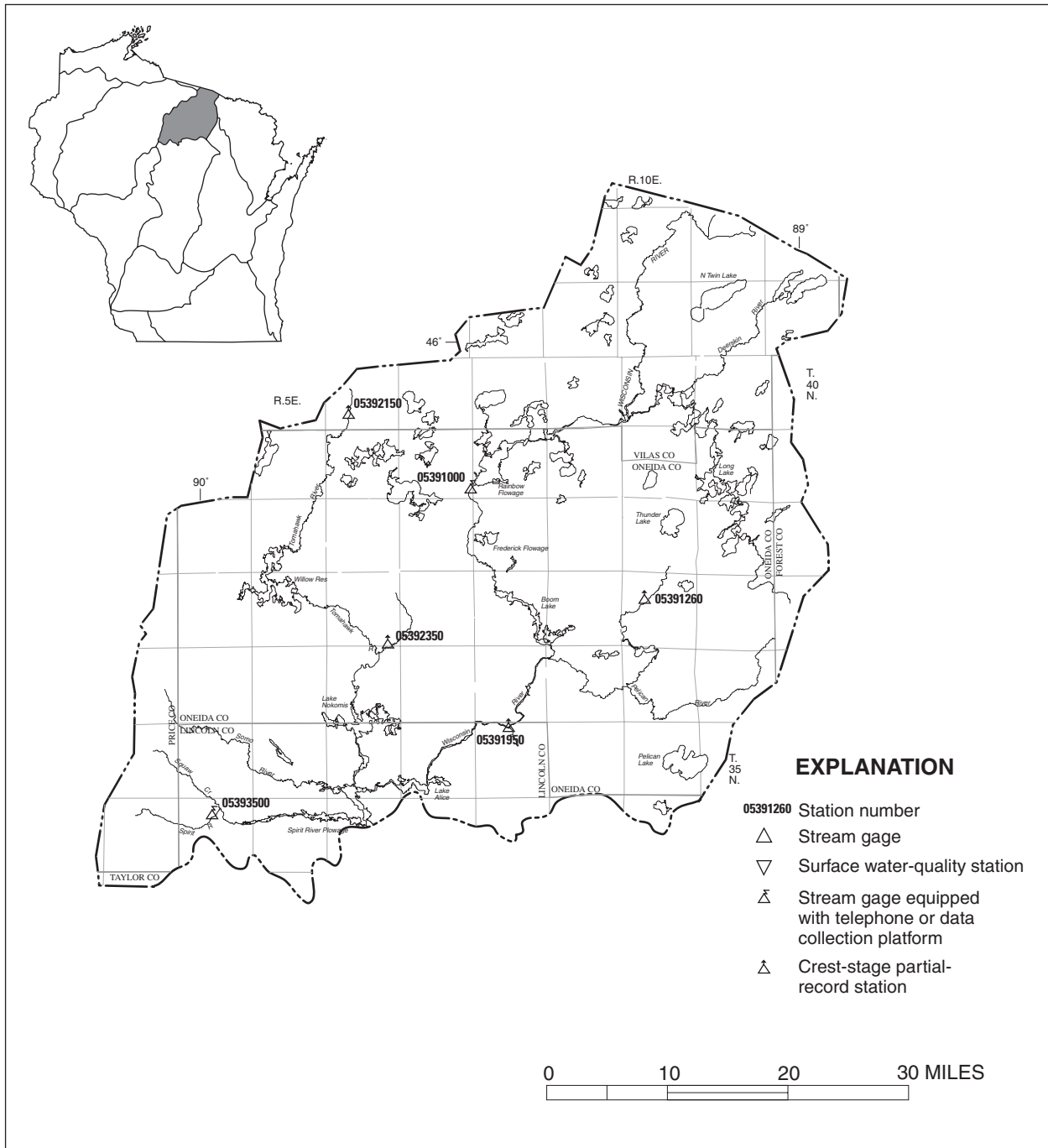
## 05389500 MISSISSIPPI RIVER AT MCGREGOR, IA—Continued

## SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Day	Mean concentration (mg/l)		Mean concentration (mg/l)		Mean concentration (mg/l)		Mean concentration (mg/l)		Mean concentration (mg/l)		Mean concentration (mg/l)	
	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	25	2,560	21	2,800	15	1,130	6	452	6	306	7	376
2	27	2,880	22	2,780	16	1,010	8	565	5	256	7	357
3	27	3,070	22	2,760	13	818	7	524	8	413	7	357
4	28	3,230	22	2,710	12	768	6	397	10	521	6	298
5	28	3,380	21	2,360	14	900	4	279	10	518	6	298
6	29	3,500	21	2,310	15	964	4	257	9	479	5	246
7	31	3,980	29	3,190	13	842	5	304	8	441	5	243
8	34	4,860	31	3,320	10	643	5	325	6	329	4	191
9	36	5,920	30	3,200	7	431	5	327	5	274	4	191
10	39	7,190	30	3,030	8	464	6	352	5	274	4	191
11	42	8,190	29	2,960	8	501	8	495	6	327	5	239
12	42	8,820	23	2,370	10	760	9	525	6	327	4	192
13	37	8,140	20	2,080	13	1,190	7	410	6	319	5	236
14	31	7,090	19	1,930	17	1,560	7	367	6	309	8	387
15	26	5,930	17	1,730	14	1,240	7	365	5	254	11	573
16	20	4,490	15	1,460	9	720	7	363	5	251	13	737
17	19	4,230	13	1,200	9	637	7	359	5	250	16	1,470
18	20	4,360	13	1,240	9	604	8	410	5	246	19	2,200
19	21	4,430	13	1,210	10	742	8	413	4	193	19	2,490
20	23	4,410	13	1,180	12	934	9	457	5	244	22	2,800
21	24	4,280	13	1,180	12	997	8	408	6	309	24	3,180
22	23	3,920	13	1,120	10	843	8	406	7	382	21	2,880
23	25	3,950	13	1,070	8	681	9	457	8	458	18	2,410
24	25	3,870	13	1,090	6	465	9	457	9	535	18	2,290
25	25	3,660	13	1,150	4	313	9	457	8	480	16	1,950
26	24	3,450	16	1,440	4	316	9	457	7	420	14	1,660
27	23	3,190	12	1,020	5	339	9	459	7	412	12	1,410
28	22	2,960	11	839	5	361	9	462	7	404	13	1,540
29	21	2,790	12	882	6	387	8	408	---	---	15	1,800
30	21	2,760	13	998	5	351	7	359	---	---	17	2,120
31	21	2,800	---	---	5	363	7	361	---	---	19	2,420
TOTAL	---	138,290	---	56,609	---	22,274	---	12,637	---	9,931	---	37,732







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

## UPPER WISCONSIN RIVER BASIN

05391000 WISCONSIN RIVER AT RAINBOW LAKE, NEAR LAKE TOMAHAWK, WI

LOCATION.--Lat 45°49'50", long 89°33'08", in NE ¼ NE ¼ sec.36, T.39 N., R.7 E., Oneida County, Hydrologic Unit 07070001, on right bank 500 ft downstream from Gilmore Creek, 0.4 mi downstream from Rainbow Lake, and 2.3 mi northeast of Lake Tomahawk.

DRAINAGE AREA.--757 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1936 to current year. Prior to October 1955, published as "at Rainbow Reservoir, near Lake Tomahawk."

REVISED RECORDS.--WSP 895: 1937(M). WSP 1508: 1944. WDR WI-83-1: Drainage area. WDR WI-80-1: Datum.

GAGE.--Water-stage recorder. Datum of gage is 1,569.05 ft above NGVD of 1929 (levels by Wisconsin Valley Improvement Co.).

REMARKS.--Records good (see page 11). Flow regulated by Rainbow Lake and 12 smaller reservoirs upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	518	797	894	830	693	479	324	320	687	591	481	471
2	475	790	890	828	686	479	332	320	621	587	455	462
3	484	785	890	822	686	482	333	320	580	582	458	453
4	521	871	887	822	682	455	333	323	568	581	458	452
5	534	926	873	819	684	460	332	323	565	578	458	448
6	550	904	868	814	676	462	333	327	566	569	462	446
7	726	890	873	814	670	442	333	320	569	563	463	441
8	852	884	873	809	651	452	326	389	566	563	496	440
9	847	882	874	805	645	473	322	570	586	568	516	438
10	1,160	907	872	804	636	456	326	665	554	570	514	434
11	1,430	929	866	798	631	436	326	1,030	548	539	514	433
12	1,580	943	864	796	623	422	329	1,620	544	520	e516	432
13	1,630	945	864	789	614	423	336	1,500	549	517	e516	430
14	1,620	939	866	786	605	413	340	1,430	549	513	e514	429
15	1,390	934	864	781	598	393	346	1,440	549	508	513	429
16	1,220	934	865	777	592	390	347	1,440	548	509	511	428
17	1,190	931	865	774	585	358	337	1,580	597	510	509	425
18	1,090	927	865	771	575	312	315	1,670	623	509	500	424
19	1,030	926	870	768	564	280	321	1,660	622	510	490	421
20	1,030	925	873	761	555	267	335	1,540	663	512	494	418
21	1,020	921	866	757	546	273	339	1,280	695	515	497	415
22	987	918	864	750	540	278	339	1,160	702	516	498	411
23	961	918	859	745	533	285	340	1,120	704	516	496	413
24	941	916	856	732	525	291	341	1,070	704	519	496	410
25	855	907	856	717	511	294	344	966	643	522	494	406
26	806	899	846	716	496	294	353	917	604	523	490	406
27	806	899	839	714	491	300	352	926	601	523	489	404
28	805	899	837	706	483	305	347	928	602	523	486	402
29	804	897	839	702	---	309	332	858	595	524	483	402
30	797	892	834	701	---	310	319	748	591	528	478	407
31	797	---	831	694	---	315	---	711	---	532	476	---
TOTAL	29,456	27,035	26,783	23,902	16,776	11,588	10,032	29,471	18,095	16,640	15,221	12,830
MEAN	950	901	864	771	599	374	334	951	603	537	491	428
MAX	1,630	945	894	830	693	482	353	1,670	704	591	516	471
MIN	475	785	831	694	483	267	315	320	544	508	455	402

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

MEAN	653	694	775	822	813	642	414	715	725	668	586	596
MAX	1,445	1,250	1,178	1,108	1,161	1,044	1,330	1,798	1,863	1,387	1,472	1,282
(WY)	(1952)	(1939)	(1955)	(1943)	(1952)	(1939)	(1973)	(1973)	(1939)	(1968)	(1938)	(1980)
MIN	263	170	330	371	417	316	138	173	228	237	243	268
(WY)	(1988)	(1949)	(1949)	(1990)	(1977)	(2000)	(1949)	(1949)	(1987)	(1988)	(1988)	(1948)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL TOTAL	279,488		237,829			
ANNUAL MEAN	766		652		676	
HIGHEST ANNUAL MEAN					1,062	
LOWEST ANNUAL MEAN					359	
HIGHEST DAILY MEAN	1,840	Apr 30	1,670	May 18	2,820	Sep 5, 1941
LOWEST DAILY MEAN	283	Apr 12	267	Mar 20	35	Apr 6, 1955
ANNUAL SEVEN-DAY MINIMUM	320	Apr 11	281	Mar 19	107	Apr 12, 1965
MAXIMUM PEAK FLOW			1,670	May 17-20	3,570	Sep 5, 1941
MAXIMUM PEAK STAGE			4.38	May 17-20	7.59	Sep 5, 1941
10 PERCENT EXCEEDS	1,080		930		1,030	
50 PERCENT EXCEEDS	683		569		648	
90 PERCENT EXCEEDS	519		333		312	

(e) Estimated due to ice effect or missing record

05393500 SPIRIT RIVER AT SPIRIT FALLS, WI

LOCATION.--Lat 45°26'57", long 89°58'45" (revised), in SW ¼ NW ¼ sec.10, T.34 N., R.4 E., Lincoln County, Hydrologic Unit 07070001, on right bank 40 ft downstream of bridge 0.2 mi south of Spirit Falls, 0.6 mi upstream from Squaw Creek, and 2.0 mi downstream from Richie Creek.

DRAINAGE AREA.--81.6 mi².

PERIOD OF RECORD.--April 1942 to current year.

REVISED RECORDS.--WSP 1308: 1943(M), 1948-50(M). WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,461.63 ft above NGVD of 1929. Prior to Oct. 4, 1982, nonrecording gage 40 ft upstream at same datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003 DAILY MEAN VALUES

Table with columns for DAY, OCT, NOV, DEC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP. Rows show daily discharge values for each month, including a summary row at the bottom.

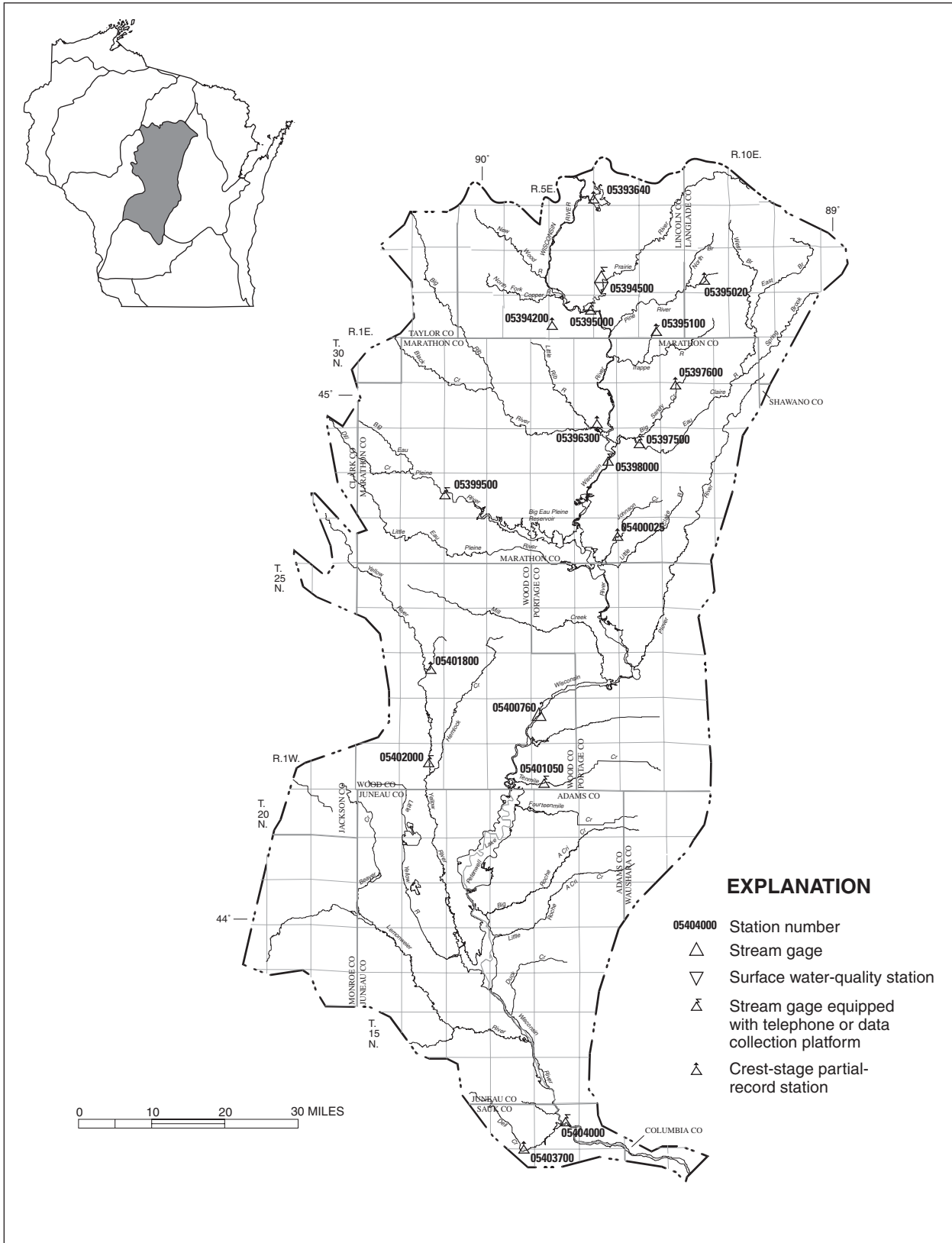
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2003, BY WATER YEAR (WY)

Table with columns for WY (Water Year) and rows for MEAN, MAX, MIN values. Includes years in parentheses for specific data points.

SUMMARY STATISTICS

Table comparing statistics for 2002 CALENDAR YEAR, 2003 WATER YEAR, and WATER YEARS 1942 - 2003. Rows include ANNUAL TOTAL, MEAN, HIGHEST ANNUAL MEAN, etc.

- (a) Ice affected
(b) From rating curve extended above 2,500 ft³/s
(c) Estimated due to ice effect or missing record



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

# CENTRAL WISCONSIN RIVER BASIN

## 05394500 PRAIRIE RIVER NEAR MERRILL, WI

LOCATION.--Lat 45°14'09", long 89°38'59", in SW ¼ SW ¼ sec. 20, T.32 N., R.7 E., Lincoln County, Hydrologic Unit 07070002, on left bank 40 ft upstream from bridge on County Trunk Highway C, 1.5 mi upstream from Meadow Creek, 4.5 mi northeast of Merrill, and 8.0 mi upstream from mouth.

DRAINAGE AREA.--184 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1914 to September 1931, August 1939 to current year. Monthly discharge for some periods published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1915-17(M), 1919-21(M), 1923-31(M), 1942-43(M), 1945(M), 1948-50(M). WDR WI-77-1: Drainage area. WDR WI-79-1: 1972.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,297.22 ft above NGVD of 1929. Prior to Oct. 9, 1968, nonrecording gage 40 ft downstream at same datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	222	173	e88	e76	e66	e64	204	229	276	102	102	77
2	198	162	e96	e74	e66	e62	251	215	217	100	114	76
3	174	156	e96	e72	e64	e60	216	199	187	100	130	75
4	292	152	96	e72	e62	e58	153	189	172	112	138	75
5	462	150	98	e74	e60	e58	126	236	159	109	122	75
6	508	152	98	e76	e60	e60	166	464	151	98	113	75
7	515	150	e96	e80	e60	e64	149	471	167	95	105	75
8	479	148	e86	e82	e62	e62	124	394	202	93	99	75
9	420	148	e84	e76	e62	e62	133	384	249	91	94	75
10	362	157	e88	e65	e62	e66	211	440	320	92	91	74
11	311	169	94	e67	e62	e74	292	809	447	98	91	74
12	277	162	97	e64	e62	e75	314	1,310	364	95	87	91
13	274	152	102	e60	e62	82	287	1,150	272	91	84	121
14	249	147	104	e58	e62	83	260	807	214	88	82	130
15	220	138	102	e56	e62	91	283	550	180	93	84	122
16	197	133	e86	e56	e62	121	980	411	158	90	80	109
17	179	120	e96	e56	e62	315	1,360	327	142	87	79	99
18	174	e120	e100	e56	e64	514	1,210	287	132	86	78	92
19	192	e120	e110	e56	e66	442	1,070	266	123	84	77	91
20	206	120	e110	e54	e68	325	1,160	367	114	84	88	89
21	203	121	e100	e54	e68	307	1,250	373	109	85	94	88
22	200	121	e94	e54	e66	291	1,060	310	104	85	85	96
23	203	121	e90	e54	e64	236	771	264	102	86	81	97
24	199	117	e88	e54	e60	241	564	235	115	85	83	100
25	200	e100	e86	e56	e60	220	437	213	117	82	83	108
26	245	e100	e84	e58	e62	184	361	199	109	86	81	110
27	268	e100	e84	e60	e64	156	313	181	104	99	79	111
28	245	e98	e86	e62	e64	208	287	175	106	105	79	113
29	217	e110	e88	e64	---	242	263	172	112	93	81	112
30	199	e100	e88	e66	---	220	242	209	108	88	79	109
31	186	---	e74	e66	---	196	---	395	---	93	77	---
TOTAL	8,276	4,017	2,889	1,978	1,764	5,239	14,497	12,231	5,332	2,875	2,840	2,814
MEAN	267	134	93.2	63.8	63.0	169	483	395	178	92.7	91.6	93.8
MAX	515	173	110	82	68	514	1,360	1,310	447	112	138	130
MIN	174	98	74	54	60	58	124	172	102	82	77	74
CFSM	1.45	0.73	0.51	0.35	0.34	0.92	2.63	2.14	0.97	0.50	0.50	0.51
IN.	1.67	0.81	0.58	0.40	0.36	1.06	2.93	2.47	1.08	0.58	0.57	0.57

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	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
MEAN	167	167	113	91.8	90.0	187	435	259	209	137	131	171																																																																														
MAX	527	388	199	169	158	676	899	723	598	401	494	656																																																																														
(WY)	(1942)	(1920)	(1992)	(1960)	(1930)	(1973)	(1916)	(1960)	(1993)	(1978)	(1926)	(1941)																																																																														
MIN	70.8	76.7	66.1	60.5	63.0	68.2	106	98.8	70.6	68.3	68.1	65.1																																																																														
(WY)	(1990)	(1951)	(1990)	(1925)	(2003)	(1956)	(1990)	(1931)	(1988)	(1989)	(1957)	(1989)																																																																														

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1914 - 2003	
ANNUAL TOTAL	73,304		64,752			
ANNUAL MEAN	201		177		179	
HIGHEST ANNUAL MEAN					272	
LOWEST ANNUAL MEAN					108	
HIGHEST DAILY MEAN	1,810	Apr 13	1,360	Apr 17	4,200	Aug 31, 1941
LOWEST DAILY MEAN	(a)66	Feb 1	(a)54	Jan 20-24	35	Oct 26, 1947
ANNUAL SEVEN-DAY MINIMUM	(a)73	Jan 31	(a)55	Jan 18	52	Dec 28, 1948
MAXIMUM PEAK FLOW			1,420	Apr 17	(b)5,800	Aug 31, 1941
MAXIMUM PEAK STAGE			5.74	Apr 17	(c)9.45	Aug 31, 1941
INSTANTANEOUS LOW FLOW			44	Mar 5	34	Oct 26, 1947
ANNUAL RUNOFF (CFSM)	1.09		0.96		0.98	
ANNUAL RUNOFF (INCHES)	14.82		13.09		13.25	
10 PERCENT EXCEEDS	416		326		344	
50 PERCENT EXCEEDS	121		104		115	
90 PERCENT EXCEEDS	83		62		76	

(a) Ice affected

(b) Based on rating curve extended above 2,200 ft<sup>3</sup>/s

(c) From floodmarks

(e) Estimated due to ice effect or missing record

05394500 PRAIRIE RIVER NEAR MERRILL, WI—Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1998 to current year.

INSTRUMENTATION.--Continuous water temperature recorder since October 1998. Sensor located near midstream.

REMARKS.--Records represent water temperature at sensor within 0.5°C. Record was complete in the 2003 water year, except partial days Jan. 15 and 16.

## EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum temperature, 29.0°C, July 1, 2002; minimum, 0.0°C on many days.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum temperature, 25.0°C, July 3, 5; minimum 0.0°C, many days in winter.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	16.0	12.5	14.0	3.0	1.0	2.0	0.5	0.0	0.0	1.5	0.0	0.5
2	14.0	11.5	13.0	3.5	1.0	2.0	1.5	0.0	0.0	2.0	0.0	0.5
3	12.5	10.5	11.5	4.0	1.0	2.0	1.5	0.0	0.0	2.5	0.0	0.5
4	13.0	11.5	12.0	4.5	2.0	2.5	1.5	0.0	0.0	1.5	0.0	0.5
5	12.0	10.0	11.0	2.5	2.0	2.0	1.0	0.0	0.0	1.5	0.0	0.0
6	10.5	9.0	10.0	3.5	2.0	2.5	1.0	0.0	0.0	2.5	0.0	0.5
7	9.0	7.5	8.0	4.5	1.5	3.0	1.0	0.0	0.0	2.0	0.0	1.0
8	9.5	7.5	8.5	5.0	2.5	3.5	1.5	0.0	0.0	2.0	0.0	1.0
9	10.5	8.0	9.0	6.5	4.0	5.0	1.5	0.0	0.0	1.5	0.0	0.5
10	9.0	7.5	8.5	6.5	5.5	6.0	2.0	0.0	0.5	2.0	0.0	0.5
11	11.0	7.5	9.5	5.5	3.0	4.5	2.0	0.0	0.5	2.0	0.0	0.5
12	10.5	9.0	10.0	3.5	2.0	2.5	0.5	0.0	0.0	2.5	0.0	0.5
13	9.0	6.5	7.5	3.0	1.0	2.5	0.5	0.0	0.0	2.5	0.0	0.5
14	8.0	5.0	6.5	3.0	1.0	2.5	1.0	0.0	0.0	2.5	0.0	0.5
15	8.5	6.0	6.5	1.5	0.5	1.0	0.5	0.0	0.0	---	---	---
16	6.0	3.5	5.0	2.5	0.0	1.0	1.0	0.0	0.0	---	---	---
17	6.5	3.5	4.5	1.5	0.0	0.5	0.5	0.0	0.0	2.5	0.0	0.5
18	4.5	3.5	4.0	1.0	0.0	0.5	0.5	0.0	0.5	1.5	0.0	0.5
19	4.5	4.0	4.0	2.5	0.0	1.0	0.5	0.0	0.5	1.5	0.0	0.5
20	6.5	3.5	4.5	1.5	0.0	1.0	0.5	0.0	0.0	2.5	0.0	0.5
21	4.5	2.0	3.0	2.0	1.0	1.5	0.5	0.0	0.0	2.5	0.0	0.5
22	3.5	2.5	3.0	2.0	1.0	1.5	0.5	0.0	0.0	2.5	0.0	0.5
23	5.5	2.5	3.5	3.0	1.0	1.5	1.5	0.0	0.0	2.5	0.0	0.5
24	4.5	2.5	3.5	1.5	0.0	0.5	1.0	0.0	0.5	1.5	0.0	0.5
25	4.0	3.5	4.0	1.5	0.0	0.0	1.0	0.0	0.0	1.5	0.0	0.5
26	5.0	4.0	4.0	1.5	0.0	0.0	2.0	0.0	0.5	2.5	0.0	0.5
27	4.0	2.5	3.5	0.5	0.0	0.0	2.0	0.0	0.5	1.5	0.0	0.5
28	5.0	1.5	3.5	0.5	0.0	0.0	1.0	0.0	0.5	1.5	0.0	0.5
29	5.0	3.0	4.0	1.5	0.0	0.5	1.5	0.0	0.5	2.5	0.0	0.5
30	5.0	3.0	4.0	0.5	0.0	0.0	1.0	0.0	0.5	2.0	0.0	0.5
31	5.0	2.0	3.5	---	---	---	2.0	0.0	0.5	1.5	0.0	0.5
MONTH	16.0	1.5	6.7	6.5	0.0	1.8	2.0	0.0	0.2	2.5	0.0	0.5

## WISCONSIN RIVER BASIN

05394500 PRAIRIE RIVER NEAR MERRILL, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1.5	0.0	0.5	2.0	0.0	0.5	7.0	2.0	4.0	12.5	6.0	9.0
2	1.0	0.0	0.0	1.5	0.0	0.5	4.5	2.0	3.5	12.5	6.5	9.0
3	1.0	0.0	0.0	1.0	0.0	0.5	2.5	0.0	1.0	12.5	6.0	9.0
4	1.5	0.0	0.5	1.5	0.0	0.5	0.5	0.0	0.0	10.5	6.5	8.5
5	2.0	0.0	0.5	2.0	0.0	0.5	2.5	0.0	1.0	8.5	6.5	7.5
6	2.0	0.0	0.5	2.0	0.0	0.5	5.0	0.0	2.0	7.0	5.5	6.0
7	2.5	0.0	0.5	1.5	0.0	0.5	3.0	0.0	1.5	6.5	5.5	6.0
8	1.5	0.0	0.5	1.5	0.0	0.0	7.5	0.0	3.0	10.5	6.0	8.5
9	2.5	0.0	0.5	1.5	0.0	0.5	9.0	1.0	5.0	9.5	7.5	8.5
10	2.0	0.0	0.5	1.5	0.0	0.5	8.5	2.5	5.5	9.5	6.0	8.0
11	2.5	0.0	0.5	1.5	0.0	0.5	8.5	3.0	5.5	9.5	6.5	8.0
12	2.0	0.0	0.5	1.5	0.0	0.5	8.5	3.0	5.5	9.5	5.5	7.5
13	2.0	0.0	0.5	1.5	0.0	0.5	9.0	3.0	6.0	12.5	7.5	10.0
14	2.0	0.0	0.5	1.5	0.0	0.5	12.5	5.0	8.5	11.5	10.0	11.0
15	2.0	0.0	0.5	2.0	0.0	0.5	13.0	9.0	11.0	13.0	9.0	11.0
16	2.5	0.0	0.5	1.5	0.0	0.5	9.5	1.0	4.0	13.0	10.0	11.5
17	2.5	0.0	0.5	2.0	0.0	0.5	1.0	0.5	0.5	13.5	10.0	12.0
18	1.5	0.0	0.0	0.5	0.0	0.0	1.5	0.5	1.0	15.0	10.5	13.0
19	2.0	0.0	0.5	1.5	0.0	0.5	2.5	1.0	1.5	14.0	13.0	13.0
20	2.5	0.0	0.5	1.0	0.0	0.5	3.5	2.5	3.0	14.0	11.0	12.5
21	1.5	0.0	0.5	1.0	0.0	0.5	3.0	2.0	2.5	13.5	9.5	11.5
22	1.5	0.0	0.5	2.0	0.5	1.5	5.5	1.0	3.0	11.5	9.5	10.5
23	2.0	0.0	0.5	5.0	0.5	2.5	7.0	2.5	5.0	15.0	8.5	11.5
24	1.5	0.0	0.5	5.0	1.0	3.0	8.0	4.0	6.5	17.0	10.0	13.5
25	2.0	0.0	0.5	6.0	1.0	3.0	10.5	6.0	8.0	17.5	11.0	14.5
26	2.5	0.0	0.5	5.5	1.0	3.5	10.0	5.5	8.0	18.5	11.5	15.0
27	2.5	0.0	0.5	3.0	1.5	2.0	10.0	6.5	8.5	20.0	13.0	16.5
28	2.0	0.0	0.5	2.5	0.5	1.5	12.0	7.0	9.5	17.0	14.5	16.0
29	---	---	---	4.0	0.0	1.5	11.5	6.5	9.0	19.5	12.5	15.5
30	---	---	---	4.0	0.0	2.0	9.5	7.5	8.5	17.5	13.5	15.5
31	---	---	---	5.0	0.5	2.5	---	---	---	15.5	11.5	13.5
MONTH	2.5	0.0	0.4	6.0	0.0	1.0	13.0	0.0	4.7	20.0	5.5	11.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	16.5	11.0	14.0	23.5	16.0	19.5	21.5	17.0	19.0	19.0	12.5	15.5
2	17.0	12.0	15.0	22.5	17.0	19.5	19.5	17.0	18.0	19.5	13.0	16.5
3	19.0	13.5	16.0	25.0	17.5	21.0	18.5	16.5	17.5	17.5	14.0	16.0
4	18.5	13.0	16.0	23.5	19.0	21.0	21.0	16.5	18.0	19.0	13.0	15.5
5	18.5	14.5	16.5	25.0	18.0	21.5	22.0	16.5	19.0	18.5	11.5	15.0
6	16.0	13.5	14.5	22.0	18.0	20.0	22.5	17.5	19.5	19.5	13.0	16.0
7	15.5	13.0	14.0	23.5	17.0	20.0	22.0	17.0	19.0	20.5	14.5	17.5
8	14.0	12.5	13.5	21.0	17.0	18.5	21.5	17.0	19.0	22.0	16.5	19.0
9	15.0	12.0	13.5	18.0	15.5	17.0	22.5	15.5	19.0	22.0	17.0	19.0
10	13.5	13.0	13.0	16.5	15.0	15.5	22.0	16.5	19.0	22.0	17.0	19.5
11	17.0	12.0	14.5	18.0	13.5	15.5	22.0	17.0	19.5	22.0	17.0	19.0
12	18.0	14.0	16.0	20.0	13.5	17.0	23.0	15.5	19.0	18.5	16.0	17.0
13	19.5	15.5	17.5	23.0	15.5	19.0	23.5	16.0	19.5	17.5	15.5	16.5
14	21.5	16.0	18.5	20.5	17.0	19.0	23.5	17.0	20.0	16.5	14.5	15.5
15	22.5	16.5	19.5	22.0	17.5	19.0	23.0	18.0	20.5	15.0	12.0	13.5
16	23.0	16.0	19.5	23.5	15.0	19.0	24.5	18.5	21.5	17.0	11.0	14.0
17	22.5	16.5	19.5	21.5	18.0	19.5	24.0	18.5	21.0	18.0	13.0	15.5
18	23.5	17.5	20.0	22.5	15.0	19.0	24.0	17.5	20.5	19.5	14.5	16.5
19	22.0	16.0	19.0	22.5	15.5	19.0	24.5	18.5	21.5	16.5	12.0	14.5
20	22.0	14.5	18.0	23.5	17.0	20.5	24.0	19.5	21.5	15.5	9.5	12.5
21	23.0	14.5	18.5	20.5	17.0	19.0	24.5	20.0	22.0	14.5	10.0	12.5
22	23.5	15.5	19.5	19.5	14.5	17.0	23.0	17.0	20.0	14.0	12.0	13.0
23	21.5	17.5	19.5	21.0	14.0	17.5	19.0	16.0	17.5	15.0	10.0	12.5
24	22.5	17.5	20.0	22.5	15.0	18.5	22.5	15.5	19.0	12.5	10.0	11.5
25	23.5	19.5	21.5	22.5	16.5	19.0	22.5	17.5	20.0	11.5	8.5	10.0
26	21.0	16.0	18.5	23.0	18.0	20.0	24.0	17.5	20.5	11.0	9.0	10.0
27	20.5	14.5	17.0	24.5	18.5	21.5	22.0	16.0	19.0	10.0	9.0	9.5
28	17.0	13.5	15.0	23.5	17.5	20.5	19.0	15.0	17.5	10.0	8.0	9.0
29	19.5	13.0	16.0	23.5	16.5	20.0	20.0	15.5	17.0	8.0	6.0	7.0
30	22.5	15.0	18.5	22.5	17.5	20.0	19.0	12.5	15.5	9.0	5.5	7.0
31	---	---	---	21.5	17.5	19.5	17.0	12.0	15.0	---	---	---
MONTH	23.5	11.0	17.1	25.0	13.5	19.1	24.5	12.0	19.2	22.0	5.5	14.2



05395000 WISCONSIN RIVER AT MERRILL, WI

LOCATION.--Lat 45°10'41", long 89°40'52", on line between secs.12 and 13, T.31 N., R.6 E., Lincoln County, Hydrologic Unit 07070002, on left bank 300 ft downstream from U.S. Highway 51 bridge at east end of Merrill, and 0.5 mi downstream from Prairie River.

DRAINAGE AREA.--2,760 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1902 to current year. Monthly discharge data for some periods from December 1902 to September 1909 published in WSP 1308. Mostly seasonal unpublished daily discharge records from December 1902 to September 1905 in District files.

REVISED RECORDS.--WSP 1308: 1904-7, 1909-11, 1913. WSP 1508: 1908, 1915-16(M), 1917, 1920-21(M), 1925(M), 1930, 1935-36. WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,228.85 ft above NGVD of 1929. Prior to June 18, 1903, nonrecording gage at different datum. June 18, 1903, to Sept. 10, 1914, non recording gage at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow regulated by 20 reservoirs and 9 powerplants upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,440	3,160	2,380	2,430	e1,700	e1,700	e2,100	2,570	3,240	2,130	1,790	1,160
2	4,570	3,110	2,530	2,010	e1,600	e2,000	e2,200	2,440	3,130	2,030	1,490	1,420
3	4,490	2,880	2,600	2,310	e2,100	e1,800	e2,300	2,370	2,680	1,840	1,770	1,350
4	5,100	2,920	2,830	2,340	e2,200	e1,300	1,950	2,120	2,210	1,590	1,840	1,230
5	5,190	3,140	2,490	2,130	e1,900	e1,300	1,400	2,990	2,200	1,830	2,410	1,210
6	6,870	3,080	2,570	2,160	e1,900	e1,500	1,880	4,030	2,210	1,850	1,640	1,240
7	8,550	2,940	2,590	2,280	e1,900	e1,400	2,120	4,300	2,640	2,060	1,840	1,160
8	8,960	3,020	2,330	2,150	e1,900	e1,500	1,850	4,200	2,910	1,770	1,600	1,260
9	7,900	3,190	2,510	2,180	e2,000	e1,400	1,820	5,280	3,610	1,640	1,770	1,240
10	7,040	3,100	2,390	2,230	e1,800	e1,600	2,360	6,630	4,630	1,890	1,570	1,340
11	6,360	3,140	2,370	2,250	e1,900	e1,500	2,870	11,400	6,530	1,890	1,640	1,170
12	5,880	3,050	2,300	2,050	e1,800	e1,600	3,020	17,500	6,310	1,690	1,490	1,390
13	5,760	3,120	2,760	2,150	e1,700	e1,700	2,800	14,500	4,860	1,730	1,540	1,880
14	5,660	3,150	2,520	2,210	e1,800	e1,600	2,760	10,700	3,680	2,020	1,590	1,680
15	5,760	3,040	2,210	2,230	e1,500	e1,800	2,990	8,170	3,130	1,880	1,380	1,190
16	4,630	3,230	2,510	2,170	e1,400	e2,000	8,690	6,390	2,920	1,730	1,440	1,360
17	4,510	3,120	2,560	2,130	e1,600	e2,600	10,800	6,120	2,620	1,690	1,370	1,490
18	4,280	2,920	2,540	2,030	e1,700	e3,300	11,200	5,180	2,500	1,710	1,580	1,210
19	3,500	2,810	2,620	e2,300	e1,800	e3,100	9,600	5,050	2,010	1,520	1,540	1,250
20	3,760	2,930	2,470	e2,200	e1,600	e2,900	10,500	5,720	1,940	1,570	e1,500	1,230
21	3,770	3,050	2,470	e2,100	e1,600	e2,900	11,900	5,310	2,200	1,910	e1,440	1,060
22	4,220	2,810	2,430	e2,100	e1,700	e2,700	10,400	4,280	1,940	1,750	e1,400	1,300
23	4,090	2,740	2,460	e2,200	e1,500	e2,100	7,410	3,570	2,140	1,720	e1,350	1,420
24	4,030	2,760	2,570	e1,800	e1,600	e2,100	6,760	3,550	2,300	1,540	e1,450	1,290
25	3,640	2,520	2,510	e1,500	e1,700	e2,000	5,100	3,270	2,250	1,420	e1,450	1,290
26	3,910	2,820	2,430	e1,500	e1,600	e2,100	4,470	2,990	1,720	1,630	1,560	1,130
27	4,190	2,720	2,330	e1,600	e1,500	e1,900	4,030	3,150	1,930	1,880	1,440	1,510
28	4,260	2,400	2,420	e1,800	e1,600	e1,900	3,830	3,180	2,280	2,160	1,340	1,360
29	3,510	2,440	2,230	e2,400	---	e2,100	3,240	2,720	2,150	1,790	1,330	1,540
30	3,580	2,750	2,280	e2,000	---	e1,700	3,360	2,690	1,980	1,760	1,390	1,620
31	3,340	---	2,200	e1,800	---	e1,900	---	3,590	---	2,060	1,120	---
TOTAL	154,750	88,060	76,410	64,740	48,600	61,000	145,710	165,960	86,850	55,680	48,060	39,980
MEAN	4,992	2,935	2,465	2,088	1,736	1,968	4,857	5,354	2,895	1,796	1,550	1,333
MAX	8,960	3,230	2,830	2,430	2,200	3,300	11,900	17,500	6,530	2,160	2,410	1,880
MIN	3,340	2,400	2,200	1,500	1,400	1,300	1,400	2,120	1,720	1,420	1,120	1,060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2003, BY WATER YEAR (WY)

	2,547	2,395	2,091	1,985	1,931	2,579	4,751	3,682	3,089	2,342	2,079	2,522
MEAN	2,547	2,395	2,091	1,985	1,931	2,579	4,751	3,682	3,089	2,342	2,079	2,522
MAX	8,654	4,632	3,887	3,138	3,063	6,275	11,500	8,931	9,923	5,862	5,451	9,069
(WY)	(1912)	(1939)	(1992)	(1939)	(1932)	(1935)	(1916)	(1904)	(1905)	(1968)	(1912)	(1903)
MIN	760	775	913	957	961	1,071	1,348	1,082	810	724	719	873
(WY)	(1977)	(1977)	(1977)	(1990)	(1990)	(1908)	(1990)	(1987)	(1988)	(1988)	(1934)	(1987)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1903 - 2003	
ANNUAL TOTAL	1,225,320		1,035,800		2,653	
ANNUAL MEAN	3,357		2,838		4,558	
HIGHEST ANNUAL MEAN					1,348	
LOWEST ANNUAL MEAN					1904	
HIGHEST DAILY MEAN	19,900	Apr 13	17,500	May 12	36,400	Sep 1, 1941
LOWEST DAILY MEAN	1,540	Aug 10	1,060	Sep 21	90	Sep 26, 1908
ANNUAL SEVEN-DAY MINIMUM	(a)1,840	Feb 12	1,230	Sep 5	194	Sep 21, 1908
MAXIMUM PEAK FLOW			17,800	May 12	(b)49,400	Aug 31, 1941
MAXIMUM PEAK STAGE			11.56	May 12	18.26	Aug 31, 1941
10 PERCENT EXCEEDS	6,920		5,070		4,430	
50 PERCENT EXCEEDS	2,450		2,200		2,100	
90 PERCENT EXCEEDS	1,900		1,410		1,280	

(a) Ice affected  
 (b) From rating curve extended above 20,000 ft<sup>3</sup>/s  
 (c) Estimated due to ice effect or missing record



05398000 WISCONSIN RIVER AT ROTHSCHILD, WI

LOCATION.--Lat 44°53'09", long 89°38'05", in sec.26, T.28 N., R.7 E., Marathon County, Hydrologic Unit 07070002, on left bank at Rothschild, 0.5 mi downstream from Rothschild Dam, 1.7 mi north of bridge on U.S. Highway 51, 2.0 mi downstream from Eau Claire River, and 5.0 mi upstream from Black Creek.

DRAINAGE AREA.--4,020 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1944 to current year.

REVISED RECORDS.--WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,125.86 ft above NGVD of 1929. Prior to Oct. 1, 1975, at datum 10.00 ft higher. Auxiliary water-stage recorder in Mosinee Pond 8 mi downstream. Prior to July 23, 1964, nonrecording auxiliary gage at same site and datum, read hourly.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow regulated by 20 reservoirs and 12 powerplants upstream from station. Gage-height telemeter at station.

EXTREMES OUTSIDE THE PERIOD OF RECORD.--Flood of Sept. 1, 1941, reached stage of 22.3 ft, datum then in use, from tailwater data at Rothschild dam, discharge, 75,000 ft<sup>3</sup>/s from rating curve extended above 45,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,520	4,530	e2,400	e2,400	e2,000	e1,500	4,540	4,180	4,480	2,400	2,190	1,160
2	5,970	4,280	e2,500	e2,100	e1,900	e1,500	4,850	3,890	4,190	2,480	1,620	1,270
3	5,760	4,160	e2,400	e2,200	e1,900	e1,900	4,720	3,630	3,480	2,160	1,790	1,350
4	9,300	3,850	e2,700	e2,300	e2,100	e1,400	3,470	3,380	2,980	2,180	1,920	1,160
5	12,500	4,190	e2,500	e2,300	e1,900	e1,400	2,290	4,260	3,020	1,970	2,440	1,260
6	11,200	4,100	e2,500	e2,300	e1,900	e1,400	2,180	8,160	2,540	2,070	2,100	1,300
7	13,000	4,040	e2,700	e2,400	e2,000	e1,500	2,890	8,160	3,430	2,100	1,810	1,160
8	13,000	3,940	e2,300	e2,400	e1,900	e1,400	2,470	6,990	3,550	2,330	1,620	1,200
9	11,900	4,070	e2,200	e2,300	e2,000	e1,500	2,230	8,260	4,500	1,780	1,800	1,340
10	10,100	3,910	e2,400	e2,100	e1,800	e1,600	3,920	12,200	5,670	2,060	1,580	1,120
11	9,320	4,010	e2,600	e2,000	e1,900	e1,500	4,850	15,700	8,830	2,040	1,510	1,420
12	8,400	4,010	e2,500	e1,900	e2,000	1,400	5,100	32,500	8,960	2,090	1,580	1,360
13	8,200	3,850	e2,600	e1,900	e2,000	1,730	4,500	26,300	7,100	1,840	1,650	2,020
14	7,690	3,930	e2,900	e1,900	e2,000	1,250	4,200	17,000	5,000	2,010	1,690	1,930
15	7,580	3,800	e2,500	e1,900	e1,900	1,810	4,470	11,900	4,120	2,150	1,800	1,650
16	5,980	3,800	e2,300	e1,900	e1,500	3,040	16,300	9,040	3,730	2,000	1,130	1,390
17	5,660	3,760	e2,600	e1,900	e1,400	7,300	29,700	8,170	3,590	1,570	1,250	1,710
18	5,370	3,590	e2,800	e2,000	e1,700	8,790	22,000	7,050	2,960	2,080	1,330	1,300
19	4,930	3,440	e2,900	e1,900	e1,800	7,110	18,400	6,740	2,790	1,510	1,490	1,260
20	5,080	3,440	e2,800	e1,900	e1,600	5,930	18,500	7,230	2,350	1,700	1,420	1,360
21	4,990	3,640	e2,700	e1,900	e1,500	5,750	20,600	7,230	2,640	1,820	1,400	1,230
22	5,350	e3,400	e2,500	e1,900	e1,500	5,630	17,700	5,990	2,440	1,950	1,340	1,400
23	5,500	e3,300	e2,200	e2,000	e1,700	4,700	12,300	5,240	2,360	1,620	1,280	1,680
24	5,490	e3,200	e2,400	e2,100	e1,500	4,450	10,200	4,850	2,930	1,890	1,390	1,450
25	5,310	e2,900	e2,500	e1,800	e1,600	4,100	8,040	4,640	2,800	1,440	1,340	1,350
26	6,360	e3,100	e2,500	e1,700	e1,700	3,830	6,920	3,930	2,540	1,500	1,460	1,460
27	7,220	e3,100	e2,500	e1,700	e1,500	3,460	6,150	4,160	1,970	1,850	1,450	1,530
28	6,570	e2,800	e2,600	e1,600	e1,400	4,390	5,780	3,980	2,700	2,090	1,290	1,500
29	5,330	e2,700	e2,500	e2,200	---	6,660	5,190	3,710	2,700	1,950	1,250	1,910
30	5,250	e2,800	e2,500	e2,300	---	4,700	5,080	3,370	2,560	1,710	1,390	1,820
31	4,860	---	e2,100	e2,000	---	4,220	---	4,490	---	1,930	1,110	---
TOTAL	228,690	109,640	78,100	63,200	49,600	106,850	259,540	256,330	112,910	60,270	48,420	43,050
MEAN	7,377	3,655	2,519	2,039	1,771	3,447	8,651	8,269	3,764	1,944	1,562	1,435
MAX	13,000	4,530	2,900	2,400	2,100	8,790	29,700	32,500	8,960	2,480	2,440	2,020
MIN	4,860	2,700	2,100	1,600	1,400	1,250	2,180	3,370	1,970	1,440	1,110	1,120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)

MEAN	3,266	3,266	2,714	2,436	2,378	4,148	7,580	4,713	3,848	2,807	2,461	3,132
MAX	10,020	7,262	5,484	3,787	4,051	13,300	14,640	13,930	11,920	7,219	6,973	9,079
(WY)	(1986)	(1986)	(1992)	(1973)	(1984)	(1973)	(1967)	(1960)	(1993)	(1978)	(1995)	(1980)
MIN	837	863	973	1,025	1,024	1,613	2,081	1,515	924	933	932	1,000
(WY)	(1949)	(1977)	(1977)	(1990)	(1977)	(1956)	(1990)	(1987)	(1988)	(1988)	(1988)	(1989)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1945 - 2003
ANNUAL TOTAL	1,751,610	1,416,600	
ANNUAL MEAN	4,799	3,881	3,562
HIGHEST ANNUAL MEAN			5,953
LOWEST ANNUAL MEAN			1,686
HIGHEST DAILY MEAN	34,400	Apr 13	44,500
LOWEST DAILY MEAN	1,760	Jul 21	575
ANNUAL SEVEN-DAY MINIMUM	(a)2,090	Feb 8	757
MAXIMUM PEAK FLOW			49,200
MAXIMUM PEAK STAGE		25.57	May 12
10 PERCENT EXCEEDS	10,200	7,410	(c)18.46
50 PERCENT EXCEEDS	3,300	2,480	2,600
90 PERCENT EXCEEDS	2,200	1,400	1,500

- (a) Ice affected
- (b) Also occurred Mar. 31, 1967
- (c) Datum then in use
- (e) Estimated due to ice effect or missing record

## WISCONSIN RIVER BASIN

05399500 BIG EAU PLEINE RIVER AT STRATFORD, WI  
(Previously published as Big Eau Pleine River near Stratford, WI)

LOCATION.--Lat 44°49'19", long 90°04'46", NE ¼ NE ¼ SE ¼ sec.13, T.27 N., R.3 E., Marathon County, Hydrologic Unit 07070002, on left bank 15 ft upstream from bridge on State Highway 97, 1.0 mi north of Stratford, and 1.4 mi downstream from small tributary.

DRAINAGE AREA.--224 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1914 to December 1925, April 1937 to current year. Monthly discharge for some periods published in WSP 1308. Published as "near Stratford, WI" prior to October 2002.

REVISED RECORDS.--WSP 1308: 1917, 1920-22, 1926, 1946, 1948, 1950. WSP 1508: 1915-25(M), 1937, 1946(M), 1948(M).

GAGE.--Water-stage recorder. Datum of gage is 1,154.24 ft above NGVD of 1929. July 24, 1914, to Dec. 31, 1925, nonrecording gage at site 0.5 mi upstream at different datum. Apr. 30, 1937, to Sept. 15, 1938, nonrecording gage at present site and datum.

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

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Flood of June 5, 1914, reached a stage of 20.7 ft, from floodmarks; discharge, 40,000 ft<sup>3</sup>/s, former site and datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	473	122	e26	e22	e3.2	e2.4	e260	84	36	24	8.0	1.7
2	245	105	e24	e21	e3.4	e2.6	e240	75	33	21	5.7	1.6
3	179	94	e22	e18	e3.5	e2.3	e190	67	31	21	7.1	1.6
4	1,800	89	e20	e16	e3.5	e2.1	e130	60	29	19	12	1.6
5	1,170	85	e21	e17	e3.0	e2.1	e100	174	27	17	10	1.5
6	808	88	e22	e17	e2.9	e2.1	e90	433	28	20	8.2	1.4
7	949	86	e22	e18	e2.8	e2.2	e86	264	33	18	6.4	1.3
8	694	82	e21	e20	e2.5	e2.5	e80	241	41	17	6.8	1.3
9	519	78	e19	e22	e2.3	e2.6	121	1,370	42	17	6.2	1.3
10	494	77	e20	e20	e2.0	e2.5	284	887	87	19	14	1.1
11	526	74	e23	e17	e1.9	e2.4	317	3,470	138	20	37	1.1
12	352	68	e24	e14	e1.9	e2.6	274	3,050	99	19	9.6	1.7
13	447	64	e24	e12	e1.9	e3.0	216	904	72	15	6.6	3.2
14	262	62	e24	e10	e2.0	e3.3	186	384	56	12	5.6	8.0
15	185	59	e23	e9.0	e2.1	e3.6	203	236	46	12	6.1	10
16	144	55	e22	e8.4	e2.1	e270	7,400	167	38	10	4.2	7.4
17	117	52	e19	e8.0	e2.1	e860	3,730	131	32	12	4.1	6.7
18	113	e48	e22	e7.4	e2.2	e660	1,980	110	29	12	4.2	5.6
19	123	e47	e27	e6.2	e2.6	e580	1,300	101	27	9.9	3.3	5.2
20	114	e45	e33	e5.6	e2.9	e360	2,490	152	24	8.4	4.1	4.6
21	111	e45	e28	e5.0	e3.2	e320	1,620	176	21	8.0	3.7	4.0
22	128	e43	e23	e4.5	e3.4	e370	738	110	19	7.5	3.1	4.8
23	231	e42	e21	e4.1	e2.9	e290	376	86	18	7.0	2.8	5.5
24	307	e43	e20	e3.8	e2.7	e240	250	74	20	6.4	2.6	5.8
25	419	e44	e20	e3.6	e2.3	e200	192	66	27	5.9	2.5	5.3
26	1,190	e37	e20	e3.4	e2.2	e150	156	57	26	6.0	2.4	5.3
27	614	e33	e20	e3.1	e2.1	e110	132	51	21	5.8	2.1	5.9
28	347	e30	e21	e2.9	e2.2	e1,400	116	46	25	5.6	2.0	6.6
29	247	e29	e22	e2.9	---	e1,100	102	42	27	5.7	2.1	6.5
30	187	e29	e23	e2.9	---	e470	91	41	27	3.6	1.9	7.3
31	149	---	e23	e3.0	---	e310	---	39	---	4.9	1.7	---
TOTAL	13,644	1,855	699	327.8	71.8	7,728.3	23,450	13,148	1,179	389.7	196.1	124.9
MEAN	440	61.8	22.5	10.6	2.56	249	782	424	39.3	12.6	6.33	4.16
MAX	1,800	122	33	22	3.5	1,400	7,400	3,470	138	24	37	10
MIN	111	29	19	2.9	1.9	2.1	80	39	18	3.6	1.7	1.1
CFSM	1.80	0.25	0.09	0.04	0.01	1.02	3.20	1.74	0.16	0.05	0.03	0.02
IN.	2.08	0.28	0.11	0.05	0.01	1.18	3.58	2.00	0.18	0.06	0.03	0.02

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

MEAN	110	128	48.1	19.7	34.6	406	600	234	215	76.2	80.6	162
MAX	728	695	446	138	372	1,202	1,551	1,016	1,203	642	691	1,572
(WY)	(1942)	(1992)	(1966)	(1973)	(1984)	(1976)	(1951)	(1973)	(1980)	(1978)	(2002)	(1938)
MIN	2.26	4.34	2.50	0.40	0.52	8.77	51.7	15.8	5.16	2.71	2.58	1.50
(WY)	(1954)	(1954)	(1990)	(1977)	(1977)	(1956)	(1946)	(1977)	(1988)	(1988)	(1937)	(1953)

## 05399500 BIG EAU PLEINE RIVER AT STRATFORD, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1914 - 2003	
ANNUAL TOTAL	114,600		62,813.6			
ANNUAL MEAN	314		172		177	
HIGHEST ANNUAL MEAN					355	1980
LOWEST ANNUAL MEAN					47.6	1977
HIGHEST DAILY MEAN	7,690	Jun 22	7,400	Apr 16	26,100	Sep 9, 1938
LOWEST DAILY MEAN	(a)14	Feb 5	1.1	Sep 10,11	(a)0.00	(b)Jan 22, 1961
ANNUAL SEVEN-DAY MINIMUM	(a)15	Jan 31	1.3	Sep 5	(a)0.00	Jan 22, 1961
MAXIMUM PEAK FLOW			10,500	Apr 16	(c)41,000	Sep 9, 1938
MAXIMUM PEAK STAGE			16.69	Apr 16	(d)24.50	Sep 9, 1938
INSTANTANEOUS LOW FLOW			0.97	Sep 10-12	0.00	(f)Aug 17, 1947
ANNUAL RUNOFF (CFSM)	1.29		0.71		0.72	
ANNUAL RUNOFF (INCHES)	17.47		9.58		9.84	
10 PERCENT EXCEEDS	717		355		374	
50 PERCENT EXCEEDS	90		22		25	
90 PERCENT EXCEEDS	18		2.4		4.9	

- (a) Ice affected  
(b) Also occurred Jan. 23 to Feb. 5, 1961  
(c) Based on rating curve extended above 24,000 ft<sup>3</sup>/s  
(d) From floodmarks  
(e) Estimated due to ice effect or missing record  
(f) Also occurred Jan. 22 to Feb. 5, 1961, ice-affected period

## 05400760 WISCONSIN RIVER AT WISCONSIN RAPIDS, WI

LOCATION.--Lat 44°23'41", long 89°49'31", in SW ¼ sec.8, T.22 N., R.6 E., Wood County, Hydrologic Unit 07070003, at Consolidated Water Power Company, 0.2 mi upstream from U.S. Highway 13 bridge in Wisconsin Rapids.

DRAINAGE AREA.--5,420 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1914 to March 1950 published as Wisconsin River near Nekoosa (05400980), October 1957 to current year. October 1957 to September 1981, published under station number 05400800 with same name.

REVISED RECORDS.--WSP 1308: 1915(M).

GAGE.--Water-stage recorders on headwater and tailwater. Elevation of powerplant pond is 1.010 ft and datum of powerplant gages is 0.00 ft above NGVD of 1929 (levels by Wisconsin Valley Improvement Co.). May 1914 to March 1950, at site 9.6 mi downstream at different datum. March 1950 to Sept. 30, 1981, at Centralia Powerplant at Nekoosa Papers, Inc., 2.6 mi downstream. March 1950 to Dec. 31, 1973, datum was 887.83 ft above NGVD of 1929. Jan. 1, 1974, changed to present datum.

REMARKS.--Discharge computed from powerplant records on basis of load-discharge rating of hydroelectric units as developed by manufacturer and tainter-gate ratings based on theoretical formulas. Flow regulated by 22 reservoirs and many powerplants upstream from station. Water diverted periodically from pond on Wisconsin Rapids powerplant into Cranberry Creek, a tributary of Yellow River, for cranberry culture. Mean monthly diversions, in cubic feet per second, for water year October 2002 to September 2003 were as follows: January, 81.7; February, 20.0; August, 22.3; and September, 96.7.

COOPERATION.--Figures of daily discharges were provided by Consolidated Water Power Company and Wisconsin Valley Improvement Company. Records were reviewed by the Geological Survey.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7,560	6,080	3,310	3,120	2,620	2,300	5,750	6,060	3,820	2,690	3,230	1,470
2	7,010	5,580	3,020	2,880	2,620	2,100	5,650	5,280	4,590	2,960	2,660	1,430
3	7,550	5,280	3,090	2,900	2,970	2,020	4,230	3,510	3,980	2,380	2,170	1,400
4	13,800	5,250	3,030	2,890	2,760	2,420	5,100	3,950	3,130	3,020	2,770	1,440
5	19,400	4,900	2,760	2,920	2,800	2,400	3,740	5,300	3,330	2,390	3,560	1,440
6	18,000	5,250	2,960	3,190	2,490	2,020	2,790	8,340	3,340	2,500	3,530	1,480
7	17,900	4,760	3,170	2,640	2,330	2,040	2,920	11,000	3,500	2,340	2,730	1,470
8	17,600	5,180	3,480	3,090	2,490	2,390	3,780	9,770	4,660	2,710	2,090	1,370
9	16,700	5,160	3,050	2,540	2,740	2,060	2,880	11,200	4,930	2,810	2,330	1,340
10	13,700	4,750	2,810	3,010	2,730	1,900	2,900	16,800	8,010	2,200	2,390	1,330
11	11,400	4,860	2,770	3,260	2,300	1,980	4,800	21,400	10,200	2,890	2,260	1,340
12	10,700	4,720	2,850	3,260	2,440	2,120	5,210	35,600	11,100	2,160	2,080	2,070
13	8,730	4,810	3,370	3,040	2,910	2,400	3,850	41,100	9,010	2,610	2,030	2,270
14	8,010	5,150	3,480	2,420	2,830	2,300	3,860	28,400	5,230	2,280	2,120	2,490
15	8,950	4,800	3,460	2,470	2,380	2,260	5,100	17,300	4,430	3,020	2,380	2,400
16	8,440	4,360	3,200	2,630	2,270	3,310	16,400	11,500	4,170	2,420	2,350	1,950
17	6,160	4,350	2,560	2,420	2,380	6,600	33,900	10,500	3,690	2,210	2,300	2,000
18	6,560	3,820	3,630	2,360	2,380	7,620	35,000	7,690	3,630	2,210	2,050	1,690
19	6,070	4,100	3,680	2,430	2,530	9,400	28,400	8,550	3,250	2,260	1,910	1,780
20	5,260	3,580	3,490	2,520	2,410	9,000	25,400	8,660	2,760	2,360	1,930	2,050
21	5,640	4,280	3,520	2,640	2,440	7,400	28,100	8,390	2,970	2,370	1,880	1,410
22	5,800	4,330	3,530	2,630	2,440	7,020	26,000	8,610	2,930	2,340	1,840	1,280
23	5,460	4,270	3,530	2,240	2,380	6,510	18,100	6,160	2,800	2,300	1,800	1,520
24	6,650	4,440	3,310	2,520	2,300	6,010	13,600	5,430	2,950	2,570	1,480	1,700
25	6,740	3,690	3,240	2,790	2,270	5,230	10,600	5,620	2,740	2,360	1,550	2,250
26	8,500	4,040	2,990	2,630	1,860	4,980	9,470	4,310	3,790	2,190	1,920	1,790
27	9,690	3,610	2,870	2,260	2,550	4,820	8,180	4,330	2,680	2,230	2,350	1,610
28	9,040	3,650	3,110	2,200	2,560	5,540	7,790	4,460	3,080	2,230	1,990	2,060
29	7,440	3,460	3,470	2,340	---	7,280	7,450	4,230	3,110	2,400	1,840	2,020
30	6,910	3,460	3,300	2,440	---	7,660	7,100	3,800	2,680	2,840	1,500	2,150
31	6,360	---	3,090	3,200	---	5,760	---	3,740	---	2,430	1,470	---
TOTAL	297,730	135,970	99,130	83,880	70,180	136,850	338,050	330,990	130,490	76,680	68,490	52,000
MEAN	9,604	4,532	3,198	2,706	2,506	4,415	11,270	10,680	4,350	2,474	2,209	1,733
MAX	19,400	6,080	3,680	3,260	2,970	9,400	35,000	41,100	11,100	3,020	3,560	2,490
MIN	5,260	3,460	2,560	2,200	1,860	1,900	2,790	3,510	2,680	2,160	1,470	1,280

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

MEAN	4,139	4,344	3,302	3,030	3,148	6,295	11,070	6,951	6,078	3,538	3,147	4,284
MAX	13,070	10,270	7,928	5,589	6,368	19,180	25,940	19,730	19,560	10,820	9,199	17,670
(WY)	(1987)	(1920)	(1966)	(1973)	(1984)	(1973)	(1922)	(1960)	(1943)	(1978)	(1926)	(1938)
MIN	1,075	1,072	1,141	1,272	1,333	1,547	2,579	1,669	1,308	1,123	1,173	1,227
(WY)	(1977)	(1977)	(1990)	(1990)	(1977)	(1924)	(1990)	(1987)	(1988)	(1988)	(1934)	(1976)

## 05400760 WISCONSIN RIVER AT WISCONSIN RAPIDS, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1914 - 2003	
ANNUAL TOTAL	2,362,930		1,820,440			
ANNUAL MEAN	6,474		4,988		4,936	
HIGHEST ANNUAL MEAN					8,499	
LOWEST ANNUAL MEAN					2,107	
HIGHEST DAILY MEAN	40,400	Apr 13	41,100	May 13	63,600	Jun 21, 1993
LOWEST DAILY MEAN	1,990	Jan 19	1,280	Sep 22	165	Aug 12, 1934
ANNUAL SEVEN-DAY MINIMUM	2,730	Jan 16	1,400	Sep 5	790	Jun 18, 1988
MAXIMUM PEAK FLOW			43,800	May 13	(a)70,400	Sep 12, 1938
10 PERCENT EXCEEDS	14,000		9,020		9,570	
50 PERCENT EXCEEDS	4,200		3,090		3,350	
90 PERCENT EXCEEDS	2,820		2,010		1,790	

(a) From rating curve extended above 58,000 ft<sup>3</sup>/s





## 05402000 YELLOW RIVER AT BABCOCK, WI

LOCATION.--Lat 44°18'08", long 90°07'19" in SE ¼ NE ¼ sec.15, T.21 N., R.3 E., Wood County, Hydrologic Unit 07070003, on right bank, 600 ft upstream of bridge on State Highway 80 at Babcock, 2.0 mi upstream from Hemlock Creek.

DRAINAGE AREA.--215 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1944 to September 1996, September 1997 to current year.

REVISED RECORDS.--WSP 1308: 1944(M), 1946-47(M), 1949(M). WDR WI-77-1: Drainage area. WDR WI-82-1: 1981 (P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 954.75 ft above NGVD of 1929. Prior to Oct. 28, 1948, nonrecording gage at site 600 ft downstream at same datum. Oct. 28, 1948 to Apr. 9, 1996, water-stage recorder at site 600 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). There is a large recreation dam about 5.0 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164	146	e32	e14	e4.9	e5.0	320	97	43	19	8.3	3.8
2	303	106	30	e14	e4.6	e5.0	209	85	43	18	8.0	3.7
3	395	101	26	e12	e4.1	e5.2	178	77	38	19	7.7	3.7
4	477	93	20	e12	e4.0	e5.2	157	69	35	19	7.9	3.7
5	1,760	84	15	e12	e4.0	e5.2	134	75	31	18	7.4	3.7
6	1,020	79	14	e13	e4.0	e5.3	102	243	29	18	8.5	3.4
7	750	76	e15	e14	e4.0	e5.2	90	379	31	18	12	3.2
8	451	78	e18	e14	e4.0	e5.2	86	303	43	25	12	3.2
9	346	77	e20	e13	e4.0	e5.2	81	295	71	23	13	3.2
10	297	77	e24	e11	e4.3	e5.5	76	679	118	19	12	3.2
11	275	73	e26	e10	e4.3	e5.5	73	664	235	19	13	3.2
12	276	67	e24	e9.4	e4.3	e6.0	77	1,220	222	19	14	5.0
13	223	64	e22	e8.8	e4.2	e10	81	1,010	162	16	11	5.4
14	240	60	e20	e8.0	e4.3	e15	85	661	110	15	9.2	5.8
15	217	56	e20	e7.0	e4.5	e26	89	345	90	19	8.1	5.2
16	163	54	e19	e6.2	e4.6	e200	164	197	70	22	8.0	4.3
17	112	51	e18	e5.3	e4.6	e700	1,980	147	55	19	7.7	4.1
18	106	49	e19	e5.0	e4.6	802	2,040	124	46	19	7.3	3.8
19	104	49	e21	e5.0	e5.0	607	1,210	104	39	16	6.7	3.8
20	102	46	e22	e5.0	e5.8	369	1,250	98	31	14	6.2	3.6
21	111	45	e23	e5.0	e5.8	323	1,990	100	26	14	5.8	3.8
22	119	44	e23	e5.0	e5.6	371	1,490	113	23	14	5.5	5.2
23	138	42	e22	e4.7	e5.0	289	829	107	21	12	5.4	4.7
24	210	42	e20	e4.6	e4.6	243	473	92	21	10	5.2	4.3
25	257	40	e18	e4.6	e4.6	203	294	80	23	9.1	4.7	3.9
26	374	e40	e16	e4.5	e4.6	152	217	67	22	8.4	4.5	4.0
27	613	38	e15	e4.6	e4.6	158	161	58	20	8.1	4.2	4.4
28	431	36	e15	e4.8	e4.9	348	142	53	19	8.2	4.1	4.5
29	315	33	e15	e4.9	---	1,480	125	48	22	8.2	4.0	4.5
30	237	e33	e15	e4.9	---	1,110	110	42	22	7.5	4.1	4.3
31	178	---	e15	e4.9	---	646	---	51	---	7.8	3.9	---
TOTAL	10,764	1,879	622	251.2	127.8	8,115.5	14,313	7,683	1,761	481.3	239.4	122.6
MEAN	347	62.6	20.1	8.10	4.56	262	477	248	58.7	15.5	7.72	4.09
MAX	1,760	146	32	14	5.8	1,480	2,040	1,220	235	25	14	5.8
MIN	102	33	14	4.5	4.0	5.0	73	42	19	7.5	3.9	3.2
CFSM	1.62	0.29	0.09	0.04	0.02	1.22	2.22	1.15	0.27	0.07	0.04	0.02
IN.	1.86	0.33	0.11	0.04	0.02	1.40	2.48	1.33	0.30	0.08	0.04	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2003, BY WATER YEAR (WY)

MEAN	108	112	62.4	26.0	46.1	377	551	235	193	67.0	51.9	123
MAX	561	508	374	132	373	1,353	1,319	1,183	1,516	453	371	1,169
(WY)	(1987)	(1983)	(1966)	(1973)	(1966)	(1973)	(1952)	(1973)	(1993)	(1978)	(1980)	(1986)
MIN	3.68	4.62	7.35	5.03	4.56	8.13	85.9	28.0	8.56	4.68	4.01	2.23
(WY)	(1949)	(1977)	(1951)	(1945)	(2003)	(1956)	(1946)	(1977)	(1988)	(1988)	(1988)	(1948)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1944 - 2003	
ANNUAL TOTAL	79,146		46,359.8			
ANNUAL MEAN	217		127		162	
HIGHEST ANNUAL MEAN					376	
LOWEST ANNUAL MEAN					37.4	
HIGHEST DAILY MEAN	4,040	Jun 23	2,040	Apr 18	10,300	Apr 2, 1952
LOWEST DAILY MEAN	(a)12	Jan 19	3.2	Sep 7	1.4	(b)Sep 14, 1948
ANNUAL SEVEN-DAY MINIMUM	(a)13	Jan 14	3.3	Sep 5	1.4	Sep 13, 1948
MAXIMUM PEAK FLOW			2,540	Apr 17	11,600	Apr 2, 1952
MAXIMUM PEAK STAGE			10.98	Apr 17	17.38	Apr 2, 1952
INSTANTANEOUS LOW FLOW			3.2	(c)Sep 6	0.94	Aug 11, 1985
ANNUAL RUNOFF (CFSM)	1.01		0.59		0.76	
ANNUAL RUNOFF (INCHES)	13.69		8.02		10.27	
10 PERCENT EXCEEDS	505		317		364	
50 PERCENT EXCEEDS	72		20		31	
90 PERCENT EXCEEDS	17		4.3		8.0	

(a) Result of freezeup

(b) Also occurred Sept. 15-19, 25, 26, 1948

(c) Also occurred Sept. 7-12, 18, 20, 21

(e) Estimated due to ice effect or missing record

## 05404000 WISCONSIN RIVER NEAR WISCONSIN DELLS, WI

LOCATION.--Lat 43°36'22", long 89°45'25" in NW ¼ sec.14, T.13 N., R.6 E., Sauk County, Hydrologic Unit 07070003, on right bank 0.5 mi downstream from Dell Creek and 1.8 mi southeast of Wisconsin Dells.

DRAINAGE AREA.--8,090 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1934 to current year.

REVISED RECORDS.--WSP 1728: 1936(M). WSP 1914: 1951, 1953-55. WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 801.48 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1963, water-stage recorder at same site at datum 5.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Flow regulated by 24 reservoirs above station. In 1938, when the maximum of record occurred, there were 21 reservoirs above station, the two large reservoirs, Petenwell and Castle Rock, were not in existence. Diurnal fluctuation is caused by powerplant of Alliant Energy Company at Wisconsin Dells. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,620	9,290	4,390	4,870	e5,700	e3,500	7,900	10,500	6,550	3,940	3,500	2,650
2	8,030	8,330	5,530	5,000	e5,000	3,460	6,190	9,550	5,050	3,470	3,900	2,840
3	8,290	6,840	4,930	4,420	e4,300	3,320	7,020	8,060	6,220	3,350	3,900	2,690
4	9,810	7,050	4,590	4,080	e5,000	2,820	5,800	4,370	7,060	3,660	3,180	2,760
5	17,100	7,400	4,140	4,240	e5,300	3,190	4,830	5,380	5,340	3,720	3,280	2,540
6	20,300	6,870	3,940	4,180	e4,400	3,150	5,600	7,540	6,610	4,430	4,950	e1,500
7	21,100	6,750	4,950	5,290	e4,000	2,840	3,460	9,190	6,310	3,770	5,390	e1,400
8	18,100	6,310	5,490	5,500	e3,100	3,110	3,140	15,400	5,830	3,970	3,520	e1,400
9	20,700	6,500	4,660	5,590	e4,000	3,510	3,380	16,200	6,430	4,050	2,530	e1,800
10	21,400	6,650	5,100	5,750	e5,200	3,350	3,270	14,200	7,300	4,060	2,500	2,350
11	16,500	7,030	4,360	5,590	e4,700	e2,700	3,330	19,300	12,300	4,070	3,150	2,650
12	14,700	6,880	4,290	6,720	e3,000	e2,400	3,690	26,500	19,100	3,500	3,570	2,600
13	12,100	5,990	4,600	5,960	e4,500	e2,500	4,340	31,800	13,600	3,240	3,040	2,970
14	9,800	6,410	4,620	5,190	e4,700	e2,700	4,190	39,800	12,800	3,220	2,640	2,840
15	10,000	6,530	5,190	5,130	e5,300	e3,200	4,570	40,300	7,960	4,150	2,890	2,730
16	10,800	6,460	5,610	4,230	e3,500	3,750	7,350	27,100	6,440	4,950	2,810	2,830
17	11,300	6,110	5,170	5,710	e4,000	4,490	15,900	12,500	5,740	3,800	2,740	2,760
18	9,690	4,770	3,970	5,310	e4,100	5,680	25,700	11,500	5,450	3,160	2,750	2,660
19	7,780	5,010	4,860	e4,300	e3,500	6,270	30,600	11,900	5,070	3,290	2,700	2,760
20	8,240	5,290	5,570	e4,600	e4,500	6,920	32,400	13,600	4,920	3,260	2,720	2,710
21	6,800	6,020	5,110	e5,200	3,920	8,960	31,200	12,400	3,760	2,880	2,710	2,730
22	7,240	4,920	5,060	e5,700	3,210	9,790	29,800	12,100	3,460	2,980	2,740	2,750
23	8,840	6,170	5,250	e4,400	3,770	9,260	30,200	11,600	3,670	3,300	2,670	2,730
24	7,650	4,630	5,360	e5,800	3,930	8,040	27,600	10,100	3,890	3,030	2,690	2,750
25	8,190	5,640	4,880	e5,000	3,030	7,860	17,400	8,770	3,600	3,110	2,700	2,660
26	8,880	5,910	4,950	e4,600	3,220	7,770	16,000	7,870	3,800	3,060	2,740	2,530
27	9,760	4,410	4,190	e5,300	3,250	8,100	12,500	5,310	4,470	2,820	2,740	2,650
28	11,200	4,760	4,430	e5,000	3,440	4,980	9,620	5,490	4,390	2,830	2,670	2,760
29	12,000	4,960	4,290	e3,200	---	5,860	10,600	5,750	4,490	2,870	2,990	2,810
30	12,100	4,230	4,560	e3,100	---	7,040	10,500	6,100	4,660	2,970	2,780	2,380
31	10,900	---	4,750	e3,800	---	7,940	---	5,890	---	2,920	2,980	---
TOTAL	365,920	184,120	148,790	152,760	115,570	158,460	378,080	426,070	196,270	107,830	96,070	76,190
MEAN	11,800	6,137	4,800	4,928	4,128	5,112	12,600	13,740	6,542	3,478	3,099	2,540
MAX	21,400	9,290	5,610	6,720	5,700	9,790	32,400	40,300	19,100	4,950	5,390	2,970
MIN	6,620	4,230	3,940	3,100	3,000	2,400	3,140	4,370	3,460	2,820	2,500	1,400

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2003, BY WATER YEAR (WY)

MEAN	5,909	6,205	5,083	4,782	5,040	8,052	13,030	9,561	8,691	5,376	4,375	5,850
MAX	19,120	13,900	10,740	7,831	9,614	25,620	25,050	26,990	27,090	13,350	10,700	25,900
(WY)	(1987)	(1983)	(1966)	(1992)	(1984)	(1973)	(1951)	(1960)	(1993)	(1978)	(1995)	(1938)
MIN	1,683	1,688	1,746	2,434	2,432	2,945	2,939	3,361	1,826	1,713	1,634	1,754
(WY)	(1977)	(1977)	(1990)	(1945)	(1945)	(1940)	(1964)	(1977)	(1988)	(1988)	(1988)	(1976)

## SUMMARY STATISTICS

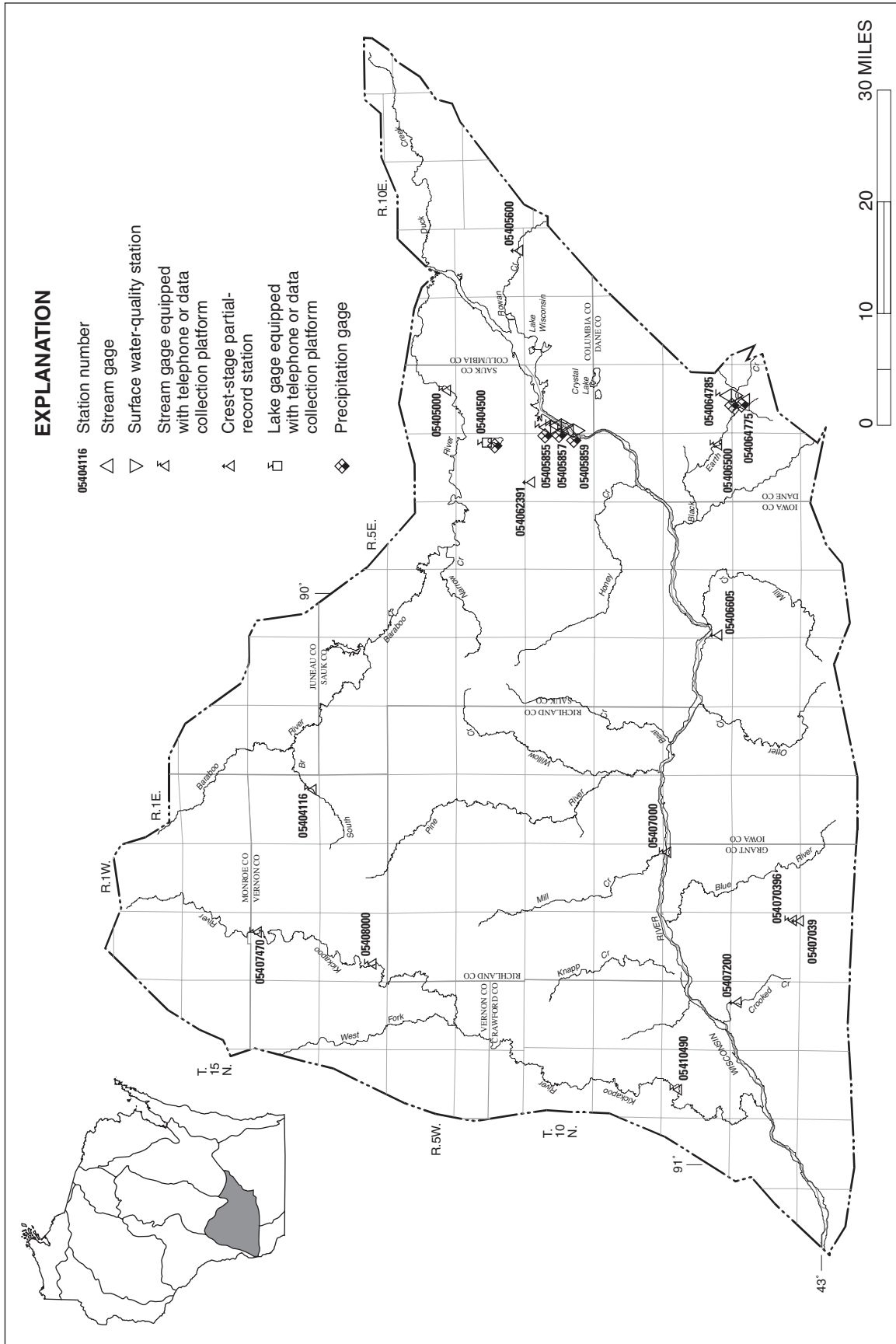
	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1935 - 2003	
ANNUAL TOTAL	3,221,470		2,406,130			
ANNUAL MEAN	8,826		6,592		6,826	
HIGHEST ANNUAL MEAN					12,420	1973
LOWEST ANNUAL MEAN					2,993	1977
HIGHEST DAILY MEAN	38,300	Apr 15,16	40,300	May 15	71,200	Sep 14, 1938
LOWEST DAILY MEAN	(a)3,500	Feb 14	(b)1,400	Sep 7,8	1,060	Aug 19, 1936
ANNUAL SEVEN-DAY MINIMUM	(a)4,080	Feb 13	(b)1,950	Sep 5	1,210	Aug 10, 1988
MAXIMUM PEAK FLOW			42,500	May 15	72,200	Sep 14, 1938
MAXIMUM PEAK STAGE			15.11	May 15	(c)23.83	Sep 14, 1938
10 PERCENT EXCEEDS	18,900		12,100		12,200	
50 PERCENT EXCEEDS	6,460		4,870		5,190	
90 PERCENT EXCEEDS	4,360		2,740		2,900	

(a) Ice affected

(b) Regulation at dam upstream

(c) Present datum

(e) Estimated due to ice effect or missing record



**LOWER WISCONSIN RIVER BASIN**

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

## 05404116 SOUTH BRANCH BARABOO RIVER AT HILLSBORO, WI

LOCATION.--Lat 43°39'10", long 90°20'09", in NE ¼ NE ¼ sec.35, T.14 N., R.1 E., Vernon County, Hydrologic Unit 07070004, on left bank 220 ft upstream from County Highway FF at Hillsboro, and 6.3 mi upstream from mouth.

DRAINAGE AREA.--39.1 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 927.28 ft above NGVD of 1929 (levels by Mid-State Associates, Baraboo, WI).

REMARKS.--Records (see page 11). Flows are occasionally regulated by dam 0.35 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	17	15	13	12	11	20	28	13	11	9.1	1.0
2	20	17	15	13	13	11	20	20	13	11	8.5	4.6
3	27	17	14	12	14	11	20	18	13	13	9.6	9.4
4	81	16	14	13	13	11	19	17	12	15	10	9.1
5	26	18	14	14	12	10	18	24	12	18	9.1	9.1
6	22	19	13	13	12	11	18	23	12	24	8.9	8.9
7	20	18	15	13	12	11	19	33	14	19	9.2	8.9
8	19	18	14	14	12	11	19	27	18	15	8.5	9.0
9	19	18	12	14	12	10	22	59	14	16	8.2	8.9
10	19	18	14	12	12	10	21	31	17	39	7.7	8.9
11	19	21	14	11	12	11	21	154	14	19	7.4	8.8
12	18	18	15	11	11	13	20	72	13	15	7.4	14
13	18	17	15	11	11	14	20	30	12	13	7.4	17
14	17	17	15	11	11	40	20	41	12	12	7.1	26
15	17	17	15	9.6	11	97	20	30	11	15	7.2	14
16	16	17	15	10	11	82	22	23	9.9	12	7.1	11
17	17	17	14	10	11	50	22	21	9.7	12	6.8	10
18	18	17	18	10	11	30	20	19	9.7	10	6.7	9.6
19	17	18	18	10	12	23	25	19	9.9	9.8	6.7	11
20	17	17	16	10	20	31	33	23	9.1	10	6.8	10
21	18	17	15	9.9	59	37	26	18	8.9	12	7.1	11
22	18	17	15	8.9	43	27	22	17	8.9	10	6.1	14
23	17	17	13	7.8	14	23	20	16	9.2	10	6.0	12
24	17	16	14	7.0	12	23	19	15	12	9.9	6.3	11
25	21	16	14	7.1	11	21	18	15	12	9.8	7.3	10
26	22	15	13	8.8	11	20	18	14	12	9.7	7.6	11
27	19	14	13	9.6	11	32	17	14	12	9.8	6.6	11
28	18	15	14	10	11	32	17	14	21	9.4	32	11
29	18	16	14	10	---	25	17	13	14	9.0	70	10
30	17	15	15	11	---	20	22	14	12	9.6	21	9.8
31	17	---	14	12	---	19	---	14	---	9.0	8.0	---
TOTAL	647	510	449	336.7	417	777	615	876	370.3	417.0	337.4	320.0
MEAN	20.9	17.0	14.5	10.9	14.9	25.1	20.5	28.3	12.3	13.5	10.9	10.7
MAX	81	21	18	14	59	97	33	154	21	39	70	26
MIN	16	14	12	7.0	11	10	17	13	8.9	9.0	6.0	1.0
CFSM	0.53	0.43	0.37	0.28	0.38	0.64	0.52	0.72	0.32	0.34	0.28	0.27
IN.	0.62	0.49	0.43	0.32	0.40	0.74	0.59	0.83	0.35	0.40	0.32	0.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2003, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	15.5	17.4	14.1	13.6	18.7	33.3	35.0	25.8	32.2	18.5	16.1	21.3				
MAX	26.1	28.6	22.9	26.8	31.5	50.8	70.9	52.5	75.3	52.3	28.2	95.3				
(WY)	(1994)	(1993)	(1993)	(1996)	(1999)	(1989)	(1993)	(1993)	(1990)	(1993)	(1993)	(1992)				
MIN	6.79	8.14	4.42	8.95	6.91	14.5	8.47	13.2	8.38	5.83	6.69	6.12				
(WY)	(1990)	(1991)	(1990)	(1991)	(1989)	(2000)	(1990)	(1989)	(1989)	(1989)	(1988)	(1990)				

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1988 - 2003
ANNUAL TOTAL	7,943	6,072.4	
ANNUAL MEAN	21.8	16.6	21.9
HIGHEST ANNUAL MEAN			35.1
LOWEST ANNUAL MEAN			13.0
HIGHEST DAILY MEAN	146	154	1,190
LOWEST DAILY MEAN	12	(a)1.0	(a)1.0
ANNUAL SEVEN-DAY MINIMUM	14	6.5	(b)1.4
MAXIMUM PEAK FLOW		223	(c)4,010
MAXIMUM PEAK STAGE		8.88	(d)15.60
ANNUAL RUNOFF (CFSM)	0.56	0.43	0.56
ANNUAL RUNOFF (INCHES)	7.56	5.78	7.62
10 PERCENT EXCEEDS	30	23	33
50 PERCENT EXCEEDS	17	14	15
90 PERCENT EXCEEDS	15	8.9	8.1

(a) Result of gate regulation at dam 0.35 mi upstream

(b) Result of closing dam gates to fill lake 0.35 mi upstream

(c) From rating curve extended above 1,100 ft<sup>3</sup>/s, on basis of contracted-area measurement

(d) From floodmark on gage house

## 05404500 DEVILS LAKE NEAR BARABOO, WI

LOCATION.--Lat 43°25'35", long 89°43'40", in SW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> sec.13, T.11 N., R.6 E., Sauk County, Hydrologic Unit 07070004, in Devils Lake State Park, 3.5 mi south of Baraboo.

DRAINAGE AREA.--4.79 mi<sup>2</sup>. Area of Devils Lake, 361 acres.

## GAGE-HEIGHT RECORD

PERIOD OF RECORD.--June 1922 to August 1930, June to August 1932, June 1934 to September 1981 (fragmentary). October 1981 to September 1984, data unpublished in district files. October 1984 to current year.

REVISED RECORDS.--WDR WI-78-1: Drainage area.

GAGE.--Water-stage recorder installed July 17, 1991. Datum of gage is 955.00 ft, above NGVD of 1929.

REMARKS.--Lake has no surface outlet. Water removed from lake by pumping or siphon Oct. 1-15 and Sept. 8-30.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 14.13 ft, July 18, 1993; minimum observed, 1.49 ft Feb. 8, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 9.50 ft, Oct. 4; minimum recorded, 7.08 ft, Sept. 30.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.42	8.78	8.50	8.34	8.21	8.13	8.26	8.19	8.54	8.39	8.10	7.72
2	9.41	8.77	8.49	8.33	8.21	8.13	8.25	8.18	8.52	8.37	8.09	7.70
3	9.39	8.76	8.48	8.32	8.22	8.12	8.24	8.17	8.50	8.36	8.07	7.67
4	9.43	8.74	8.47	8.32	8.22	8.13	8.25	8.16	8.48	8.36	8.06	7.64
5	9.43	8.74	8.46	8.32	8.22	8.14	8.26	8.19	8.47	8.38	8.04	7.62
6	9.38	8.73	8.46	8.32	8.22	8.14	8.25	8.21	8.46	8.38	8.03	7.60
7	9.33	8.73	8.45	8.32	8.22	8.13	8.26	8.22	8.47	8.37	8.01	7.58
8	9.29	8.71	8.44	8.31	8.21	8.14	8.27	8.22	8.48	8.35	7.99	7.57
9	9.24	8.71	8.43	8.31	8.21	8.14	8.26	8.32	8.47	8.33	7.97	7.53
10	9.20	8.70	8.43	8.30	8.21	8.14	8.25	8.36	8.48	8.39	7.95	7.49
11	9.16	8.71	8.42	8.29	8.20	8.13	8.25	8.46	8.47	8.39	7.93	7.45
12	9.12	8.70	8.41	8.28	8.20	8.13	8.25	8.55	8.45	8.37	7.91	7.42
13	9.07	8.69	8.41	8.27	8.19	8.13	8.24	8.56	8.44	8.35	7.89	7.50
14	9.02	8.68	8.41	8.27	8.19	8.13	8.23	8.61	8.43	8.33	7.88	7.64
15	8.96	8.66	8.40	8.26	8.19	8.14	8.22	8.65	8.41	8.41	7.86	7.63
16	8.94	8.65	8.39	8.26	8.18	8.17	8.22	8.66	8.40	8.40	7.85	7.60
17	8.93	8.64	8.39	8.25	8.18	8.20	8.21	8.66	8.38	8.38	7.83	7.57
18	8.93	8.63	8.42	8.24	8.17	8.20	8.20	8.67	8.37	8.36	7.80	7.52
19	8.91	8.63	8.42	8.24	8.17	8.21	8.20	8.67	8.48	8.33	7.78	7.47
20	8.90	8.62	8.42	8.23	8.17	8.23	8.23	8.68	8.45	8.31	7.75	7.44
21	8.89	8.61	8.41	8.23	8.16	8.24	8.22	8.68	8.43	8.31	7.73	7.40
22	8.87	8.60	8.40	8.22	8.16	8.24	8.21	8.66	8.40	8.28	7.71	7.39
23	8.86	8.59	8.39	8.21	8.15	8.24	8.20	8.65	8.38	8.26	7.69	7.37
24	8.85	8.57	8.38	8.21	8.15	8.24	8.19	8.64	8.37	8.24	7.66	7.33
25	8.87	8.56	8.37	8.20	8.15	8.24	8.17	8.62	8.39	8.22	7.64	7.28
26	8.86	8.55	8.37	8.20	8.14	8.24	8.16	8.60	8.43	8.19	7.62	7.24
27	8.85	8.54	8.36	8.19	8.14	8.25	8.15	8.59	8.40	8.17	7.60	7.20
28	8.85	8.53	8.36	8.19	8.14	8.27	8.13	8.57	8.43	8.15	7.60	7.17
29	8.83	8.52	8.35	8.19	---	8.27	8.12	8.55	8.42	8.13	7.79	7.14
30	8.82	8.50	8.35	8.19	---	8.27	8.14	8.54	8.41	8.11	7.77	7.12
31	8.80	---	8.34	8.21	---	8.26	---	8.55	---	8.11	7.74	---
MEAN	9.06	8.65	8.41	8.26	8.18	8.19	8.22	8.49	8.44	8.31	7.85	7.47
MAX	9.43	8.78	8.50	8.34	8.22	8.27	8.27	8.68	8.54	8.41	8.10	7.72
MIN	8.80	8.50	8.34	8.19	8.14	8.12	8.12	8.16	8.37	8.11	7.60	7.12

05404500 DEVILS LAKE NEAR BARABOO, WI--Continued

## PRECIPITATION QUANTITY

PERIOD OF RECORD.--October 1996 to current year (non-frozen precipitation).

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

REMARKS.--Gage established on July 17, 1991. Prior to Oct. 1, 1996, record was not published. Rainfall estimated to be 0.00 for Jan. 7, 29, 31, Feb. 2, 3, and Mar. 5 because recorded precipitation interpreted as snowmelt.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 5.01 in., June 1, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.75 in., Aug. 28.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.07	0.00	---	0.00	0.00
2	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
3	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	---	0.10	0.00
4	1.37	0.00	0.00	0.00	0.00	0.00	0.04	0.11	0.00	---	0.00	0.00
5	0.00	0.09	0.00	0.00	0.00	0.00	0.07	0.47	0.00	---	0.00	0.00
6	0.05	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.36	---	0.00	0.00
7	0.01	0.00	0.00	0.00	0.00	0.08	0.00	0.22	0.00	---	0.00	0.00
8	0.03	0.00	0.00	0.00	0.00	0.00	0.28	0.08	0.36	---	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.00	---	0.00	0.00
10	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.61	0.39	---	0.00	0.00
11	0.00	0.19	0.00	0.00	0.00	0.01	0.00	0.69	0.01	---	0.00	0.00
12	0.03	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	---	0.00	0.41
13	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	---	0.00	2.40
14	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.56	0.00	---	0.00	0.67
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	---	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	---	0.00	0.00
17	0.04	0.00	0.09	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
18	0.23	0.08	0.34	0.00	0.00	0.00	0.00	0.00	2.03	0.00	0.00	0.00
19	0.00	0.01	0.00	0.00	0.00	0.24	0.17	0.27	0.01	0.00	0.00	0.05
20	0.03	0.00	0.00	0.00	0.00	0.06	0.13	0.01	0.00	0.01	0.07	0.00
21	0.06	0.00	0.00	0.00	0.00	0.10	0.07	0.00	0.00	0.30	0.00	0.27
22	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03
23	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
25	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.13	0.00
26	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	---	0.00	0.00	0.03
27	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	---	0.00	0.00	0.01
28	0.05	0.00	0.00	0.00	0.00	0.29	0.00	0.05	---	0.00	2.75	0.01
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	---	0.00	0.00	0.09
30	0.00	0.00	0.00	0.00	---	0.00	0.93	0.36	---	0.03	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.21	---	0.51	0.00	---
TOTAL	2.96	0.43	0.43	0.00	0.00	1.17	2.05	4.50	---	---	3.05	3.97

## 05405000 BARABOO RIVER NEAR BARABOO, WI

LOCATION.--Lat 43°28'51", long 89°38'09", in NW ¼ NW ¼ sec.35, T.12 N., R.7 E., Sauk County, Hydrologic Unit 07070004, on left bank 50 ft downstream from highway bridge, 0.3 mi downstream from Rowley Creek and 5.3 mi east of Baraboo.

DRAINAGE AREA.--609 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1913 to March 1922. September 1942 to current year.

REVISED RECORDS.--WSP 455: 1915. WSP 505: 1917(M). WSP 1438: 1914, 1915(M), 1916-17, 1918-20(M), 1944(M), 1949(M). WSP 1914: 1948, 1950, 1956. WDR WI-75-1: 1968. WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 788.21 ft above NGVD of 1929. Dec. 18, 1913, to Mar. 31, 1922, nonrecording gage at bridge 2.3 mi upstream at datum 7.6 ft higher. Sept. 24, 1942, to June 10, 1963, nonrecording gage at present site and datum.

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

EXTREMES OUTSIDE THE PERIOD OF RECORD.--Flood of Aug. 6, 1935, reached a stage of 15.8 ft from floodmarks, site and datum in use in 1922, discharge, 5,100 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	368	321	230	259	230	e230	453	417	288	275	196	476
2	421	310	263	231	230	e220	387	517	293	237	195	312
3	359	301	204	e220	e230	e220	375	515	280	217	192	230
4	429	297	e230	e230	e230	e210	383	444	266	214	201	196
5	470	298	e230	272	e220	e220	385	399	259	236	206	188
6	536	303	e230	277	e220	e200	361	420	256	249	206	190
7	568	313	e220	272	e220	e210	351	461	261	269	203	186
8	528	326	e220	266	e220	e210	358	505	290	276	190	190
9	408	332	e220	269	e220	e220	364	622	311	276	183	182
10	348	330	e220	233	e220	e220	397	723	352	375	179	179
11	326	347	227	e220	e220	e220	449	930	354	389	176	177
12	330	346	232	e220	e220	221	459	1,330	346	396	175	184
13	322	393	245	e210	e220	228	431	1,340	339	350	173	258
14	310	407	258	e210	e220	276	408	1,290	311	275	171	365
15	300	355	267	e210	e220	435	394	1,310	279	341	170	406
16	286	322	271	e200	e220	e680	395	1,190	260	339	169	402
17	281	305	271	e190	e220	e800	412	928	244	326	165	347
18	294	293	297	e190	e220	955	421	692	233	285	166	269
19	295	288	319	e190	e220	1,140	438	538	334	245	162	224
20	301	283	362	e190	e230	1,090	450	485	249	226	161	204
21	311	288	365	e190	e250	854	491	470	224	217	163	204
22	307	290	335	e190	e280	626	534	468	211	211	158	235
23	303	290	e240	e190	e400	617	529	427	203	208	154	233
24	320	286	e190	e190	e520	581	460	377	205	203	152	247
25	342	282	e220	e190	e580	502	391	349	227	194	158	258
26	346	273	e250	e180	e430	466	352	325	243	186	156	231
27	370	255	290	e180	e300	453	330	307	263	184	157	208
28	398	200	277	e190	e250	469	317	293	285	182	167	199
29	387	276	261	e200	---	535	304	283	271	182	423	198
30	357	271	267	217	---	600	321	280	296	180	439	199
31	337	---	270	231	---	559	---	287	---	203	534	---
TOTAL	11,258	9,181	7,981	6,707	7,460	14,467	12,100	18,922	8,233	7,946	6,300	7,377
MEAN	363	306	257	216	266	467	403	610	274	256	203	246
MAX	568	407	365	277	580	1,140	534	1,340	354	396	534	476
MIN	281	200	190	180	220	200	304	280	203	180	152	177
CFSM	0.60	0.50	0.42	0.36	0.44	0.77	0.66	1.00	0.45	0.42	0.33	0.40
IN.	0.69	0.56	0.49	0.41	0.46	0.88	0.74	1.16	0.50	0.49	0.38	0.45

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)
	284	842	(1973)	117	(1959)	328	942	(1986)	116	(1959)	247	519	(1993)	76.2	(1959)
	248	945	(1946)	78.3	(1959)	338	1,135	(1966)	89.3	(1959)	248	945	(1946)	78.3	(1959)
	794	1,759	(1948)	170	(1964)	714	2,588	(1993)	253	(1946)	448	1,518	(1973)	138	(1958)
	448	1,518	(1973)	112	(1958)	448	1,455	(2000)	112	(1958)	324	1,495	(1993)	112	(1965)
	324	1,495	(1993)	95.8	(1958)	264	1,018	(1980)	95.8	(1958)	264	1,018	(1980)	100	(1965)
	316	1,285	(1965)	100	(1958)	316	1,285	(1965)	100	(1958)	316	1,285	(1965)	100	(1958)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1914 - 2003
ANNUAL TOTAL	163,164	117,932	
ANNUAL MEAN	447	323	396
HIGHEST ANNUAL MEAN			824
LOWEST ANNUAL MEAN			158
HIGHEST DAILY MEAN	1,650	May 10	7,540
LOWEST DAILY MEAN	(a)190	Dec 24	26
ANNUAL SEVEN-DAY MINIMUM	(a)222	Dec 3	(a)72
MAXIMUM PEAK FLOW			(b)7,900
MAXIMUM PEAK STAGE		11.90	22.78
ANNUAL RUNOFF (CFSM)	0.73	0.53	0.65
ANNUAL RUNOFF (INCHES)	9.97	7.20	8.83
10 PERCENT EXCEEDS	766	487	780
50 PERCENT EXCEEDS	346	276	250
90 PERCENT EXCEEDS	258	190	140

(a) Ice affected

(b) Estimated gage height, 17.50 ft, site and datum then in use, from rating curve extended above 6,000 ft<sup>3</sup>/s

(c) Estimated due to ice effect or missing record

## WISCONSIN RIVER BASIN

05405855 LAKE WISCONSIN TRIBUTARY #3 NEAR PRAIRIE DU SAC, WI

LOCATION.--Lat 43°20'10", long 89°42'23", in NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec.19, T.10 N., R.7 E., Sauk County, Hydrologic Unit 07070005, on USDA Dairy Forage Research station, 2.7 mi northeast of Prairie du Sac.

DRAINAGE AREA.--0.0028 mi<sup>2</sup> (1.78 acres).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1997 to September 2003 (discontinued).

GAGE.--Water-stage recorder and a 3-inch Parshall flume. Elevation of gage is 850 ft(revised) above NGVD of 1929, from topographic map.

REMARKS.--Records are good (see page 11). Periods of flow are reported; for all other periods, there was no flow.

START DATE	START TIME	END DATE	END TIME	VOLUME (cubic feet)	PEAK DISCHARGE (ft <sup>3</sup> /s)
02/19/03	1845	02/19/03	2245	51.8	0.010
02/19/03	2330	02/20/03	0630	881	0.124
02/20/03	0815	02/20/03	1730	1,071	0.076
02/21/03	0900	02/21/03	1930	2,281	0.196
02/22/03	1100	02/22/03	1515	60.5	0.010
02/23/03	0800	02/23/03	1645	138	0.109
02/24/03	0900	02/24/03	1545	389	0.058
02/25/03	1045	02/25/03	1730	717	0.089
02/26/03	0845	02/26/03	1510	1,002	0.102
03/14/03	1230	03/15/03	0515	1,668	0.187



05405855 LAKE WISCONSIN TRIBUTARY #3 NEAR PRAIRIE DU SAC, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1997 to current year.

INSTRUMENTATION.--Water-quality sampler November 1997 to current year.

REMARKS.-- Chemical analyses by the Wisconsin State Laboratory of Hygiene. Samples are storm-composite samples collected by an automatic point sampler.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Beginning Date	Beginning Time	Ending date	Ending time	Sam-pling method, code (82398)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Residue vola-tile, sus-pended, mg/L (00535)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Runoff volume millions of cubic feet (99905)
FEB 21-21	1045	20030221	1300	50	33	25	55	6.25	1.95	3.19	1.10	2.25x10 <sup>-3</sup>
MAR 14-14	1259	20030314	1500	50	67	41	94	36.5	0.828	4.38	6.06	1.67x10 <sup>-3</sup>

## 05405855 LAKE WISCONSIN TRIBUTARY #3 NEAR PRAIRIE DU SAC, WI--Continued

## PRECIPITATION QUANTITY

PERIOD OF RECORD.--November 1997 to September 2003 (discontinued).

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

REMARKS.--Gage established Nov. 1, 1997. Rainfall estimated to be 0.00 for Nov. 5, 7, 10-11, 18-19, 29, Dec. 2, 20-21, Jan. 29-30, Feb. 1-3, 6, 11-12, 24, 26, and Mar. 4-5 because recorded precipitation interpreted as collector snowmelt. Precipitation deleted June 18 to July 2 and Sept. 12-15 because rain gage was plugged with debris.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 3.97 in., June 1, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.50 in., July 15.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.12	0.00	---	0.00	0.00
2	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	---	0.00	0.00
3	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.16	0.05	0.00
4	1.23	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.00	0.37	0.00	0.00
5	0.02	0.00	0.00	0.00	0.00	0.00	0.34	0.46	0.00	0.33	0.01	0.00
6	0.05	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.29	0.18	0.00	0.00
7	0.01	0.00	0.00	0.00	0.00	0.00	0.13	0.30	0.00	0.11	0.00	0.00
8	0.01	0.00	0.00	0.00	0.00	0.00	0.39	0.07	0.58	0.13	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.01	0.00	0.00
10	0.12	0.00	0.00	0.00	0.00	0.00	0.00	1.21	0.11	0.67	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.01	0.00	0.00	0.00
12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	---
13	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	---
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	1.50	0.00	---
16	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.00	0.00
17	0.06	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
18	0.29	0.00	0.27	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.25	0.24	0.12	---	0.00	0.00	0.07
20	0.04	0.00	0.00	0.00	0.00	0.03	0.12	0.00	---	0.18	0.13	0.00
21	0.03	0.00	0.00	0.00	0.00	0.06	0.06	0.00	---	0.19	0.00	0.13
22	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	---	0.00	0.00	0.05
23	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	---	0.00	0.00	0.00
24	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00
25	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.13	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.05
27	0.01	0.00	0.00	0.00	0.00	0.25	0.00	0.00	---	0.00	0.00	0.00
28	0.05	0.00	0.00	0.00	0.00	0.28	0.00	0.23	---	0.00	0.90	0.02
29	0.00	0.00	0.00	0.00	---	0.01	0.00	0.00	---	0.00	0.00	0.01
30	0.01	0.00	0.00	0.00	---	0.00	0.91	0.24	---	0.82	0.00	0.00
31	0.00	---	0.00	0.00	---	0.02	---	0.23	---	0.02	0.00	---
TOTAL	3.02	0.01	0.31	0.00	0.00	0.91	2.29	4.83	---	---	1.22	---

WISCONSIN RIVER BASIN

05405857 LAKE WISCONSIN TRIBUTARY #2 NEAR PRAIRIE DU SAC, WI

LOCATION.--Lat 43°20'06", long 89°42'20", in NW 1/4 NE 1/4 sec.19, T.10 N., R.7 E., Sauk County, Hydrologic Unit 07070005, on USDA Dairy Forage Research station, 2.6 mi northeast of Prairie du Sac.

DRAINAGE AREA.--0.0089 mi<sup>2</sup> (5.71 acres).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1997 to September 2003 (discontinued).

GAGE.--Water-stage recorder and a 3-inch Parshall flume. Elevation of gage is 840 ft above NGVD of 1929, from topographic map.

REMARKS.--Records are good (see page 11). Periods of flow are reported; for all other periods, there was no flow.

START DATE	START TIME	END DATE	END TIME	VOLUME (cubic feet)	PEAK DISCHARGE (ft <sup>3</sup> /s)
10/04/02	0835	10/04/02	0915	104	0.146
02/19/03	1430	02/19/03	1800	138	0.024
02/20/03	1130	02/20/03	1900	838	0.082
02/21/03	1115	02/21/03	1600	17.3	0.003
03/14/03	1115	03/14/03	2030	2,834	0.319
03/15/03	1045	03/15/03	1515	77.7	0.013
07/15/03	0105	07/15/03	0230	147	0.095

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1997 to current year.

INSTRUMENTATION.--Water-quality sampler November 1997 to current year.

REMARKS.-- Chemical analyses by the Wisconsin State Laboratory of Hygiene. Samples are storm-composite samples collected by an automatic point sampler.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Beginning Date	Beginning Time	Ending date	Ending time	Sam- pling method, code (82398)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Residue vola- tile, sus- pended, mg/L (00535)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)	Runoff volume millions of cubic feet (99905)
FEB 19-19	1454	20030219	1726	50	236	84	41	8.79	3.27	7.52	8.24	138x10 <sup>-6</sup>
FEB 20-20	1314	20030220	1606	50	84	40	20	4.90	1.06	3.88	4.66	838x10 <sup>-6</sup>
JUL 15-15	0115	20030715	0210	50	240	38	3.1	0.152	0.726	0.884	1.31	147x10 <sup>-6</sup>

## 05405857 LAKE WISCONSIN TRIBUTARY #2 NEAR PRAIRIE DU SAC, WI--Continued

## PRECIPITATION QUANTITY

PERIOD OF RECORD.--November 1997 to September 2003 (discontinued).

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

REMARKS.--Gage established Nov. 6, 1997. Rainfall estimated to be 0.00 for Nov. 5, 11, 17-19, 30, Dec. 2-3, Jan. 5, 29, 30, Feb. 2-3, 25-26, and Mar. 5, 8, 11-13 because recorded precipitation interpreted as collector snowmelt. Precipitation deleted June 6-10, and June 17 to July 1 because rain gage was plugged with debris.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 3.30 in., Apr. 3, 1999.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.24 in., Sept. 13.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.12	0.00	---	0.00	0.00
2	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
3	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.16	0.04	0.00
4	1.43	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.01	0.37	0.00	0.00
5	0.02	0.00	0.00	0.00	0.00	0.00	0.33	0.44	0.00	0.34	0.01	0.00
6	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.20	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.31	---	0.12	0.00	0.00
8	0.02	0.00	0.00	0.00	0.00	0.00	0.08	0.10	---	0.13	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	---	0.01	0.00	0.00
10	0.13	0.03	0.00	0.00	0.00	0.00	0.00	1.24	---	0.67	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.01	0.00	0.00
12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.61
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	1.56	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
17	0.06	0.00	0.04	0.00	0.00	0.00	0.01	0.00	---	0.00	0.00	0.00
18	0.34	0.00	0.30	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.24	0.26	0.12	---	0.00	0.00	0.08
20	0.03	0.00	0.00	0.00	0.00	0.03	0.15	0.00	---	0.18	0.11	0.00
21	0.03	0.00	0.00	0.00	0.00	0.06	0.06	0.00	---	0.19	0.00	0.16
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.03
23	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01	---	0.00	0.00	0.00
24	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00
25	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.13	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.05
27	0.01	0.00	0.00	0.00	0.00	0.25	0.00	0.00	---	0.00	0.00	0.00
28	0.05	0.00	0.00	0.00	0.00	0.29	0.00	0.23	---	0.00	0.99	0.02
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	---	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.92	0.23	---	0.56	0.00	0.00
31	0.00	---	0.00	0.00	---	0.02	---	0.27	---	0.02	0.00	---
TOTAL	3.37	0.03	0.34	0.00	0.00	0.90	2.05	4.89	---	---	1.28	3.60

## WISCONSIN RIVER BASIN

05405859 LAKE WISCONSIN TRIBUTARY #1 NEAR PRAIRIE DU SAC, WI

LOCATION.--Lat 43°19'59", long 89°42'23", in SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec.19, T.10 N., R.7 E., Sauk County, Hydrologic Unit 07070005, on USDA Dairy Forage Research station, 2.5 mi northeast of Prairie du Sac.

DRAINAGE AREA.--0.0037 mi<sup>2</sup> (2.38 acres).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1997 to September 2003 (discontinued).

GAGE.--Water-stage recorder and a 3-inch Parshall flume. Elevation of gage is 845 ft(revised) above NGVD of 1929, from topographic map.

REMARKS.--Records are good (see page 11). Periods of flow are reported; for all other periods, there was no flow. Gage-height telemeter at station.

START DATE	START TIME	END DATE	END TIME	VOLUME (cubic feet)	PEAK DISCHARGE (ft <sup>3</sup> /s)
02/20/03	1315	02/20/03	2015	527	0.033
02/21/03	1015	02/21/03	1815	441	0.037
03/14/03	1115	03/14/03	1915	1,668	0.162
03/15/03	1000	03/15/03	1800	441	0.037
03/16/03	0945	03/16/03	1715	147	0.007
03/17/03	0945	03/17/03	1300	26	0.003
07/15/03	0100	07/15/03	0230	320	0.204

05405859 LAKE WISCONSIN TRIBUTARY #1 NEAR PRAIRIE DU SAC, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1997 to current year.

INSTRUMENTATION.--Water-quality sampler November 1997 to current year.

REMARKS.-- Chemical analyses by the Wisconsin State Laboratory of Hygiene. Samples are storm-composite samples collected by an automatic point sampler.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Beginning Date	Beginning Time	Ending date	Ending time	Sam- pling method, code (82398)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Residue vola- tile, sus- pended, mg/L (00535)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)	Runoff volume of cubic feet (99905)
FEB 20-20	1200	20030220	1610	50	29	21	6.2	1.18	1.86	1.98	2.45	527x10 <sup>-6</sup>
FEB 21-21	1259	20030221	1530	50	30	20	5.7	0.582	1.17	1.63	2.00	441x10 <sup>-6</sup>
MAR 14-14	1229	20030314	1456	50	95	18	6.0	0.954	1.26	1.52	2.02	1.67x10 <sup>-3</sup>
JUL 15-15	0155	20030715	0225	50	273	43	4.0	0.095	0.723	1.00	1.57	320x10 <sup>-6</sup>

## 05405859 LAKE WISCONSIN TRIBUTARY #1 NEAR PRAIRIE DU SAC, WI--Continued

## PRECIPITATION QUANTITY

PERIOD OF RECORD.--November 1997 to September 2003 (discontinued).

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

REMARKS.--Gage established Nov. 1, 1997. Rainfall estimated to be 0.00 for Nov. 5, 10-11, 30, Dec. 2-3, 5, Jan. 5, 7, 28, 31, Feb. 2-3, 6, 11, and Mar. 4-5, 11-12 because recorded precipitation interpreted as collector snowmelt. Precipitation deleted Oct. 3-5 and July 7-15 because rain gage was plugged with debris.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 5.30 in., Aug. 2, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.25 in., Sept. 13.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
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	0.12	0.00	0.00	0.00	0.00
2	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.15	0.05	0.00
4	---	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.00	0.37	0.00	0.00
5	---	0.00	0.00	0.00	0.00	0.00	0.26	0.42	0.00	0.36	0.00	0.00
6	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.23	0.00	0.00
7	0.03	0.00	0.00	0.00	0.00	0.00	0.12	0.29	0.00	---	0.00	0.00
8	0.05	0.00	0.00	0.00	0.00	0.00	0.15	0.08	0.60	---	0.00	0.00
9	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.00	---	0.00	0.00
10	0.12	0.00	0.00	0.00	0.00	0.00	0.00	1.16	0.18	---	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	---	0.00	0.00
12	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.40
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	2.25
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	---	0.00	0.58
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	---	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
17	0.07	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
18	0.32	0.00	0.27	0.00	0.00	0.00	0.00	0.00	1.08	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.21	0.25	0.12	0.01	0.00	0.00	0.08
20	0.03	0.00	0.00	0.00	0.00	0.03	0.16	0.00	0.00	0.16	0.00	0.00
21	0.03	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.20	0.14	0.16
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03
23	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
24	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00
25	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.13	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
27	0.02	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.09	0.00	0.00	0.00
28	0.04	0.00	0.00	0.00	0.00	0.28	0.00	0.20	0.86	0.00	0.99	0.02
29	0.01	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.87	0.23	0.00	0.61	0.00	0.00
31	0.00	---	0.00	0.00	---	0.02	---	0.27	---	0.02	0.00	---
TOTAL	---	0.00	0.31	0.00	0.00	0.85	1.96	4.71	3.96	---	1.31	3.57



054064775 BLACK EARTH CREEK TRIBUTARY AT COUNTY TRUNK HIGHWAY KP AT CROSS PLAINS, WI

LOCATION.--Lat 43°06'43", long 89°39'26" in SW 1/4 NW 1/4 sec.3, T.7 N., R.7 E., Dane County, Hydrologic Unit 07070005, 0.7 mi east of Garfoot Road and 0.2 mi west of Bourbon Road at Cross Plains.

DRAINAGE AREA.--0.2 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder in a 2-ft H-flume. Elevation of gage is 873 ft, from topographic map. Unpublished discharge data from June 1998 to September 1999 available in district office.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN 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	0.53	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.23
14	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.04	0.00	0.00	0.00	0.44
15	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.01	0.00	0.25	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00
22	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.19	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.27	0.00	0.00	0.00	0.20	0.57	0.19	1.64	0.00	0.77	0.00	0.67
MEAN	0.009	0.000	0.000	0.000	0.007	0.018	0.006	0.053	0.000	0.025	0.000	0.022
MAX	0.27	0.00	0.00	0.00	0.20	0.39	0.19	0.57	0.00	0.36	0.00	0.44
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFSM	0.04	0.00	0.00	0.00	0.04	0.09	0.03	0.26	0.00	0.12	0.00	0.11
IN.	0.05	0.00	0.00	0.00	0.04	0.11	0.04	0.31	0.00	0.14	0.00	0.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	MEAN	0.002	0.001	0.000	0.000	0.017	0.005	0.011	0.053	0.052	0.007	0.051	0.015
MAX	0.009	0.004	0.001	0.001	0.027	0.018	0.021	0.17	0.18	0.025	0.29	0.057	
(WY)	(2003)	(2002)	(2002)	(2001)	(2000)	(2003)	(2001)	(2000)	(2000)	(2003)	(2001)	(2001)	
MIN	0.000	0.000	0.000	0.000	0.007	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1999)	(1999)	(1999)	(1999)	(2001)	(1999)	(2002)	(1999)	(2003)	(1998)	(2002)	(1998)	

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1998 - 2003

ANNUAL TOTAL		3.00		4.31									
ANNUAL MEAN		0.008		0.012							0.019		
HIGHEST ANNUAL MEAN											0.038		2001
LOWEST ANNUAL MEAN											0.004		1999
HIGHEST DAILY MEAN		0.74	Jun 4		0.57	May 11					8.2	Aug 2,	2001
LOWEST DAILY MEAN		0.00	Jan 1		0.00	Oct 1					0.00	Jun 26,	1998
ANNUAL SEVEN-DAY MINIMUM		0.00	Jan 1		0.00	Oct 5					0.00	Jun 30,	1998
MAXIMUM PEAK FLOW											69	Mar 20,	1999
MAXIMUM PEAK STAGE											2.85	Mar 20,	1999
ANNUAL RUNOFF (CFSM)		0.041		0.059							0.095		
ANNUAL RUNOFF (INCHES)		0.56		0.80							1.29		
10 PERCENT EXCEEDS		0.00		0.00							0.00		
50 PERCENT EXCEEDS		0.00		0.00							0.00		
90 PERCENT EXCEEDS		0.00		0.00							0.00		

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 2000 to current year.

INSTRUMENTATION.--Continuous water temperature recorder August 2000 to current year.

REMARKS.--Water temperature recorder located near H-flume represent water temperature at sensor within 0.5°C. Unpublished water temperature data from August 2000 to September 2002 are available in the District Office.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 33.5°C, June 1, 2002; minimum observed, 0.0°C on many days during winter period.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 31.5°C, Aug. 26; minimum observed, 0.0°C on many days during winter period.

TEMPERATURE, WATER, DEGREES CELSIUS WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	22.5	16.0	19.0	3.5	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
2	18.0	13.5	16.0	7.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
3	15.0	11.5	14.0	7.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
4	19.0	14.0	16.5	4.5	0.0	1.0	0.0	0.0	0.0	0.5	0.0	0.0
5	16.0	11.5	13.5	5.0	0.0	3.0	0.0	0.0	0.0	1.0	0.0	0.0
6	17.0	8.0	12.0	6.5	1.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
7	13.0	3.0	8.0	10.0	0.0	5.0	0.5	0.0	0.0	4.0	0.0	1.0
8	15.0	8.0	11.5	12.5	5.0	8.5	0.0	0.0	0.0	5.5	0.0	2.0
9	13.0	5.5	9.5	14.5	4.5	9.5	0.0	0.0	0.0	2.0	0.0	0.5
10	16.5	6.0	11.5	13.5	5.5	10.0	0.5	0.0	0.0	0.0	0.0	0.0
11	17.0	8.0	11.5	6.5	3.0	4.0	0.5	0.0	0.0	0.0	0.0	0.0
12	14.5	6.5	11.0	5.0	1.0	3.0	1.5	0.0	0.5	0.0	0.0	0.0
13	9.5	2.0	5.0	7.5	0.0	4.0	2.0	0.0	0.5	0.0	0.0	0.0
14	11.0	1.5	6.0	6.0	2.5	4.0	2.0	0.0	0.5	0.0	0.0	0.0
15	11.5	1.5	6.0	4.5	0.0	2.0	4.0	0.0	1.0	0.0	0.0	0.0
16	7.5	0.0	3.0	4.5	0.0	1.5	1.0	0.0	0.0	0.0	0.0	0.0
17	7.5	2.0	4.5	1.5	0.0	0.0	1.5	0.0	0.5	0.0	0.0	0.0
18	11.0	2.5	7.5	3.5	0.0	1.5	6.0	1.0	3.5	0.0	0.0	0.0
19	8.5	2.5	6.0	7.0	0.0	2.0	3.0	0.0	1.5	0.0	0.0	0.0
20	8.5	0.0	5.0	7.5	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
21	10.5	4.0	7.5	3.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
22	6.5	3.0	4.5	2.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
23	8.0	2.5	5.0	5.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
24	7.5	3.5	5.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	8.5	5.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	9.0	5.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	7.0	0.5	4.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
28	8.5	3.5	5.5	1.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
29	10.0	0.0	6.0	6.0	0.0	2.5	2.0	0.0	0.5	0.0	0.0	0.0
30	7.5	0.0	2.5	1.0	0.0	0.0	7.5	0.0	2.5	0.0	0.0	0.0
31	5.0	0.0	1.5	---	---	---	0.0	0.0	0.0	0.5	0.0	0.0
MONTH	22.5	0.0	8.2	14.5	0.0	2.5	7.5	0.0	0.4	5.5	0.0	0.1

## 054064775 BLACK EARTH CREEK TRIBUTARY AT COUNTY TRUNK HIGHWAY KP AT CROSS PLAINS, WI—Continued

## TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	0.0	0.0	0.0	10.0	1.0	5.5	16.5	9.5	12.0
2	0.5	0.0	0.0	0.0	0.0	0.0	9.5	2.0	5.0	14.5	9.0	11.5
3	0.5	0.0	0.0	0.0	0.0	0.0	3.5	1.0	2.5	12.5	7.5	10.0
4	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	1.0	12.0	5.5	9.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	13.5	9.5	11.0
6	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.5	18.0	10.5	13.5
7	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	12.5	10.0	11.5
8	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.5	13.0	11.0	12.0
9	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.5	21.0	11.5	15.5
10	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	1.5	18.0	13.5	15.5
11	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.0	3.5	15.5	9.5	12.5
12	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	4.0	17.0	8.5	11.5
13	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.0	5.0	15.5	10.0	12.5
14	0.0	0.0	0.0	0.5	0.0	0.0	17.5	6.0	11.5	15.5	12.5	13.5
15	0.0	0.0	0.0	4.5	0.0	1.0	21.0	12.0	16.0	15.5	11.0	12.5
16	0.0	0.0	0.0	5.0	0.0	2.0	14.0	4.5	8.0	15.5	12.5	13.5
17	0.0	0.0	0.0	4.0	0.0	2.0	13.0	4.0	7.5	18.5	9.0	13.5
18	0.0	0.0	0.0	4.5	1.5	2.5	10.0	5.0	7.5	19.5	9.5	14.5
19	0.0	0.0	0.0	3.5	0.5	1.5	14.5	5.0	10.0	19.0	15.0	16.5
20	1.5	0.0	0.0	6.0	1.5	3.5	14.0	8.0	11.0	16.5	7.0	12.0
21	0.5	0.0	0.0	4.5	1.0	2.5	9.5	4.5	7.5	16.5	5.0	10.5
22	0.0	0.0	0.0	7.5	0.0	3.5	14.0	2.0	7.0	17.5	4.5	11.0
23	0.0	0.0	0.0	9.0	0.0	3.0	12.5	1.5	7.0	18.0	7.5	13.0
24	0.0	0.0	0.0	12.5	3.5	7.5	15.0	3.5	9.0	18.0	5.5	11.5
25	0.0	0.0	0.0	9.5	0.0	3.5	13.5	4.0	9.0	19.0	7.5	13.5
26	0.0	0.0	0.0	9.0	0.0	3.5	15.0	2.0	8.5	20.5	7.0	13.5
27	0.0	0.0	0.0	9.0	2.5	4.5	19.0	5.5	12.0	21.5	8.5	15.0
28	0.0	0.0	0.0	5.5	0.0	3.0	21.5	6.5	14.0	22.0	10.5	15.5
29	---	---	---	2.5	0.0	0.5	17.5	5.0	10.5	21.0	7.5	14.5
30	---	---	---	5.0	0.0	1.5	11.0	8.5	10.0	21.0	10.0	15.0
31	---	---	---	6.0	0.0	2.0	---	---	---	18.0	8.5	13.5
MONTH	1.5	0.0	0.0	12.5	0.0	1.5	21.5	0.0	6.5	22.0	4.5	12.9
	JUNE			JULY			AUGUST			SEPTEMBER		
1	18.5	6.5	12.5	24.5	15.5	20.0	27.5	19.5	23.0	23.5	12.0	17.0
2	18.5	7.5	13.5	26.0	16.5	21.0	26.5	17.5	22.0	23.5	10.0	16.5
3	19.5	12.0	15.0	29.0	19.0	23.5	26.5	18.0	21.0	24.5	13.0	18.5
4	22.0	10.0	15.5	27.0	20.5	23.5	25.5	17.5	21.5	22.5	12.5	16.5
5	22.0	10.5	16.0	26.5	21.0	23.0	27.0	16.5	21.5	23.5	10.5	16.5
6	19.0	12.5	15.0	24.0	20.0	24.0	28.0	19.0	23.0	27.0	13.5	19.5
7	22.0	12.5	16.5	28.0	21.0	24.0	27.0	18.0	22.0	27.0	14.5	20.0
8	20.0	13.0	16.5	25.5	21.5	23.0	26.0	18.0	21.5	26.5	15.5	20.5
9	21.0	10.5	15.5	23.5	19.0	21.0	27.0	16.5	21.0	27.0	16.0	21.5
10	21.0	14.0	17.5	22.0	17.5	20.0	27.5	15.5	21.5	27.0	17.5	21.5
11	19.0	13.0	16.5	22.5	17.0	19.5	24.5	18.5	21.0	28.0	18.0	22.0
12	22.5	13.0	17.5	23.5	15.0	19.0	26.5	17.5	22.0	23.0	19.0	21.0
13	23.0	14.0	18.0	24.5	15.5	20.0	27.0	16.5	21.5	22.0	19.5	20.5
14	25.5	14.0	19.5	25.5	17.5	21.5	27.5	17.5	22.5	21.0	16.0	19.0
15	23.5	14.5	18.5	26.0	20.5	23.5	30.0	19.5	24.0	16.5	11.0	14.5
16	24.0	13.5	19.0	24.0	19.5	21.5	30.0	19.0	24.0	19.0	11.0	15.0
17	23.5	14.0	19.0	28.5	18.5	22.5	27.0	17.0	22.0	19.5	12.5	16.0
18	29.0	18.0	22.5	23.0	16.5	20.0	28.0	16.5	22.0	20.0	14.5	17.5
19	22.0	12.5	18.0	24.0	14.0	19.0	28.5	20.0	23.5	16.5	9.0	13.5
20	22.0	9.5	16.0	27.0	18.0	23.0	30.5	20.5	25.0	16.5	7.0	11.5
21	23.0	12.0	17.5	25.5	22.0	23.5	29.5	20.5	25.0	18.5	9.5	14.5
22	25.5	14.0	19.0	22.5	16.5	20.5	27.0	17.5	21.5	18.0	10.0	15.0
23	29.0	16.5	22.0	23.5	14.0	18.5	27.5	15.0	21.5	16.5	7.5	12.0
24	29.0	20.0	24.0	24.5	15.5	19.5	30.0	17.5	23.5	19.5	9.5	14.5
25	31.0	21.0	24.0	26.0	16.5	21.5	30.5	21.5	25.0	14.5	7.5	11.0
26	23.0	15.0	19.5	27.5	20.5	24.0	31.5	19.0	25.0	16.5	10.5	12.5
27	28.0	14.0	20.5	28.0	22.0	25.0	27.0	16.5	21.5	13.5	8.5	11.0
28	22.0	17.5	19.5	26.0	18.5	22.5	31.5	16.5	23.5	12.5	9.0	10.5
29	24.0	15.0	19.5	26.0	17.0	21.5	24.0	18.5	21.0	14.5	3.0	9.0
30	24.0	15.0	19.5	27.5	20.5	23.5	23.5	16.0	19.0	13.0	2.0	7.5
31	---	---	---	27.0	19.5	22.5	22.0	13.5	17.5	---	---	---
MONTH	31.0	6.5	18.1	29.0	14.0	21.8	31.5	13.5	22.2	28.0	2.0	15.9

054064775 BLACK EARTH CREEK TRIBUTARY AT COUNTY TRUNK HIGHWAY KP AT CROSS PLAINS, WI—Continued

## PRECIPITATION QUANTITY

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

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

REMARKS.--Gage established July 1998.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 6.52 in., Aug 2, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.13 in., Sept. 13.

PRECIPITATION, TOTAL, INCHES WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.10	0.00	0.00	0.00	0.02	0.00	0.00	0.06	0.00	0.00	0.00	0.00
2	0.41	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.14	0.00
3	0.03	0.00	0.00	0.00	0.02	0.00	0.10	0.00	0.00	0.00	0.00	0.00
4	1.10	0.00	0.00	0.00	0.00	0.00	0.03	0.11	0.00	0.22	0.00	0.00
5	0.00	0.09	0.00	0.05	0.00	0.00	0.00	0.35	0.00	0.30	0.00	0.00
6	0.06	0.00	0.00	0.01	0.00	0.00	0.12	0.00	0.26	1.17	0.01	0.00
7	0.01	0.00	0.00	0.00	0.00	0.04	0.00	0.42	0.01	0.36	0.00	0.00
8	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.18	0.71	0.29	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.01	0.01	0.00	0.00
10	0.00	0.04	0.00	0.00	0.00	0.00	0.00	1.24	0.02	0.15	0.00	0.00
11	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.79
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13
14	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.61	0.00	0.00	0.00	0.64
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.94	0.00	0.01
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00
17	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.25	0.49	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00
19	0.00	0.01	0.00	0.00	0.00	0.17	0.19	0.05	0.01	0.00	0.00	0.02
20	0.01	0.00	0.00	0.00	0.00	0.01	0.11	0.00	0.00	0.00	0.11	0.00
21	0.00	0.07	0.00	0.00	0.00	0.05	0.03	0.00	0.00	0.97	0.00	0.06
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.12
23	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.00	0.00	0.00
24	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00
25	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.03	0.00
26	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
27	0.01	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
28	0.06	0.00	0.00	0.00	0.00	0.37	0.00	0.22	1.02	0.05	0.46	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.0	0.00	0.02
30	0.00	0.00	0.00	0.00	---	0.00	2.06	0.35	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.18	---	0.02	---	0.06	---	0.00	0.00	---
TOTAL	2.36	0.91	0.57	0.24	0.10	0.79	2.65	4.26	3.19	4.46	0.93	3.81

054064785 BLACK EARTH CREEK TRIBUTARY AT CROSS PLAINS, WI

LOCATION.--Lat 43°06'42", long 89°39'52" in SE ¼ NE ¼ sec.4, T.7 N., R.7 E., Dane County, Hydrologic Unit 07070005, 0.1 mi east of CTH KP on Bourbon Road at Cross Plains.

DRAINAGE AREA.--0.27 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage and velocity recorders located in a 4.5 ft diameter circular, concrete storm sewer. Elevation of gage is 863 ft above sea level from topographic map. Unpublished discharge data from July 1998 to September 2002 available in district office.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Periods of backwater measured via velocity meter. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
2	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
4	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.05	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	e0.20	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.09	0.04	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.01	0.00	e0.19	0.00	0.01	0.00	0.00
11	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
13	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.35
14	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.09	0.00	0.00	0.00	0.11
15	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	e0.18	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.03	0.02	0.00
17	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.01	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.03	0.00	0.02	0.00	0.00	0.00	0.01	0.00
21	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.13	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
25	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.02	0.14	0.00	0.05	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.24	0.04	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.26	0.05	0.08	0.00	0.06	0.33	0.30	0.54	0.34	0.74	0.10	0.56
MEAN	0.008	0.002	0.003	0.000	0.002	0.011	0.010	0.017	0.011	0.024	0.003	0.019
MAX	0.18	0.04	0.07	0.00	0.03	0.15	0.24	0.19	0.14	0.20	0.05	0.35
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFSM	0.03	0.01	0.01	0.00	0.01	0.04	0.04	0.06	0.04	0.09	0.01	0.07
IN.	0.04	0.01	0.01	0.00	0.01	0.05	0.04	0.07	0.05	0.10	0.01	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)
	0.006	0.012	(1999)	0.003	(2000)	0.004	0.007	(2001)	0.000	(2000)	0.001	0.003	(1999)	0.002	(1999)
	0.006	0.013	(2001)	0.000	(2000)	0.002	0.013	(2001)	0.000	(2000)	0.002	0.013	(2001)	0.006	(2000)
	0.003	0.011	(2003)	0.000	(1999)	0.003	0.011	(2003)	0.000	(1999)	0.003	0.011	(2003)	0.006	(1999)
	0.019	0.028	(2000)	0.010	(1999)	0.019	0.028	(2000)	0.021	(2003)	0.021	0.028	(2003)	0.019	(2000)
	0.025	0.043	(2000)	0.012	(1999)	0.025	0.043	(2000)	0.025	(2003)	0.025	0.043	(2003)	0.025	(2000)
	0.017	0.054	(1999)	0.011	(2001)	0.017	0.054	(1999)	0.025	(2001)	0.025	0.054	(2001)	0.017	(1999)
	0.025	0.075	(2001)	0.005	(2001)	0.025	0.075	(2001)	0.025	(2003)	0.025	0.075	(2003)	0.025	(2001)
	0.017	0.031	(2001)	0.005	(1999)	0.017	0.031	(2001)	0.017	(1999)	0.017	0.031	(1999)	0.017	(2001)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	3.50		3.36			
ANNUAL MEAN	0.010		0.009		0.012	
HIGHEST ANNUAL MEAN					0.017	
LOWEST ANNUAL MEAN					0.009	
HIGHEST DAILY MEAN	0.20	Jun 4	0.35	Sep 13	1.8	Aug 2, 2001
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 3	0.00	Jul 23, 1998
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 5	0.00	Jul 23, 1998
MAXIMUM PEAK FLOW					71	Aug 2, 2001
MAXIMUM PEAK STAGE					6.15	Aug 2, 2001
INSTANTANEOUS LOW FLOW					0.00	Apr 23, 1999
ANNUAL RUNOFF (CFSM)	0.036		0.034		0.045	
ANNUAL RUNOFF (INCHES)	0.48		0.46		0.61	
10 PERCENT EXCEEDS	0.03		0.02		0.03	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated

## 054064785 BLACK EARTH CREEK TRIBUTARY AT CROSS PLAINS, WI—Continued

## WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1999 to current year.

SUSPENDED-SOLIDS DISCHARGE: October 1998 to September 2002.

TOTAL PHOSPHORUS DISCHARGE: April 1999 to September 2002.

INSTRUMENTATION.--Refrigerated water-quality sampler October 1998 to September 2002; continuous water temperature recorder June 1999 to current year.

REMARKS.--Water temperature records represent water temperature at sensor within 0.5°C. Chemical analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise noted. Suspended-solids and total-phosphorus discharge extremes represent total event load. Unpublished water-quality data from July 1998 to September 2002 are available in the District Office.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 30.5°C, Aug. 2, 2003; minimum observed, 0.0°C on many days during winter periods.

SUSPENDED-SOLIDS DISCHARGE: Maximum event load, 1.2 tons Aug. 1-3, 2001; minimum event load, 0.003 ton, Apr. 19, 2000.

TOTAL-PHOSPHORUS DISCHARGE: Maximum event load, 4.7 lb, Aug. 1-3, 2001; minimum event load, 0.02 lb, Apr. 19, 2001.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 30.5°C, Aug. 2; minimum observed, 0.0°C on many days during winter period.

## TEMPERATURE, WATER, DEGREES CELSIUS WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	20.0	17.0	17.5	6.0	3.0	4.5	4.0	0.0	1.5	2.5	1.0	2.0
2	19.0	14.5	17.0	7.5	3.5	5.5	4.0	1.5	3.0	3.0	1.5	2.0
3	16.5	15.5	16.0	7.0	3.0	5.5	3.5	0.0	1.0	2.5	0.0	1.0
4	18.5	14.5	16.5	7.5	4.5	6.0	2.0	0.0	0.5	2.5	0.0	1.5
5	15.5	13.0	14.0	8.5	6.0	7.0	0.0	0.0	0.0	3.0	2.0	2.5
6	15.5	12.5	14.0	8.0	6.0	6.5	1.5	0.0	0.5	2.5	1.0	2.0
7	14.0	10.5	12.0	9.0	5.0	7.0	2.5	0.0	1.5	3.5	1.0	2.0
8	14.5	12.0	13.5	9.5	8.0	9.0	1.5	0.0	0.5	5.0	2.5	3.5
9	14.5	11.5	13.5	10.0	8.0	9.5	0.5	0.0	0.5	4.0	1.0	2.5
10	15.0	11.5	14.0	10.0	8.5	9.5	3.0	0.0	1.5	1.0	0.0	0.0
11	15.0	12.5	14.0	9.0	5.5	7.5	3.0	1.0	2.0	0.0	0.0	0.0
12	14.5	11.5	13.5	7.5	6.0	6.5	3.5	2.5	3.0	0.5	0.0	0.0
13	11.5	9.0	10.5	8.5	5.0	7.0	4.0	2.5	3.0	0.0	0.0	0.0
14	13.0	8.0	10.5	8.5	6.5	7.5	4.0	2.5	3.0	0.0	0.0	0.0
15	12.5	8.5	10.5	8.5	6.5	7.0	4.0	2.5	3.5	0.0	0.0	0.0
16	11.5	6.5	9.0	8.0	3.5	6.5	3.5	2.5	3.5	0.0	0.0	0.0
17	12.0	8.5	9.5	7.0	2.0	4.0	4.0	0.0	3.5	0.0	0.0	0.0
18	11.0	7.5	9.5	7.5	2.5	4.5	7.0	0.5	5.0	0.0	0.0	0.0
19	10.0	8.0	9.5	7.0	4.5	6.0	5.0	3.5	4.0	0.0	0.0	0.0
20	10.5	7.0	9.0	7.5	3.5	5.5	3.5	1.5	2.5	0.0	0.0	0.0
21	11.0	9.5	10.0	6.0	3.5	5.0	2.0	1.0	1.5	0.0	0.0	0.0
22	9.5	8.5	9.0	5.5	4.0	5.0	1.5	0.5	1.0	0.0	0.0	0.0
23	10.5	8.5	9.5	6.0	4.0	5.0	1.0	0.0	0.5	0.0	0.0	0.0
24	11.0	9.0	10.0	5.0	3.0	4.0	2.0	0.0	0.5	0.0	0.0	0.0
25	11.0	7.5	9.0	5.0	0.5	2.5	1.5	0.0	0.5	0.0	0.0	0.0
26	10.0	9.0	9.5	3.5	0.0	1.5	2.0	0.0	0.5	0.0	0.0	0.0
27	9.5	7.0	8.5	3.0	0.0	1.0	2.0	0.0	1.5	0.0	0.0	0.0
28	10.0	8.5	9.5	3.5	0.0	2.0	3.0	1.0	2.0	0.0	0.0	0.0
29	10.0	8.0	10.0	5.5	3.5	4.5	4.0	1.0	3.0	0.0	0.0	0.0
30	9.5	5.5	7.5	4.5	0.0	2.0	4.5	2.5	4.0	0.0	0.0	0.0
31	7.5	4.5	6.5	---	---	---	3.0	0.5	2.0	1.0	0.0	0.0
MONTH	20.0	4.5	11.4	10.0	0.0	5.5	7.0	0.0	2.0	5.0	0.0	0.6

## 054064785 BLACK EARTH CREEK TRIBUTARY AT CROSS PLAINS, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	0.0	0.5	0.0	0.0	0.0	4.5	2.5	3.5	10.5	9.5	10.0
2	1.5	1.0	1.0	0.0	0.0	0.0	4.5	3.5	3.5	9.5	7.5	9.0
3	1.5	0.0	1.0	0.0	0.0	0.0	4.0	2.5	3.0	8.5	5.0	7.5
4	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	2.5	11.0	8.0	8.5
5	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	1.0	11.0	9.5	10.0
6	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	1.0	10.0	9.5	9.5
7	0.0	0.0	0.0	1.5	0.0	0.0	2.0	1.5	1.5	13.0	9.5	10.5
8	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	2.0	12.5	9.5	10.0
9	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	2.5	12.5	10.5	11.5
10	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	2.5	17.5	10.0	11.5
11	0.0	0.0	0.0	1.5	0.0	0.0	4.0	1.5	3.0	14.0	9.5	11.5
12	0.0	0.0	0.0	1.0	0.0	0.0	4.5	3.0	3.5	11.0	9.5	10.0
13	0.0	0.0	0.0	2.0	0.0	0.5	5.0	2.0	3.5	10.5	8.5	10.0
14	0.0	0.0	0.0	6.0	0.0	1.0	9.0	5.0	6.0	14.5	10.0	12.0
15	0.0	0.0	0.0	6.0	0.5	2.5	8.0	6.5	7.0	11.5	10.5	11.0
16	0.0	0.0	0.0	7.0	1.5	3.0	7.5	5.5	6.5	11.5	9.0	10.5
17	0.0	0.0	0.0	4.5	2.0	3.0	6.5	5.5	6.0	11.5	9.5	11.0
18	0.5	0.0	0.0	2.5	2.0	2.0	6.5	5.5	6.0	12.0	10.5	11.5
19	0.0	0.0	0.0	3.5	1.5	2.0	15.5	5.5	8.0	16.0	11.5	12.0
20	3.0	0.0	0.5	2.0	1.5	2.0	13.0	8.0	9.0	13.0	10.0	12.0
21	2.5	0.0	1.0	3.5	1.5	2.0	8.0	6.5	7.0	12.0	8.5	10.5
22	0.5	0.0	0.0	2.0	1.5	2.0	7.0	5.5	6.5	11.5	8.0	10.5
23	0.0	0.0	0.0	3.0	1.5	2.0	7.0	5.5	6.5	12.0	10.0	11.0
24	0.0	0.0	0.0	3.0	2.5	2.5	8.0	6.5	7.0	12.5	8.0	11.0
25	0.0	0.0	0.0	3.0	2.0	2.5	9.0	6.0	7.5	13.0	9.5	11.5
26	0.0	0.0	0.0	2.5	1.5	2.5	8.0	5.0	7.0	13.0	9.5	11.5
27	0.0	0.0	0.0	4.5	2.5	3.0	9.5	7.0	8.0	12.0	10.5	11.5
28	0.0	0.0	0.0	6.0	2.0	4.0	8.5	8.0	8.0	23.0	11.5	13.5
29	---	---	---	2.5	0.0	1.5	8.5	7.0	8.0	13.5	11.0	12.5
30	---	---	---	2.5	0.0	1.0	12.0	8.0	9.5	24.0	11.5	13.5
31	---	---	---	3.5	0.0	2.0	---	---	---	15.0	11.5	13.5
MONTH	3.0	0.0	0.1	7.0	0.0	1.3	15.5	0.0	5.2	24.0	5.0	11.0
	JUNE			JULY			AUGUST			SEPTEMBER		
1	13.0	10.0	12.0	17.5	15.0	16.5	18.5	18.0	18.5	18.5	15.5	17.5
2	12.5	10.5	12.0	23.5	15.5	17.0	30.5	17.0	19.0	19.0	14.5	17.0
3	13.0	11.5	12.0	23.5	16.5	18.0	20.0	17.5	18.5	20.0	16.0	18.0
4	13.0	11.5	12.0	23.0	17.5	18.5	19.5	17.0	18.5	19.0	15.5	17.5
5	13.0	11.0	12.5	24.0	18.0	19.0	19.0	17.0	18.0	18.5	15.0	16.5
6	18.0	12.5	14.0	26.5	18.0	19.5	19.0	18.0	18.5	19.0	16.0	17.5
7	13.5	13.0	13.5	22.5	18.5	19.5	19.5	17.0	18.5	19.0	16.5	18.0
8	22.5	13.0	15.0	22.0	17.5	19.0	19.0	17.5	18.5	18.5	17.5	18.0
9	14.0	12.5	13.5	18.5	17.5	18.0	18.5	16.5	17.5	18.5	17.5	18.0
10	14.5	13.5	14.0	20.0	17.0	18.0	19.0	16.5	17.5	18.5	18.0	18.5
11	14.5	13.5	14.0	18.5	16.5	17.5	19.0	17.5	18.0	19.0	18.0	18.5
12	14.5	13.5	14.0	18.0	15.5	17.0	19.0	17.5	18.5	23.0	18.0	20.0
13	14.5	13.5	14.0	18.0	15.5	17.0	19.0	16.5	18.0	22.5	18.5	20.5
14	15.0	13.5	14.5	18.5	16.5	17.5	19.0	17.5	18.0	19.5	16.0	18.0
15	15.0	14.0	14.5	23.0	17.5	18.5	19.0	18.0	18.5	17.5	14.5	16.0
16	15.0	13.0	14.0	23.0	16.0	17.5	28.0	18.5	19.5	18.0	15.0	16.5
17	15.0	13.0	14.0	19.0	17.0	18.0	20.5	18.0	19.5	19.0	15.5	17.0
18	23.0	14.5	15.5	18.5	16.5	18.0	19.5	17.5	18.5	18.0	16.5	17.5
19	21.5	13.0	15.5	18.0	15.0	16.5	19.0	18.0	18.5	17.5	13.5	16.0
20	15.5	12.0	14.0	18.5	17.0	18.0	26.0	18.5	20.0	17.0	12.0	14.5
21	15.5	13.0	14.0	24.5	18.0	19.5	21.0	19.5	20.5	18.5	14.5	16.5
22	15.5	13.5	14.5	19.5	16.5	18.0	20.0	18.0	19.0	17.0	14.5	16.0
23	16.0	14.5	15.5	18.0	15.0	17.0	20.0	17.5	19.0	15.5	12.5	14.5
24	22.5	15.5	17.0	18.5	16.0	17.0	20.5	18.0	19.5	16.0	13.0	15.0
25	30.0	16.5	18.5	19.0	16.0	18.0	20.0	19.5	19.5	14.5	12.0	13.5
26	18.5	15.5	17.0	19.0	18.0	18.5	20.0	19.0	19.5	15.0	13.0	14.0
27	18.0	15.0	16.5	19.5	18.5	19.0	20.5	18.0	19.5	13.5	12.0	13.0
28	21.5	16.5	18.5	18.5	17.5	18.0	25.0	18.0	20.0	14.0	12.0	13.5
29	17.5	16.0	17.0	18.5	16.5	18.0	21.0	19.5	20.0	13.5	10.0	12.0
30	17.0	15.0	16.0	19.0	18.0	18.5	20.0	17.5	19.0	13.0	8.5	11.0
31	---	---	---	19.0	18.0	18.5	19.0	16.5	18.0	---	---	---
MONTH	30.0	10.0	14.6	26.5	15.0	18.0	30.5	16.5	18.8	23.0	8.5	16.3

## 054064785 BLACK EARTH CREEK TRIBUTARY AT CROSS PLAINS, WI—Continued

## PRECIPITATION QUANTITY

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

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

REMARKS.--Gage established July 1998. Unpublished precipitation data from July 1998 to September 2002 available in District office.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 5.73 in., Aug. 2, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.20 in., Sept. 13.

PRECIPITATION, TOTAL, INCHES WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.10	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.42	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.10	0.00
3	0.02	0.00	0.00	0.00	0.01	0.00	0.15	0.00	0.00	0.00	0.00	0.00
4	1.15	0.00	0.00	0.00	0.00	0.00	0.01	0.10	0.00	0.20	0.00	0.00
5	0.00	0.08	0.00	0.05	0.00	0.01	0.00	0.30	0.00	0.30	0.00	0.00
6	0.07	0.00	0.00	0.00	0.01	0.00	0.06	0.00	0.20	1.30	0.00	0.00
7	0.01	0.00	0.00	0.00	0.00	0.05	0.01	0.40	0.00	0.30	0.00	0.00
8	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.20	0.80	0.30	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
10	0.00	0.03	0.00	0.00	0.00	0.00	0.00	1.10	0.00	0.10	0.00	0.00
11	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
12	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.70
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.70
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00
17	0.10	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.14	0.21	0.44	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00
19	0.00	0.01	0.00	0.00	0.00	0.13	0.27	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.01	0.19	0.00	0.00	0.00	0.10	0.00
21	0.00	0.06	0.00	0.00	0.00	0.05	0.10	0.00	0.00	0.70	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
24	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00
25	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.01	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
28	0.04	0.00	0.00	0.00	0.00	0.37	0.00	0.20	1.00	0.00	0.40	0.00
29	0.00	0.00	0.00	0.00	---	0.01	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	1.80	0.40	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.15	---	0.01	---	0.10	---	0.00	0.00	---
TOTAL	2.53	0.75	0.53	0.20	0.08	0.73	2.60	4.10	2.80	4.10	0.80	3.70



05406500 BLACK EARTH CREEK AT BLACK EARTH, WI

LOCATION.--Lat 43°08'03", long 89°43'56" in SW ¼ sec.25, T.8 N., R.6 E., Dane County, Hydrologic Unit 07070005, on right bank, 0.8 mi east of Black Earth and 2.1 mi upstream from Vermont Creek.

DRAINAGE AREA.--45.6 mi<sup>2</sup>, of which 2.8 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--February 1954 to current year.

REVISED RECORDS.--WDR WI-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 812.95 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges and May 1 to Sept. 30, which are fair (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	33	32	32	29	27	31	89	32	25	25	23
2	34	33	32	31	29	27	31	52	29	24	25	22
3	38	32	31	32	29	27	31	42	29	24	24	21
4	60	32	32	31	29	27	32	37	28	25	24	19
5	56	32	32	31	29	27	33	39	27	26	25	19
6	47	32	32	31	29	27	30	38	27	40	24	17
7	43	33	32	31	28	27	30	39	28	37	23	16
8	40	33	31	31	28	27	30	40	29	35	24	17
9	37	33	31	31	28	27	31	52	31	33	24	17
10	35	33	32	31	27	27	35	49	29	32	23	16
11	34	36	32	30	e27	27	35	127	28	32	23	15
12	34	36	32	31	e27	27	34	78	28	30	24	17
13	34	35	32	30	27	28	32	61	27	28	23	33
14	34	36	32	30	27	45	31	59	26	28	23	65
15	34	35	33	29	26	62	30	60	26	45	23	44
16	34	35	32	30	26	46	29	52	25	35	23	36
17	33	33	33	29	26	42	29	47	25	32	23	32
18	34	33	37	29	26	36	28	45	25	31	22	28
19	34	33	40	29	26	34	27	42	26	30	21	28
20	33	33	38	29	28	34	30	40	25	29	20	28
21	33	32	36	28	34	34	31	39	24	38	20	27
22	32	33	35	e27	32	33	28	37	24	33	20	27
23	32	33	34	e27	28	32	26	36	24	31	19	27
24	32	33	34	e27	27	33	26	35	25	30	18	26
25	35	32	33	e27	e27	33	25	34	25	27	19	25
26	37	31	33	e27	27	32	24	32	25	26	19	25
27	36	31	32	e27	27	30	23	32	24	26	18	25
28	35	31	32	e27	27	33	23	32	29	26	18	25
29	34	31	32	e28	---	34	22	32	28	25	22	24
30	32	31	32	28	---	32	27	33	26	25	20	23
31	32	---	32	29	---	30	---	34	---	24	22	---
TOTAL	1,132	989	1,023	910	780	1,007	874	1,464	804	932	681	767
MEAN	36.5	33.0	33.0	29.4	27.9	32.5	29.1	47.2	26.8	30.1	22.0	25.6
MAX	60	36	40	32	34	62	35	127	32	45	25	65
MIN	32	31	31	27	26	27	22	32	24	24	18	15
CFSM	0.85	0.77	0.77	0.69	0.65	0.76	0.68	1.10	0.63	0.70	0.51	0.60
IN.	0.98	0.86	0.89	0.79	0.68	0.88	0.76	1.27	0.70	0.81	0.59	0.67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
	31.8	51.5	(1999)	15.9	(1967)
	32.9	70.2	(1986)	16.1	(1967)
	30.4	48.0	(1988)	14.8	(1965)
	29.3	51.6	(1974)	15.1	(1959)
	33.6	64.9	(1994)	16.0	(1959)
	47.7	85.3	(1961)	16.9	(1968)
	42.6	86.5	(1993)	22.5	(1957)
	38.9	91.2	(1973)	18.7	(1965)
	39.0	119	(2000)	14.4	(1965)
	36.9	140	(1993)	14.0	(1965)
	33.1	104	(2001)	15.5	(1958)
	32.8	66.0	(1980)	15.3	(1958)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1954 - 2003
ANNUAL TOTAL	15,130	11,363	
ANNUAL MEAN	41.5	31.1	35.8
HIGHEST ANNUAL MEAN			61.0
LOWEST ANNUAL MEAN			19.8
HIGHEST DAILY MEAN	189	127	1,230
LOWEST DAILY MEAN	29	15	12
ANNUAL SEVEN-DAY MINIMUM	30	16	13
MAXIMUM PEAK FLOW		179	(b)1,750
MAXIMUM PEAK STAGE		2.88	7.08
INSTANTANEOUS LOW FLOW			(c)4.8
ANNUAL RUNOFF (CFSM)	0.97	0.73	0.84
ANNUAL RUNOFF (INCHES)	13.15	9.88	11.37
10 PERCENT EXCEEDS	52	38	52
50 PERCENT EXCEEDS	38	31	31
90 PERCENT EXCEEDS	32	23	19

(a) Also occurred July 26, 29, 1965

(b) Gage height, 6.58 ft

(c) Result of freezeup

(e) Estimated due to ice effect or missing record

## 05407000 WISCONSIN RIVER AT MUSCODA, WI

LOCATION.--Lat 43°11'53", long 90°26'36", in SE ¼ NW ¼ sec.1, T.8 N., R.1 W., Grant County, Hydrologic Unit 07070005, on left bank at bridge on State Highway 80, 0.5 mi upstream from Eagle Mill Creek and 1.0 mi north of Muscoda.

DRAINAGE AREA.--10,400 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1902 to December 1903, gage height and discharge measurements only, October 1913 to current year. Monthly discharge for October and November 1913 published in WSP 1308. Gage-height records collected at same site November 1908 to December 1912 are contained in reports of U. S. Weather Bureau.

REVISED RECORDS.--WSP 785: 1921(M). WSP 875: 1921. WSP 1308: 1915(M), 1917-18(M), 1920-21(M), 1924(M). WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 666.77 ft above NGVD of 1929. Prior to Nov. 22, 1929, nonrecording gage on bridge 200 ft upstream at same datum. Nov. 22, 1929, to Mar. 15, 1930, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges and Apr. 3-15 and 20-27, which are fair (see page 11). Flow regulated by 24 reservoirs and many powerplants upstream from station. In 1938 when the maximum of record occurred, there were 21 reservoirs upstream from station, the two large reservoirs, Petenwell and Castle Rock were not yet in existence. Usually flows less than 20 ft<sup>3</sup>/s were diverted out of the basin through Portage Canal to the Fox River throughout the year. Gage-height telemeter and data-collection platform at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,670	12,300	6,910	6,900	e4,600	e5,200	9,890	14,000	8,090	5,890	4,130	3,950
2	7,550	11,600	5,450	7,350	e5,200	e5,300	10,900	13,900	8,120	5,920	4,380	4,040
3	8,860	10,900	6,850	6,940	e7,000	e4,300	11,100	13,300	8,220	4,880	5,170	4,050
4	9,750	9,600	6,450	6,900	e7,400	e4,500	8,970	11,800	7,800	4,770	5,040	4,080
5	10,600	8,860	6,400	6,440	e6,000	e4,800	10,600	10,100	8,300	4,980	5,300	4,110
6	11,800	8,810	6,730	6,720	e6,800	e3,800	9,200	8,090	7,880	5,570	4,150	3,990
7	16,400	8,860	6,900	6,140	e7,100	e4,000	8,400	10,000	7,490	5,740	4,770	3,250
8	19,300	8,280	6,940	6,420	e6,100	e4,600	8,220	11,100	8,820	5,670	6,290	3,130
9	20,300	8,640	7,220	7,380	e5,800	e3,800	6,660	12,800	7,160	5,560	6,100	2,560
10	19,600	7,850	7,980	7,420	e4,800	e3,700	6,240	17,400	8,360	5,890	4,660	2,780
11	20,100	8,820	8,340	7,940	e5,700	e5,000	6,740	19,100	8,280	5,920	3,790	2,760
12	20,700	8,330	7,780	e5,500	e6,600	e5,200	6,740	18,800	9,930	5,900	3,940	3,600
13	18,600	8,510	6,970	e3,000	e6,000	e4,300	6,820	22,200	13,000	5,790	4,300	4,070
14	15,500	8,790	6,450	e7,900	e5,000	e3,600	7,290	25,900	17,400	5,170	4,400	4,630
15	13,700	8,190	6,780	e7,700	e6,500	e4,000	6,980	30,100	15,300	5,040	4,270	6,190
16	11,800	8,320	6,800	e7,200	e5,800	e5,000	7,420	35,300	12,900	5,790	3,460	4,950
17	11,700	8,260	7,400	e7,000	e6,500	e3,800	8,700	40,500	8,890	5,840	3,550	4,510
18	12,000	8,250	7,530	e6,300	e4,700	e8,400	9,570	37,200	7,290	6,400	3,650	4,440
19	11,800	7,770	7,610	e7,000	e5,500	9,130	16,300	21,400	7,160	5,220	4,400	4,170
20	11,100	6,870	6,860	e6,100	e4,700	9,020	21,500	16,400	6,820	4,500	3,480	3,550
21	9,080	7,220	7,390	e5,800	e4,500	9,890	26,000	15,500	5,900	4,700	3,680	3,600
22	8,970	7,510	7,450	e6,400	e5,400	10,900	31,000	16,100	5,720	4,950	3,560	3,680
23	8,930	7,780	7,830	e6,500	e4,300	11,500	32,800	14,400	5,180	4,320	3,970	4,640
24	9,000	6,770	8,080	e7,000	e4,800	12,600	32,200	14,300	4,760	4,340	3,370	4,390
25	10,200	8,030	7,460	e5,500	e5,300	12,600	30,800	13,200	4,830	4,470	3,570	4,010
26	8,710	7,180	8,630	e6,800	e5,200	11,000	30,100	12,600	5,640	4,190	3,800	3,900
27	10,200	7,380	7,820	e7,000	e4,300	11,000	22,800	10,000	4,960	4,150	3,360	3,670
28	9,980	7,570	8,210	e5,100	e4,400	11,400	18,500	10,200	5,700	4,770	3,830	3,570
29	11,100	6,070	7,210	e6,800	---	10,600	15,100	8,340	6,130	3,800	3,780	4,210
30	11,500	7,410	7,030	e6,400	---	8,240	13,800	8,130	5,720	4,070	4,130	3,640
31	11,800	---	7,420	e4,300	---	9,530	---	7,570	---	3,990	3,640	---
TOTAL	387,300	250,730	224,880	201,850	156,000	220,710	441,340	519,730	241,750	158,190	129,920	118,120
MEAN	12,490	8,358	7,254	6,511	5,571	7,120	14,710	16,770	8,058	5,103	4,191	3,937
MAX	20,700	12,300	8,630	7,940	7,400	12,600	32,800	40,500	17,400	6,400	6,290	6,190
MIN	6,670	6,070	5,450	3,000	4,300	3,600	6,240	7,570	4,760	3,800	3,360	2,560

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	MIN
(WY)	(1987)	(1986)	(1966)
(WY)	(1977)	(1977)	(1977)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1914 - 2003
ANNUAL TOTAL	3,922,040	3,050,520	
ANNUAL MEAN	10,750	8,358	8,743
HIGHEST ANNUAL MEAN			16,030
LOWEST ANNUAL MEAN			4,145
HIGHEST DAILY MEAN	40,800	Apr 19	79,500
LOWEST DAILY MEAN	(a)4,500	Jan 1,21	1,460
ANNUAL SEVEN-DAY MINIMUM	5,700	Aug 7	1,900
MAXIMUM PEAK FLOW			80,800
MAXIMUM PEAK STAGE		8.18	11.48
10 PERCENT EXCEEDS	19,600	14,100	15,300
50 PERCENT EXCEEDS	8,440	6,900	6,930
90 PERCENT EXCEEDS	6,210	3,960	3,970

(a) Ice affected

(e) Estimated due to ice effect or missing record

054070396 FENNIMORE FORK AT HOMER ROAD NEAR CASTLE ROCK, WI

LOCATION.--Lat 43°02'16" (revised), long 90°33'40", in NE ¼ SW ¼ sec.36, T.7 N., R.2 W., Grant County, Hydrologic Unit 07070005, on right bank just downstream from bridge on Homer Road, 1.7 mi southwest of Castle Rock, and 6.2 mi northeast of Fennimore.

DRAINAGE AREA.--21.7 mi<sup>2</sup>.

PERIOD OF RECORD.--July 2001 to June 2003 (discontinued).

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

REMARKS.--Records good except those for Jan. 21 to Feb. 4 and Feb. 20 to Mar. 3, which are fair (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	3.0	2.0	1.8	0.75	0.95	0.91	2.4	0.81	---	---	---
2	5.2	3.1	2.7	2.2	0.77	0.96	0.88	0.68	0.81	---	---	---
3	4.9	3.2	1.9	1.9	0.83	0.82	0.91	0.40	0.89	---	---	---
4	8.0	3.2	2.2	2.3	0.91	0.88	0.84	0.34	0.84	---	---	---
5	4.8	3.3	2.2	2.4	0.89	0.84	0.89	0.78	0.73	---	---	---
6	4.2	3.2	1.6	2.3	0.91	0.84	0.89	0.53	0.76	---	---	---
7	3.7	3.0	1.7	2.3	0.82	0.83	0.74	7.6	1.0	---	---	---
8	3.9	3.1	2.0	2.4	0.92	0.80	0.63	3.9	1.8	---	---	---
9	3.8	3.0	1.5	2.3	0.84	0.66	0.62	6.7	1.2	---	---	---
10	3.8	3.1	1.6	1.8	0.83	0.61	0.68	3.6	0.91	---	---	---
11	3.7	3.3	1.9	0.90	0.77	0.80	0.47	7.0	0.80	---	---	---
12	3.5	2.9	2.1	1.4	0.75	11	0.40	5.1	0.79	---	---	---
13	3.4	2.9	2.1	1.8	0.75	15	0.40	3.6	0.77	---	---	---
14	3.4	2.9	2.2	1.9	0.75	16	0.37	4.2	0.69	---	---	---
15	3.5	2.9	2.2	1.7	0.75	12	0.44	3.2	0.64	---	---	---
16	3.4	3.0	2.2	1.7	0.72	6.7	0.40	2.5	0.63	---	---	---
17	3.6	2.9	2.2	1.6	0.70	4.0	0.37	2.2	0.64	---	---	---
18	3.7	3.0	4.2	1.3	0.75	2.2	0.42	1.9	0.69	---	---	---
19	3.3	3.0	3.1	1.2	0.86	1.2	0.59	1.7	0.65	---	---	---
20	3.3	3.0	2.4	1.2	15	1.6	0.91	1.6	0.60	---	---	---
21	3.2	3.0	2.2	1.1	12	1.2	0.89	1.4	0.68	---	---	---
22	3.0	2.9	2.2	0.95	4.3	0.98	0.70	1.3	0.70	---	---	---
23	2.9	2.9	1.9	0.68	1.6	0.79	0.61	1.4	0.74	---	---	---
24	3.2	2.8	1.8	0.59	1.2	0.66	0.60	1.2	1.4	---	---	---
25	4.5	2.5	2.1	0.62	0.80	0.44	0.61	1.1	1.1	---	---	---
26	3.9	2.6	1.8	0.56	0.96	0.37	0.62	0.98	1.6	---	---	---
27	3.2	2.6	2.0	0.44	0.90	0.41	0.54	0.92	0.95	---	---	---
28	3.5	2.5	2.2	0.44	0.89	0.79	0.47	0.91	1.9	---	---	---
29	3.2	3.1	2.3	0.46	---	0.61	0.38	0.80	1.3	---	---	---
30	3.1	2.5	2.6	0.52	---	0.59	0.99	0.94	0.89	---	---	---
31	3.1	---	2.2	0.69	---	0.80	---	0.86	---	---	---	---
TOTAL	117.5	88.4	67.3	43.45	52.92	86.33	19.17	71.74	27.91	---	---	---
MEAN	3.79	2.95	2.17	1.40	1.89	2.78	0.64	2.31	0.93	---	---	---
MAX	8.0	3.3	4.2	2.4	15	16	0.99	7.6	1.9	---	---	---
MIN	2.9	2.5	1.5	0.44	0.70	0.37	0.37	0.34	0.60	---	---	---
CFSM	0.17	0.14	0.10	0.06	0.09	0.13	0.03	0.11	0.04	---	---	---
IN.	0.20	0.15	0.12	0.07	0.09	0.15	0.03	0.12	0.05	---	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	4.52	3.68	3.01	1.92	3.06	3.85	3.08	4.98	7.23	9.37	5.69	5.53
MAX	5.24	4.42	3.85	2.43	4.24	4.92	5.51	7.64	13.5	9.58	6.04	6.73
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2001)	(2001)	(2001)
MIN	3.79	2.95	2.17	1.40	1.89	2.78	0.64	2.31	0.93	9.17	5.35	4.34
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR  
(OCTOBER-JUNE)

WATER YEARS 2001 - 2003  
(JULY 2001-JUNE 2003)

ANNUAL TOTAL	2,007.9		574.72			
ANNUAL MEAN	5.50		2.11		4.67	
HIGHEST ANNUAL MEAN					7.46	
LOWEST ANNUAL MEAN					2.11	
HIGHEST DAILY MEAN	70	Jun 4	16	Mar 14	70	Jun 4, 2002
LOWEST DAILY MEAN	1.5	Dec 9	0.34	May 4	0.34	May 4, 2003
ANNUAL SEVEN-DAY MINIMUM	1.8	Dec 6	0.40	Apr 12	0.40	Apr 12, 2003
MAXIMUM PEAK FLOW			69	Feb 20	202	Jul 6, 2002
MAXIMUM PEAK STAGE			6.63	Feb 20	7.85	Jul 6, 2002
INSTANTANEOUS LOW FLOW			0.28	May 4	0.28	May 4, 2003
ANNUAL RUNOFF (CFSM)	0.25		0.097		0.22	
ANNUAL RUNOFF (INCHES)	3.44		0.99		2.92	
10 PERCENT EXCEEDS	8.4		3.7		8.6	
50 PERCENT EXCEEDS	4.1		1.5		4.0	
90 PERCENT EXCEEDS	2.2		0.60		0.80	

## 05407470 KICKAPOO RIVER AT HWY 33 AT ONTARIO, WI

LOCATION.--Lat 43°43'18", long 90°35'15", IN SW ¼ NW ¼ sec.2, T.14 N., R.2 W., Vernon County, Hydrologic Unit 07070006, on right bank 85 ft downstream from Highway 33 bridge at Ontario.

DRAINAGE AREA.--117 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 850 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges and October to mid-November during bridge construction, which are fair (see page 11). Recorded gage heights are available from June 15, 2001 to Sept. 30, 2001. Sediment loads are available from November 1972 to Sept. 1973. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	50	50	e46	e48	e35	64	67	47	40	41	38
2	54	49	50	e45	e48	e34	65	54	46	40	39	37
3	66	49	e50	e45	e48	e34	63	51	46	55	38	36
4	195	50	e50	46	e47	e33	60	51	45	59	40	34
5	80	52	e49	44	e46	e33	58	78	43	55	37	34
6	69	55	e48	42	e45	e33	55	68	43	71	37	34
7	62	53	48	43	e43	e32	57	71	46	60	44	34
8	61	53	e47	44	e43	e33	57	67	57	50	37	33
9	59	53	e46	43	e43	e33	62	161	47	50	36	33
10	60	54	46	43	e43	e33	61	82	51	65	35	32
11	59	52	47	e41	e43	e33	60	244	47	54	34	33
12	56	50	48	e42	e42	e32	60	206	43	48	34	49
13	55	50	48	e43	e40	e34	58	93	42	46	33	53
14	54	50	49	e43	e40	e200	59	88	40	45	32	58
15	54	49	48	e43	e40	869	60	89	38	53	32	45
16	53	48	46	e43	e40	498	94	68	37	47	32	41
17	53	48	46	e43	e40	234	76	62	36	44	31	39
18	58	48	55	e43	e40	113	67	57	37	43	31	37
19	56	49	56	e43	e43	79	99	56	38	42	31	47
20	53	49	52	e43	e55	85	260	62	36	42	31	41
21	60	49	49	e42	e130	101	118	53	36	43	30	40
22	60	48	49	e41	e180	82	87	51	35	42	29	53
23	55	49	48	e40	e60	74	74	51	36	40	29	43
24	54	48	e48	e40	e47	74	69	49	44	41	30	40
25	59	47	e47	e40	e43	68	65	48	44	41	34	37
26	63	45	e48	e40	e38	64	62	47	46	41	42	37
27	57	49	e48	e40	e36	104	58	47	41	41	33	38
28	56	53	49	e40	e35	126	55	49	45	40	53	37
29	54	49	48	e41	---	84	53	47	48	39	303	37
30	53	47	49	e45	---	66	60	52	40	40	45	36
31	51	---	47	e46	---	63	---	52	---	40	40	---
TOTAL	1,935	1,495	1,509	1,323	1,446	3,416	2,196	2,321	1,280	1,457	1,373	1,186
MEAN	62.4	49.8	48.7	42.7	51.6	110	73.2	74.9	42.7	47.0	44.3	39.5
MAX	195	55	56	46	180	869	260	244	57	71	303	58
MIN	51	45	46	40	35	32	53	47	35	39	29	32
CFSM	0.53	0.43	0.42	0.36	0.44	0.94	0.63	0.64	0.36	0.40	0.38	0.34
IN.	0.62	0.48	0.48	0.42	0.46	1.09	0.70	0.74	0.41	0.46	0.44	0.38

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003
MEAN	60.2	54.1	53.4	48.0	62.0	99.6	84.2	72.4	70.3	56.7	49.7	46.5
MAX	62.4	58.4	58.1	53.3	72.3	110	95.1	74.9	98.0	66.3	55.0	53.4
(WY)	(2003)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(2003)	(2002)	(2002)	(2002)	(2002)
MIN	58.0	49.8	48.7	42.7	51.6	89.0	73.2	69.8	42.7	47.0	44.3	39.5
(WY)	(2002)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2003)	(2003)	(2003)	(2003)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	24,694		20,937			
ANNUAL MEAN	67.7		57.4		63.1	
HIGHEST ANNUAL MEAN					68.8	
LOWEST ANNUAL MEAN					57.4	
HIGHEST DAILY MEAN	392	Jun 21	869	Mar 15	869	Mar 15, 2003
LOWEST DAILY MEAN	41	Jul 28	29	Aug 22,23	29	Aug 22,23, 2003
ANNUAL SEVEN-DAY MINIMUM	45	Sep 4	30	Aug 18	30	Aug 18, 2003
MAXIMUM PEAK FLOW			1,950	Mar 15	1,950	Mar 15, 2003
MAXIMUM PEAK STAGE			16.24	Mar 15	16.24	Mar 15, 2003
INSTANTANEOUS LOW FLOW			28	Jan 10	(a)28	Jan 10, 2003
ANNUAL RUNOFF (CFSM)	0.58		0.49		0.54	
ANNUAL RUNOFF (INCHES)	7.85		6.66		7.32	
10 PERCENT EXCEEDS	92		70		87	
50 PERCENT EXCEEDS	57		48		54	
90 PERCENT EXCEEDS	46		35		40	

(a) Also occurred Sept. 4, 2002, result of bridge construction

(e) Estimated due to ice effect or missing record

05408000 KICKAPOO RIVER AT LA FARGE, WI

LOCATION.--Lat 43°34'27", long 90°38'35", in NE ¼ SW ¼ sec.29, T.13 N., R.2 W., Vernon County, Hydrologic Unit 07070006, on left bank 10 ft upstream from bridge on State Highway 82, in La Farge, 0.3 mi upstream from Otter Creek, and 1.3 mi downstream from powerplant.

DRAINAGE AREA.--266 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WSP 1388: 1951(M), 1954(M), WSP 1438: 1944-45(M), 1946, 1948, 1950(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 781.54 ft above NGVD of 1929. Prior to Dec. 4, 1939, nonrecording gage on highway bridge at same datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	161	143	e240	e130	e100	e120	192	227	150	120	104	117
2	153	142	e200	e130	e100	e120	194	191	144	117	102	111
3	177	142	e180	e130	e110	e120	191	172	146	130	101	107
4	337	143	e180	e130	e110	e120	187	166	143	162	108	105
5	370	146	e180	e130	e110	e120	180	197	137	166	104	103
6	212	155	e190	e130	e100	e120	179	224	137	179	102	101
7	194	149	e200	e130	e100	e120	181	208	152	214	107	99
8	177	147	e180	e130	e100	e120	179	228	172	154	104	96
9	169	148	e170	e120	e100	e120	192	395	174	149	100	94
10	163	148	e170	e120	e100	e120	192	321	181	196	98	91
11	167	157	e160	e120	e100	e120	189	435	174	179	96	91
12	160	146	e160	e120	e100	e120	188	649	155	158	95	100
13	155	143	e160	e110	e100	e130	184	333	148	139	95	150
14	148	142	e160	e110	e100	e150	184	284	137	130	93	147
15	149	140	e150	e110	e100	e400	188	302	129	129	93	132
16	146	139	e150	e110	e100	e1,100	206	246	124	133	94	110
17	144	138	e150	e110	e100	788	243	220	121	124	94	103
18	148	137	e150	e110	e100	386	211	206	121	120	93	97
19	153	138	e150	e110	e110	253	223	198	123	116	90	111
20	144	140	e150	e110	e120	245	481	206	118	114	90	116
21	149	141	e140	e110	e150	283	351	190	117	119	97	104
22	162	140	e140	e110	e240	253	269	178	116	117	94	130
23	147	139	e130	e110	e160	224	229	174	115	115	93	125
24	144	139	e130	e100	e130	219	211	168	128	113	94	110
25	154	137	e130	e100	e120	209	201	164	135	110	97	104
26	174	128	e130	e100	e120	195	191	159	133	109	111	101
27	158	144	e130	e100	e120	230	183	155	126	109	108	106
28	154	158	e150	e100	e120	316	177	153	143	106	99	106
29	150	153	e140	e100	---	282	171	154	146	103	394	102
30	148	145	e130	e100	---	208	178	156	129	101	170	100
31	145	---	e130	e100	---	193	---	163	---	101	125	---
TOTAL	5,312	4,307	4,910	3,530	3,220	7,504	6,325	7,222	4,174	4,132	3,445	3,269
MEAN	171	144	158	114	115	242	211	233	139	133	111	109
MAX	370	158	240	130	240	1,100	481	649	181	214	394	150
MIN	144	128	130	100	100	120	171	153	115	101	90	91
CFSM	0.64	0.54	0.60	0.43	0.43	0.91	0.79	0.88	0.52	0.50	0.42	0.41
IN.	0.74	0.60	0.69	0.49	0.45	1.05	0.88	1.01	0.58	0.58	0.48	0.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
	146	153	(1960)	73.4	(1959)
	317	337	(1983)	78.5	(1940)
	133	336	(1985)	62.0	(1959)
	127	421	(1946)	61.3	(1959)
	159	499	(1966)	62.2	(1959)
	298	761	(1961)	114	(1957)
	274	723	(1965)	126	(1942)
	197	580	(1973)	80.4	(1958)
	197	445	(1947)	80.9	(1958)
	164	838	(1978)	77.8	(1958)
	144	446	(1980)	60.4	(1958)
	159	539	(1965)	72.7	(1940)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1939 - 2003
ANNUAL TOTAL	63,083	57,350	
ANNUAL MEAN	173	157	179
HIGHEST ANNUAL MEAN			282
LOWEST ANNUAL MEAN			97.1
HIGHEST DAILY MEAN	559	(a)1,100	7,730
LOWEST DAILY MEAN	(a)120	(b)Jan 30	36
ANNUAL SEVEN-DAY MINIMUM	(a)124	Jan 27	(a)49
MAXIMUM PEAK FLOW		1,680	14,300
MAXIMUM PEAK STAGE		9.80	14.92
ANNUAL RUNOFF (CFSM)	0.65	0.59	0.67
ANNUAL RUNOFF (INCHES)	8.82	8.02	9.15
10 PERCENT EXCEEDS	230	216	260
50 PERCENT EXCEEDS	155	140	135
90 PERCENT EXCEEDS	130	100	88

(a) Ice affected  
 (b) Also occurred Jan. 31 to Feb. 2 and Feb. 13  
 (c) Estimated due to ice effect or missing record

## 05410490 KICKAPOO RIVER AT STEUBEN, WI

LOCATION.--Lat 43°10'58", long 90°51'30", in NE ¼ SW ¼ sec.9, T.8 N., R.4 W., Crawford County, Hydrologic Unit 07070006, on right bank at upstream corner of town road bridge at Steuben and 18.6 mi upstream from mouth.

DRAINAGE AREA.--687 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1933 to current year. Prior to October 1982, all records published under station number 05410500.

REVISED RECORDS.--WSP 855: Drainage area. WSP 1438: 1933-38. WDR WI-79-1: 1978(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 657.00 ft above NGVD of 1929. May 1933 to Oct. 19, 1938, nonrecording gage at same site at datum 1.7 ft higher. Oct. 20, 1938 to September 1982, recording gage at site 1.2 mi downstream at datum 0.36 ft higher.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	554	469	440	430	e340	e380	526	566	437	393	343	364
2	505	465	425	402	e340	e380	513	555	433	375	335	335
3	496	462	431	e400	e340	e380	511	531	423	380	333	326
4	535	461	431	e400	e340	e380	509	487	419	405	333	319
5	616	463	455	e400	e340	e380	503	488	416	439	337	315
6	762	468	537	e400	e340	e380	493	495	414	463	339	312
7	636	471	593	e400	e340	e380	490	547	420	487	333	310
8	562	473	536	e400	e340	e380	491	557	444	505	330	308
9	538	469	497	e400	e340	e380	490	621	465	469	331	304
10	522	469	502	e400	e340	e380	502	733	466	437	326	301
11	514	482	488	e400	e340	e380	509	899	452	446	322	298
12	509	490	490	e400	e340	e380	501	898	462	477	319	301
13	502	480	479	e390	e340	e380	493	1,030	441	436	316	324
14	491	466	470	e380	e340	e420	485	889	425	414	315	370
15	486	461	451	e370	e340	e600	481	768	413	396	315	390
16	482	454	441	e370	e340	e1,000	484	727	401	384	313	374
17	480	449	435	e360	e340	1,360	494	660	390	382	310	345
18	479	445	439	e360	e340	1,400	526	601	384	377	306	324
19	481	446	455	e350	e340	1,160	528	570	380	366	304	332
20	482	445	481	e350	e350	721	584	551	375	359	302	335
21	478	448	472	e350	e390	616	759	540	371	358	301	339
22	472	447	451	e340	e500	622	797	525	366	357	299	337
23	478	446	439	e330	e580	610	648	502	365	355	298	341
24	485	444	410	e330	e480	571	577	488	369	350	296	354
25	483	441	387	e320	e430	549	540	478	392	345	302	337
26	493	437	e380	e320	e410	535	516	467	423	342	318	324
27	504	430	e380	e320	e400	534	498	456	396	342	312	321
28	507	404	e390	e320	e390	570	484	448	413	341	317	319
29	493	426	e420	e320	---	653	472	441	408	338	332	318
30	485	458	450	e320	---	649	481	438	407	334	342	313
31	477	---	442	e330	---	571	---	439	---	333	517	---
TOTAL	15,987	13,669	14,097	11,362	10,390	18,081	15,885	18,395	12,370	12,185	10,096	9,890
MEAN	516	456	455	367	371	583	530	593	412	393	326	330
MAX	762	490	593	430	580	1,400	797	1,030	466	505	517	390
MIN	472	404	380	320	340	380	472	438	365	333	296	298
CFSM	0.75	0.66	0.66	0.53	0.54	0.85	0.77	0.86	0.60	0.57	0.47	0.48
IN.	0.87	0.74	0.76	0.62	0.56	0.98	0.86	1.00	0.67	0.66	0.55	0.54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2003, BY WATER YEAR (WY)

	MEAN	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	422	438	385	363	427	764	703	533	524	491	429	453
MAX	798	858	781	846	1,276	1,856	1,748	1,415	1,480	1,901	1,180	1,331
(WY)	(1973)	(1983)	(1985)	(1946)	(1966)	(1946)	(1959)	(1973)	(2000)	(1978)	(1935)	(1938)
MIN	206	222	172	172	184	252	351	228	223	189	188	199
(WY)	(1959)	(1938)	(1959)	(1959)	(1959)	(1934)	(1942)	(1934)	(1934)	(1936)	(1936)	(1937)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1933 - 2003	
ANNUAL TOTAL	193,030		162,407			
ANNUAL MEAN	529		445		495	
HIGHEST ANNUAL MEAN					792	
LOWEST ANNUAL MEAN					273	
HIGHEST DAILY MEAN	1,150	May 9	1,400	Mar 18	12,600	Jul 3, 1978
LOWEST DAILY MEAN	(a)380	Dec 26,27	296	Aug 24	(a)165 (b)Dec 10-20,	1958
ANNUAL SEVEN-DAY MINIMUM	(a)401	Dec 23	300	Aug 19	(a)165	Dec 10, 1958
MAXIMUM PEAK FLOW			1,410	Mar 17	16,500	Jul 3, 1978
MAXIMUM PEAK STAGE			11.11	Mar 17	(c)14.81	Jul 3, 1978
INSTANTANEOUS LOW FLOW			294	Aug 24	(c)161	Aug 9, 1936
ANNUAL RUNOFF (CFSM)	0.77		0.65		0.72	
ANNUAL RUNOFF (INCHES)	10.45		8.79		9.80	
10 PERCENT EXCEEDS	667		564		747	
50 PERCENT EXCEEDS	496		430		412	
90 PERCENT EXCEEDS	438		322		265	

(a) Ice affected

(b) Also occurred Jan. 4-9, Feb. 5-7, 1959, ice affected

(c) Site and datum then in use

(e) Estimated due to ice effect or missing record

The 24 reservoirs listed below are used to stabilize the flow of the Wisconsin and Tomahawk Rivers for power generation and are also used for recreational purposes. The first 21 reservoirs are owned and operated by the Wisconsin Valley Improvement Co., which furnishes the gage heights and capacity tables. Revised capacity tables for all 21 reservoirs were received from the Company in April 1957 and were used to compute month-end usable contents beginning Sept. 30, 1955. Another revised capacity table for Burnt Rollways Reservoir was used to compute month-end usable contents beginning Sept. 30, 1964. Lake Dubai is owned by the Consolidated Water Power Co. Petenwell and Castle Rock are owned and operated by the Wisconsin River Power Co., which furnished the gage heights and capacity tables for those two reservoirs. Month-end contents are computed by the U.S. Geological Survey. The usable capacity of these reservoirs is usually less in summer than in winter because the allowable summer drawdown is limited by the Department of Natural Resources in the interest of riparian property owners. There are occasionally formal or informal changes in capacity and in minimum drawdown levels. Usable capacity figures listed below are for winter regulation.

- 05390100 Lac Vieux Desert on Wisconsin River, lat 46°07'18", long 89°09'07", in SE 1/4 NW 1/4 sec.17, T.42 N., R.11 E., Vilas County, 4.8 mi northwest of Phelps, used as a reservoir since 1908, has a usable capacity of 652,000,000 ft<sup>3</sup>. Drainage area, 34.4 mi<sup>2</sup>.
- 05390150 Twin Lakes on Twin River, lat 46°01'20", long 89°10'05", in SW 1/4 NE 1/4 sec.19, T.41 N., R.11 E., Vilas County, 5.0 mi southwest of Phelps, used as a reservoir since 1908, has a usable capacity of 313,000,000 ft<sup>3</sup>. Drainage area, 26 mi<sup>2</sup>.
- 05390200 Buckatabon Lakes on Buckatabon Creek, lat 46°01'18", long 89°18'40", in SE 1/4 NE 1/4 sec.24, T.41 N., R.9 E., Vilas County, 3.3 mi southwest of Conover, used as a reservoir since 1908, has a usable capacity of 130,000,000 ft<sup>3</sup>. Drainage area, 16.9 mi<sup>2</sup>.
- 05390250 Sevenmile Lake on Sevenmile Creek, lat 45°52'30", long 89°04'07", in SE 1/4 NE 1/4 sec.11, T.39 N., R.11 E., Oneida County, 9.1 mi southeast of town of Eagle River, used as a reservoir since 1908, has a usable capacity of 93,000,000 ft<sup>3</sup>. Drainage area, 12.1 mi<sup>2</sup>.
- 05390300 Lower Ninemile Lake on Ninemile Creek, lat 45°53'37", long 89°07'15", in NE 1/4 NW 1/4 sec.4, T.39 N., R.11 E., Oneida County, 6.6 mi southeast of town of Eagle River, used as a reservoir since 1908, has a usable capacity of 121,000,000 ft<sup>3</sup>. Drainage area, 28.8 mi<sup>2</sup>.
- 05390350 Burnt Rollways Reservoir on Eagle River, lat 45°53'40", long 89°08'28", in NE 1/4 NW 1/4 sec.5, T.39 N., R.11 E., Oneida County, 5.3 mi southeast of town of Eagle River, used as a reservoir since 1908, has a usable capacity of 779,000,000 ft<sup>3</sup>. This reservoir includes 18 lakes controlled by the same dam. Drainage area, 142 mi<sup>2</sup>.
- 05390400 Long Lake on Deerskin River, lat 46°02'37", long 89°02'44", in NW 1/4 SE 1/4 sec.7, T.41 N., R.12 E., Vilas County, 2.5 mi southeast of Phelps, used as a reservoir since 1908, has a usable capacity of 400,000,000 ft<sup>3</sup>. Drainage area, 22.9 mi<sup>2</sup>.
- 05390600 Deerskin Lake on Little Deerskin River, lat 45°59'07", long 89°09'40", in SE 1/4 sec.31, T.41 N., R.11 E., Vilas County, 6.3 mi northeast of town of Eagle River, used as a reservoir since 1908, has a usable capacity of 22,000,000 ft<sup>3</sup>. Drainage area, 2.47 mi<sup>2</sup>.
- 05390650 Sugar Camp Reservoir on Sugar Camp Creek, lat 45°52'19", long 89°23'40", in NE 1/4 sec.17, T.39 N., R.9 E., Oneida County, 7.6 mi southwest of town of Eagle River, used as a reservoir since 1908, has a usable capacity of 471,000,000 ft<sup>3</sup>. Drainage area, 48.4 mi<sup>2</sup>.
- 05390700 Little St. Germain Lake on Little St. Germain Creek, lat 45°53'55", long 89°27'10", in SE 1/4 sec.35, T.40 N., R.8 E., Vilas County, 9.6 mi west of town of Eagle River, used as a reservoir since 1908, has a usable capacity of 79,000,000 ft<sup>3</sup>. Drainage area, 19 mi<sup>2</sup>.
- 05390750 Big St. Germain Lake on St. Germain River, lat 45°55'06", long 89°31'55", in SE 1/4 sec.30, T.40 N., R.8 E., Vilas County, 5.0 mi south of Sayner, used as a reservoir since 1908, has a usable capacity of 202,000,000 ft<sup>3</sup>. Drainage area, 73.1 mi<sup>2</sup>.
- 05390800 Pickerel Lake on St. Germain River, lat 45°52'22", long 89°31'47", in NE 1/4 sec.18, T.39 N., R.8 E., Oneida County, 5.0 mi northeast of town of Lake Tomahawk, used as a reservoir since 1935, has a usable capacity of 338,000,000 ft<sup>3</sup>. Drainage area, 86.2 mi<sup>2</sup>.
- 05390900 Rainbow Lake on Wisconsin River, lat 45°50'02", long 89°32'42", in SW 1/4 sec.30, T.39 N., R.8 E., Oneida County, 800 ft upstream from U.S. Geological Survey river gaging station, 2.7 mi northeast of town of Lake Tomahawk, used as a reservoir since 1935, has a usable capacity of 2,181,000,000 ft<sup>3</sup>. Drainage area, 744 mi<sup>2</sup>.
- 05391100 South Pelican Lake on Pelican River, lat 45°31'37", long 89°12'24", in S 1/2 sec.11, T.35 N., R.10 E., Oneida County, 2.8 mi northwest of town of Pelican Lake, used as a reservoir since 1909, has a usable capacity of 305,000,000 ft<sup>3</sup>. Drainage area, 19.8 mi<sup>2</sup>.
- 05391300 North Pelican Lake (includes Moen Lakes) on North Branch Pelican River, lat 45°38'05", long 89°14'38", in SE 1/4 sec.4, T.36 N., R.10 E., Oneida County, 0.2 mi below Twin Lakes Creek and 8.0 mi east of Rhinelander city limits, used as a reservoir since 1908, has a usable capacity of 218,000,000 ft<sup>3</sup>. Drainage area, 95 mi<sup>2</sup>.
- 05392100 Minocqua Lake on Tomahawk River, lat 45°52'35", long 89°43'38", on line between secs.10 and 15, T.39 N., R.6 E., Oneida County, 1.0 mi west of Minocqua, used as a reservoir since 1910, has a usable capacity of 628,000,000 ft<sup>3</sup>. Drainage area, 72.5 mi<sup>2</sup>.
- 05392200 Squirrel Lake on Squirrel River, lat 45°50'37", long 89°54'13", in NE 1/4 sec.30, T.39 N., R.5 E., Oneida County, 9.4 mi west of Minocqua, used as a reservoir since 1908, has a usable capacity of 182,000,000 ft<sup>3</sup>. Drainage area, 15.2 mi<sup>2</sup>.
- 05392300 Willow Reservoir on Tomahawk River, lat 45°42'45", long 89°50'38", in NE 1/4 sec.10, T.37 N., R.5 E., Oneida County, 8.8 mi southwest of Hazelhurst, used as a reservoir since 1927, has a usable capacity of 3,302,000,000 ft<sup>3</sup>. Drainage area, 310 mi<sup>2</sup>.
- 05392500 Lake Nokomis on Tomahawk River, lat 45°32'20", long 89°44'48", in NW 1/4 sec.9, T.35 N., R.6 E., Lincoln County, at U.S. Geological Survey river gaging station, 0.5 mi east of Bradley, used as a reservoir since 1912, has a usable capacity of 1,808,000,000 ft<sup>3</sup>. Drainage area, 544 mi<sup>2</sup>.
- 05393600 Spirit River Flowage on Spirit River, lat 45°26'18", long 89°44'30", in NE 1/4 sec.16, T.34 N., R.6 E., Lincoln County, 2.0 mi south of Tomahawk, used as a reservoir since 1923, has a usable capacity of 756,000,000 ft<sup>3</sup>. Drainage area, 158 mi<sup>2</sup>.
- 05399600 Big Eau Pleine Reservoir on Big Eau Pleine River, lat 44°43'52", long 89°45'35", in SW 1/4 sec.14, T.26 N., R.6 E., Marathon County, 3.0 mi north-east of Dancy, used as a reservoir since 1937, has a capacity of 4,457,000,000 ft<sup>3</sup>. Drainage area, 363 mi<sup>2</sup>.
- 05400295 Lake Dubai on Wisconsin River, lat 44°39'54", long 89°39'03", in sec.10, T.25 N., R.7 E., Wood County, 1.5 mi downstream of Little Eau Pleine River and 10.5 mi northwest of Stevens Point, has a usable capacity of 2,117,000,000 ft<sup>3</sup>. Drainage area, 4,900 mi<sup>2</sup>.
- 05401400 Petenwell Flowage on Wisconsin River, lat 44°03'26", long 90°01'18", in SE 1/4 sec.4, T.18 N., R.4 E., Adams County, 5.2 mi upstream from Roche a Cri Creek, 2.4 mi west of Strongs Prairie, and 3.5 mi northeast of Necedah, used as a reservoir since 1950, has a total capacity of 19,880,000,000 ft<sup>3</sup>. Drainage area, 5,970 mi<sup>2</sup>.
- 05403200 Castle Rock Flowage on Wisconsin River, lat 43°51'48", long 89°57'38", in sec.13, T.16 N., R.4 E., Adams County, 4.5 mi upstream from Duck Creek, and 2.0 mi south of Germantown, and 7.0 mi northeast of Mauston, used as a reservoir since 1950, has a total capacity of 7,630,000,000 ft<sup>3</sup>. Drainage area, 7,056 mi<sup>2</sup>.

## MONTH-END CONTENTS, IN MILLIONS OF CUBIC FEET, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

	LAC VIEUX DESERT	TWIN LAKES	BUCKATABON LAKE	SEVENMILE LAKE	LOWER NINEMILE LAKE	BURNT ROLLWAYS RESERVOIR	LONG LAKE	DEERSKIN LAKE
Sept. 30	384	292	116	67	97	594	189	14
Oct. 31	392	296	113	65	98	546	219	12
Nov. 30	266	262	96	43	74	438	168	6
Dec. 31	153	197	73	18	31	177	117	5
Jan. 31	86	133	56	0	12	0	76	4
Feb. 29	54	111	49	0	12	0	80	4
Mar. 31	108	147	78	18	61	182	125	8
Apr. 30	246	233	114	57	102	604	205	11
May 31	295	286	115	59	97	530	241	16
June 30	232	267	115	64	98	505	211	14
July 31	214	261	116	56	101	499	178	12
Aug.31	181	236	114	45	100	493	134	10
Sept. 30	171	229	116	40	98	530	89	12

	SUGAR CAMP RESERVOIR	LITTLE ST. GERMAIN LAKE	BIG ST. GERMAIN LAKE	PICKEREL LAKE	RAINBOW LAKE	SOUTH PELICAN LAKE	NORTH PELICAN LAKE	MINOCQUA LAKE
Sept. 30	397	72	173	278	1,635	289	139	516
Oct. 31	414	74	153	276	2,070	284	128	482
Nov. 30	290	46	101	273	1,762	226	99	343
Dec. 31	103	19	55	220	1,503	150	64	219
Jan. 31	83	7	23	183	910	97	3	90
Feb. 29	110	3	19	159	386	82	5	32
Mar. 31	243	29	68	231	707	141	93	162
Apr. 30	414	66	135	272	1,706	284	138	359
May 31	379	72	154	273	2,090	289	135	485
June 30	375	68	158	272	1,920	272	132	488
July 31	361	75	163	276	1,338	305	132	491
Aug. 31	347	59	163	249	1,006	269	116	459
Sept. 30	336	60	167	279	785	286	137	436

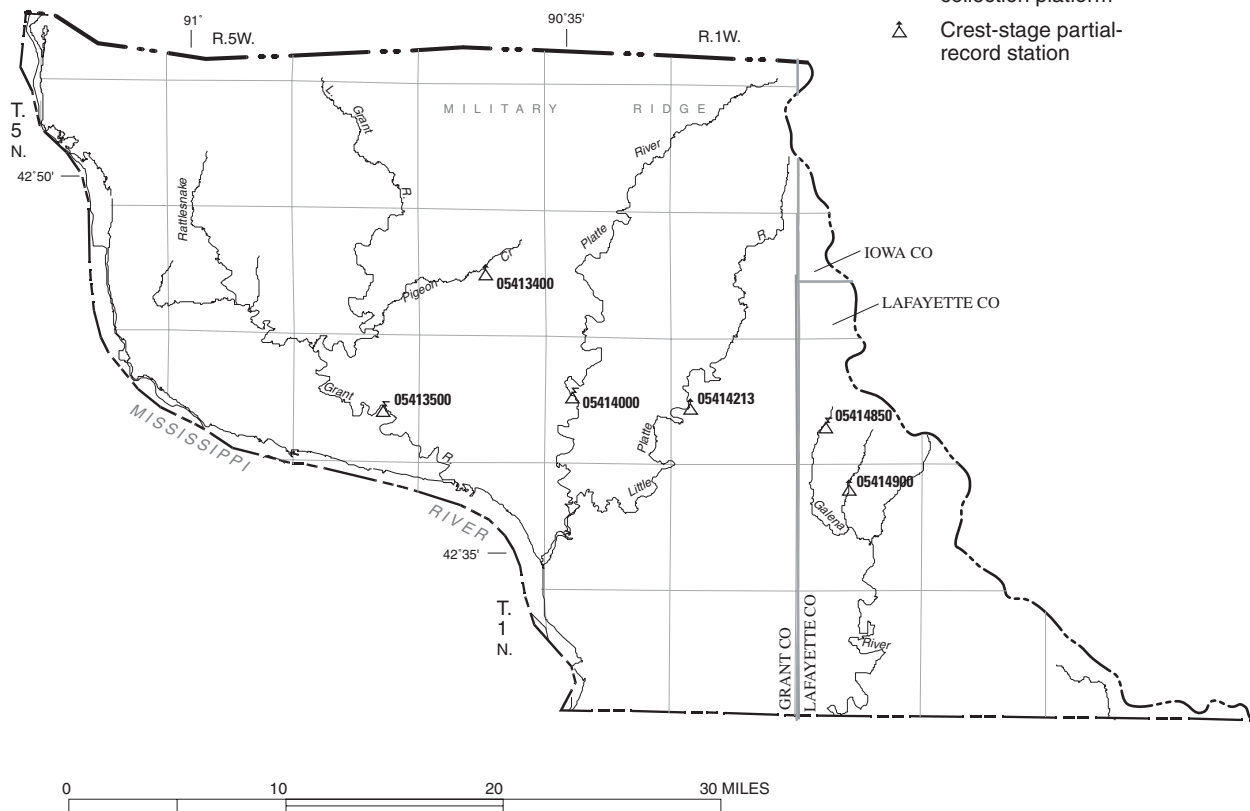
	SQUIRREL LAKE	WILLOW RESERVOIR	LAKE NOKOMIS	SPIRIT RIVER FLOWAGE	BIG EAU PLEINE RESERVOIR	LAKE DUBAY	PETENWELL FLOWAGE	CASTLE ROCK FLOWAGE
Sept. 30	170	2,939	1,684	667	4,394	4,144	17,597	6,611
Oct. 31	170	3,187	1,741	735	4,454	4,163	17,527	5,969
Nov. 30	142	2,705	1,451	550	4,130	4,144	17,615	5,876
Dec. 31	89	2,315	1,013	365	3,231	3,882	17,210	5,748
Jan. 31	43	1,643	732	163	2,289	3,378	15,018	5,487
Feb. 29	6	1,395	416	106	1,490	2,950	14,993	4,529
Mar. 31	58	1,252	885	426	3,049	3,855	16,276	5,568
Apr. 30	145	2,305	1,739	722	4,400	4,252	18,424	6,268
May 31	170	3,256	1,762	736	4,373	4,226	18,407	6,343
June 30	167	3,044	1,657	641	4,142	4,153	17,588	5,818
July 31	168	2,164	1,218	454	3,358	4,191	17,562	5,929
Aug. 31	157	1,603	1,108	353	2,513	4,054	17,236	5,850
Sept. 30	151	1,111	788	265	1,779	4,119	17,298	5,613





**EXPLANATION**

- 05414213 Station number
- △ Stream gage
- ▽ Surface water-quality station
- ⊠ Stream gage equipped with telephone or data collection platform
- ⚠ Crest-stage partial-record station



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

**GRANT-PLATTE RIVER BASIN**

## 05413500 GRANT RIVER AT BURTON, WI

LOCATION.--Lat 42°43'13", long 90°49'09", in NW ¼ sec.23, T.3 N., R.4 W., Grant County, Hydrologic Unit 07060003, on right bank at downstream side of highway bridge at Burton, 5.9 mi northwest of Potosi and 9.5 mi upstream from mouth.

DRAINAGE AREA.--269 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1934 to current year. Published as "near Burton" October 1934 to September 1947. Records published for both sites March to September 1947. October 1934, monthly discharge published in WSP 1308.

REVISED RECORDS.--WSP 825: 1935-36. WSP 1308: 1935-37(M), 1941(M), 1945-46(M), 1949(M). WSP 1728: 1942(M). WDR WI-76-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 606.43 ft above NGVD of 1929. Oct. 17, 1934, to Sept. 30, 1947, non-recording gage at site 6 mi upstream at datum 33.18 ft higher. Mar. 18, 1947, to July 27, 1949, nonrecording gage at present site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162	145	e130	e120	e100	e110	115	265	119	100	91	79
2	220	144	e130	e120	e100	e100	115	177	118	98	90	79
3	205	145	e130	e120	e100	e100	113	144	121	105	88	79
4	228	146	e130	e120	e100	e100	115	134	124	111	91	77
5	258	149	e130	e120	e100	e100	118	150	117	192	92	77
6	188	153	e130	119	e100	e100	114	144	116	141	90	77
7	172	148	e130	124	e100	e100	118	223	125	122	88	77
8	165	148	e130	121	e100	e100	117	291	148	143	86	77
9	162	149	e130	121	e100	e100	117	288	142	202	85	77
10	158	150	e140	104	e100	e100	122	258	124	147	84	77
11	156	148	e140	107	e100	e100	121	404	120	131	84	77
12	153	144	e140	e130	e100	e130	118	316	116	124	82	79
13	150	142	e140	e120	e100	e300	113	240	115	116	82	93
14	148	144	e140	e110	e100	e250	111	250	112	110	82	154
15	150	142	e140	e110	e100	e220	109	249	108	107	82	118
16	148	139	e140	e110	e100	e180	109	208	105	104	82	94
17	148	139	e140	e100	e100	154	108	190	103	101	81	88
18	153	140	149	e100	e100	139	106	177	103	100	80	84
19	151	141	154	e98	e120	132	111	170	102	97	79	88
20	146	140	137	e97	e180	147	131	162	98	97	80	87
21	144	140	131	e96	e280	135	130	150	97	100	83	84
22	142	139	127	e96	e240	126	116	145	97	98	82	87
23	140	138	117	e96	e180	122	109	148	97	95	79	87
24	144	137	e120	e96	e140	121	106	145	108	93	78	85
25	162	134	e120	e97	e130	119	105	138	124	93	79	82
26	177	133	e120	e97	e120	115	103	132	155	93	85	83
27	156	133	e130	e96	e120	123	101	127	117	93	83	86
28	158	e130	e140	e97	e110	135	99	125	116	92	79	85
29	158	e130	138	e97	---	131	97	123	120	92	83	83
30	151	e130	131	e97	---	118	120	125	105	91	82	82
31	147	---	126	e98	---	114	---	129	---	91	78	---
TOTAL	5,100	4,240	4,130	3,334	3,420	4,121	3,387	5,927	3,472	3,479	2,590	2,582
MEAN	165	141	133	108	122	133	113	191	116	112	83.5	86.1
MAX	258	153	154	130	280	300	131	404	155	202	92	154
MIN	140	130	117	96	100	100	97	123	97	91	78	77
CFSM	0.61	0.53	0.50	0.40	0.45	0.49	0.42	0.71	0.43	0.42	0.31	0.32
IN.	0.71	0.59	0.57	0.46	0.47	0.57	0.47	0.82	0.48	0.48	0.36	0.36

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2003, BY WATER YEAR (WY)

MEAN	121	130	112	134	202	315	185	171	211	176	149	133
MAX	276	626	350	467	668	1,057	505	489	920	808	502	330
(WY)	(1994)	(1962)	(1973)	(1974)	(1948)	(1959)	(1973)	(1973)	(1947)	(1993)	(1943)	(1993)
MIN	45.8	41.3	37.7	33.4	36.1	55.3	66.0	46.8	50.6	35.8	41.6	42.2
(WY)	(1935)	(1938)	(1959)	(1959)	(1959)	(1958)	(1957)	(1958)	(1936)	(1936)	(1937)	(1958)

## 05413500 GRANT RIVER AT BURTON, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1935 - 2003	
ANNUAL TOTAL	67,066		45,782		170	
ANNUAL MEAN	184		125		351	
HIGHEST ANNUAL MEAN					59.3	
LOWEST ANNUAL MEAN					1993	
HIGHEST DAILY MEAN	5,370	Jun 4	404	May 11	10,700	Jun 13, 1947
LOWEST DAILY MEAN	(a)110	Feb 1-4	77	Sep 4-11	30	(b)Aug 5, 1936
ANNUAL SEVEN-DAY MINIMUM	(a)114	Jan 29	77	Sep 4	31	(c)Aug 3, 1936
MAXIMUM PEAK FLOW			592	May 11	(d)25,000	Jul 16, 1950
MAXIMUM PEAK STAGE			8.46	May 11	24.82	Jul 16, 1950
INSTANTANEOUS LOW FLOW					(f)21	Mar 4, 1954
ANNUAL RUNOFF (CFSM)	0.68		0.47		0.63	
ANNUAL RUNOFF (INCHES)	9.27		6.33		8.58	
10 PERCENT EXCEEDS	219		162		257	
50 PERCENT EXCEEDS	151		119		120	
90 PERCENT EXCEEDS	130		84		60	

(a) Ice affected

(b) Also occurred Aug. 8, 9, 1936, Sept. 22, 1937, and Feb. 19, 20, 1959, ice affected

(c) Also occurred Jan. 4, 1959, ice affected

(d) From rating curve extended above 18,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow

(e) Estimated due to ice effect or missing record

(f) Result of freezeup

05413500 GRANT RIVER AT BURTON, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-67, 1978 to current year. National Stream-Quality Accounting Network data collection October 1986 to September 1994.

## PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Water years 1978 to current year, April-September monthly totals only published for 1983 water year, but daily load estimates are available for the entire year.

INSTRUMENTATION.--Automatic pumping sampler since June 21, 1999.

REMARKS.--Sediment records for periods of no ice cover are fair to good. Records for high-flow periods during ice cover are poor. Monthly and annual load values are fair. Most samples are point samples.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 13,600 mg/L, July 13, 1979; minimum observed, 6 mg/L, Dec. 8, 1997.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 95,300 tons, June 17, 1978; minimum daily, 1.5 tons, Mar. 1, 2, 1978.

## EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 315 mg/L, May 8; minimum observed, 7 mg/L, Feb. 11.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 312 tons, May 11; minimum daily, 2.1 tons, Sept. 18.

SUSPENDED SEDIMENT LOAD, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	13	11	4.8	2.4	9.2	8.3	108	38	30	15	2.8
2	105	13	11	4.8	2.3	7.2	7.5	59	36	30	16	2.7
3	77	12	11	4.8	2.3	6.3	6.6	41	35	31	16	2.7
4	100	12	11	4.7	2.2	6.3	6.3	38	34	33	18	2.6
5	148	12	11	4.7	2.2	6.4	6.5	44	30	113	19	2.6
6	83	12	11	4.7	2.1	6.5	6.3	43	29	58	19	2.6
7	72	11	10	4.8	2.1	6.5	6.7	87	30	38	20	2.5
8	65	11	9.8	4.7	2.0	6.6	6.7	197	34	59	21	2.5
9	61	11	9.4	4.7	2.0	6.7	6.8	172	32	150	21	2.6
10	56	11	9.8	4.0	1.9	6.8	7.2	107	27	86	18	2.7
11	52	11	9.5	4.1	4.3	7.5	7.2	312	25	59	16	2.9
12	44	11	9.4	4.9	6.0	29	7.1	207	24	43	14	3.1
13	38	10	9.3	4.4	6.0	121	6.9	108	23	31	13	3.9
14	33	10	9.2	4.0	6.0	92	6.9	99	21	23	11	12
15	30	10	9.1	3.9	6.1	73	6.9	95	18	18	10	9.7
16	26	10	9.0	3.8	6.1	54	7.0	69	15	13	9.0	4.3
17	23	10	8.9	3.4	6.1	42	7.1	57	14	10	8.0	2.3
18	22	8.8	9.4	3.3	6.3	36	7.1	52	15	9.9	6.7	2.1
19	22	7.3	9.6	3.2	12	34	7.5	50	22	24	4.7	2.2
20	22	8.3	8.4	3.1	32	37	9.0	47	32	22	3.4	2.3
21	22	9.6	7.6	2.9	83	34	9.1	43	38	21	3.3	2.3
22	22	11	7.1	2.9	65	32	8.2	41	28	18	3.3	2.4
23	22	11	6.2	2.8	40	31	7.9	38	24	16	3.1	2.5
24	23	11	6.1	2.8	25	23	7.8	36	31	14	3.0	2.5
25	26	11	5.8	2.7	20	11	7.8	36	42	13	3.0	2.5
26	26	11	5.5	2.7	16	11	8.6	36	59	12	3.2	2.5
27	21	11	5.7	2.6	14	13	12	36	40	10	3.1	2.7
28	20	11	5.8	2.5	11	15	16	37	36	9.3	2.9	2.7
29	18	11	5.5	2.5	---	13	23	38	37	11	3.0	2.7
30	16	11	5.1	2.4	---	11	41	41	32	14	3.0	2.8
31	14	---	5.1	2.4	---	9.1	---	43	---	14	2.8	---
TOTAL	1,333	323.0	262.3	114.0	386.4	797.1	283.0	2,417	901	1,033.2	312.5	96.7
WTR YR	2003	TOTAL 8,259.2										

## 05413500 GRANT RIVER AT BURTON, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Discharge, cfs (00060)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Suspended sediment concentration mg/L (80154)
OCT 2002					
02...	1450	--	227	10	151
02...	1452	--	227	50	210
04...	0500	--	184	50	97
11...	0500	--	157	50	127
18...	0500	--	153	50	52
25...	0500	--	154	50	61
NOV					
01...	0500	--	145	50	34
08...	0500	--	148	50	27
15...	0500	--	142	50	27
18...	1348	--	141	10	27
18...	1558	--	140	50	17
22...	0500	--	140	50	28
DEC					
04...	1515	130	--	50	32
11...	1137	140	--	50	25
20...	0500	--	139	50	23
30...	1333	--	130	10	14
30...	1342	--	131	50	15
JAN 2003					
12...	1412	130	--	50	14
FEB					
11...	0930	100	--	10	7
11...	0941	100	--	50	22
MAR					
03...	1154	100	--	50	23
24...	1450	--	121	10	94
24...	1511	--	121	50	31
28...	0500	--	135	50	42
APR					
04...	0500	--	114	50	20
14...	1028	--	110	50	23
26...	0600	--	104	50	28
MAY					
01...	0715	--	256	50	162
03...	0600	--	148	50	103
07...	1200	--	173	50	113
08...	0845	--	310	10	315
08...	0850	--	310	50	315
10...	0600	--	274	50	143
14...	1545	--	256	50	158
17...	0600	--	193	50	111
22...	0848	--	145	30	105
24...	0600	--	148	50	91
31...	0600	--	135	50	125
JUN					
07...	0600	--	121	50	89
14...	0600	--	113	50	72
16...	1450	--	103	10	53
16...	1500	--	103	50	48
18...	1345	--	101	30	54
21...	0600	--	99	50	163
28...	0600	--	110	50	115
JUL					
05...	0600	--	176	50	265
09...	0530	--	255	50	304
12...	0600	--	126	50	135
18...	1300	--	98	30	29
19...	0600	--	99	50	97
29...	1020	--	92	10	34
29...	1025	--	92	50	52
AUG					
09...	0600	--	87	50	93
18...	0922	--	82	50	33
20...	1241	--	79	30	15
SEP					
08...	1310	--	77	10	12
17...	1300	--	88	30	9

## 05414000 PLATTE RIVER NEAR ROCKVILLE, WI

LOCATION.--Lat 42°43'52", long 90°38'25", in SW  $\frac{1}{4}$  sec.17, T.3 N., R.2 W., Grant County, Hydrologic Unit 07060003, on right bank just downstream from bridge on County Trunk Highway B, 0.8 mi upstream from Blakely Branch, 2.2 mi east of Rockville, 4.5 mi northeast of Potosi, and 15.2 mi upstream from mouth.

DRAINAGE AREA.--142 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1934 to current year. Monthly discharge for October and November 1934 published in WSP 1308.

REVISED RECORDS.--WSP 1438: 1935-36, 1937(M), 1939(M), 1941-43(M), 1946(M). WDR WI-76-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 642.50 ft above NGVD of 1929. Prior to Oct. 1, 1941, nonrecording gage at site 1.3 mi upstream at datum 12.55 ft higher. Oct. 1, 1941, to June 29, 1949, nonrecording gage at present site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	75	e64	61	e52	e53	57	169	63	51	46	39
2	109	74	e62	e62	e52	e53	57	105	63	50	45	38
3	112	74	e60	e62	e52	e52	56	84	64	51	45	38
4	131	76	e58	e61	e51	e51	58	77	63	52	45	37
5	131	77	e58	e61	e51	e50	58	83	61	81	46	37
6	105	78	e56	e62	e51	e50	56	76	62	67	46	37
7	97	76	e56	62	e50	e50	58	87	66	61	46	36
8	93	77	e57	64	e50	e50	57	101	74	83	43	36
9	90	77	e59	64	e50	e50	57	115	72	89	42	36
10	87	77	73	55	e50	e50	58	116	64	70	42	36
11	87	77	72	e66	e50	e52	57	205	62	66	42	36
12	86	75	73	e62	e50	e90	56	158	61	66	41	39
13	84	74	72	e60	e50	e150	55	127	60	58	41	69
14	83	73	70	e57	e50	e100	54	135	58	55	41	107
15	83	72	69	e55	e50	e97	54	128	55	54	41	68
16	83	70	67	e53	e51	93	54	111	53	52	40	49
17	83	71	66	e52	e51	81	54	102	52	51	39	45
18	86	71	76	e51	e52	73	54	96	53	50	38	42
19	84	72	81	e50	e60	69	55	92	52	49	38	42
20	82	70	72	e50	e90	74	61	89	50	49	40	41
21	80	71	69	e50	e130	68	59	82	50	50	43	42
22	78	70	66	e50	e90	65	55	80	50	49	42	45
23	77	69	67	e50	e65	63	52	85	50	48	39	45
24	79	69	e70	e50	e60	62	51	81	55	47	39	43
25	90	68	e64	e50	e58	62	51	76	65	47	38	40
26	90	66	60	e50	e56	59	50	71	70	47	41	41
27	81	66	67	e50	e55	62	49	68	57	46	39	42
28	82	e65	69	e50	e54	66	48	68	61	47	38	40
29	81	e65	67	e50	---	65	48	66	62	46	43	39
30	78	e64	68	e50	---	59	67	68	53	46	40	39
31	77	---	66	e51	---	57	---	67	---	46	38	---
TOTAL	2,781	2,159	2,054	1,721	1,631	2,076	1,656	3,068	1,781	1,724	1,287	1,324
MEAN	89.7	72.0	66.3	55.5	58.2	67.0	55.2	99.0	59.4	55.6	41.5	44.1
MAX	131	78	81	66	130	150	67	205	74	89	46	107
MIN	77	64	56	50	50	50	48	66	50	46	38	36
CFSM	0.63	0.51	0.47	0.39	0.41	0.47	0.39	0.70	0.42	0.39	0.29	0.31
IN.	0.73	0.57	0.54	0.45	0.43	0.54	0.43	0.80	0.47	0.45	0.34	0.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)
	70.7	146	(1962)	25.3	(1951)	76.4	372	(1962)	29.2	(1938)	63.9	155	(1973)	23.7	(1959)
	76.3	315	(1946)	22.1	(1959)	76.3	315	(1946)	22.1	(1959)	105	379	(1938)	24.3	(1959)
	173	483	(1959)	33.4	(1957)	173	483	(1959)	33.4	(1957)	113	291	(1993)	42.0	(1990)
	106	328	(1960)	36.1	(1958)	106	328	(1960)	36.1	(1958)	133	586	(1947)	34.3	(1936)
	107	660	(1993)	24.0	(1936)	107	660	(1993)	24.0	(1936)	88.7	348	(1943)	30.3	(1937)
	78.5	202	(1942)	33.7	(1989)	78.5	202	(1942)	33.7	(1989)					

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1935 - 2003
ANNUAL TOTAL	37,027	23,262	
ANNUAL MEAN	101	63.7	99.2
HIGHEST ANNUAL MEAN			234
LOWEST ANNUAL MEAN			40.8
HIGHEST DAILY MEAN	1,340	205	7,830
LOWEST DAILY MEAN	(a)56	36	7.0
ANNUAL SEVEN-DAY MINIMUM	(a)58	36	18
MAXIMUM PEAK FLOW		(a)	(b)43,500
MAXIMUM PEAK STAGE		(a)4.84	17.26
INSTANTANEOUS LOW FLOW			(c)0.00
ANNUAL RUNOFF (CFSM)	0.71	0.45	0.70
ANNUAL RUNOFF (INCHES)	9.70	6.09	9.49
10 PERCENT EXCEEDS	136	88	156
50 PERCENT EXCEEDS	87	59	68
90 PERCENT EXCEEDS	66	42	36

(a) Ice affected

(b) From rating curve extended above 7,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow

(c) Result of freezeup

(e) Estimated due to ice effect or missing record

05414850 GALENA RIVER AT U.W. PLATTEVILLE FARMS NEAR PLATTEVILLE, WI

LOCATION.--Lat 42°42'39", long 90°23'58", in NE 1/4 NE 1/4 NW 1/4 sec.29, T.1 N., R.1 E., Lafayette County, Hydrologic Unit 07060005, on right bank 110 ft downstream from College Farm Road bridge.

DRAINAGE AREA.--2.94 mi<sup>2</sup>.

PERIOD OF RECORD.--August 2002 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 606.43 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges and for Apr. 16-29 and July 11-27, which are poor (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	1.9	1.5	e1.3	1.3	1.2	1.2	4.1	1.2	1.5	0.86	1.2
2	3.6	1.8	1.5	1.3	1.4	1.2	1.2	2.2	1.2	1.6	0.83	1.1
3	2.8	1.8	1.5	1.3	1.6	1.2	1.2	2.0	1.2	1.7	0.87	1.1
4	11	1.8	1.5	1.3	e1.3	1.2	1.2	2.0	1.2	1.8	0.88	1.1
5	3.3	1.7	1.5	1.2	e1.3	e1.2	1.1	2.1	1.2	2.2	0.82	1.1
6	2.9	1.7	1.5	1.2	e1.2	1.2	1.1	1.9	1.2	1.9	0.84	1.1
7	2.7	1.7	1.5	1.3	e1.2	1.2	1.1	2.3	1.2	1.7	0.89	1.1
8	2.6	1.6	1.5	1.3	e1.2	e1.2	1.2	1.9	1.3	5.9	0.87	1.2
9	2.6	1.6	1.5	1.3	e1.2	e1.2	1.1	3.0	1.2	2.1	0.91	1.2
10	2.6	1.6	1.5	1.3	e1.2	e1.2	1.2	2.7	1.2	1.9	0.88	1.2
11	2.5	1.6	1.4	e1.3	e1.2	e1.2	1.2	2.1	1.2	2.3	0.93	1.2
12	2.5	1.6	1.4	1.3	e1.2	3.2	1.1	1.8	1.2	2.0	0.93	1.2
13	2.5	1.6	1.4	1.3	e1.2	1.8	1.1	1.6	1.3	1.8	0.93	2.5
14	2.4	1.6	1.4	1.3	e1.2	1.4	1.1	4.1	1.2	1.9	0.94	3.0
15	2.4	1.5	1.4	e1.3	e1.2	1.3	1.1	1.9	1.2	1.9	0.95	1.4
16	2.3	1.5	1.4	1.3	e1.2	1.3	1.2	1.7	1.2	2.0	0.97	1.2
17	2.3	1.5	1.4	1.3	1.2	1.3	1.3	1.5	1.2	1.9	0.99	1.2
18	2.3	1.6	1.5	1.3	1.6	1.3	1.3	1.4	1.2	1.7	0.98	1.2
19	2.2	1.6	1.4	1.3	1.6	1.3	1.4	1.4	1.2	1.6	0.88	1.2
20	2.2	1.5	1.4	1.3	1.7	1.3	1.4	1.4	1.2	1.5	0.89	1.2
21	2.1	1.5	1.4	1.3	1.4	1.3	1.4	1.3	1.2	1.5	0.92	1.2
22	2.1	1.5	1.4	1.3	1.3	1.3	1.3	1.3	1.2	1.5	0.94	1.2
23	2.0	1.5	1.4	e1.3	e1.3	1.2	1.3	1.3	1.2	1.5	0.98	1.1
24	2.0	1.5	1.4	e1.3	e1.2	1.2	1.3	1.3	1.3	1.5	0.94	1.1
25	2.2	1.5	1.4	e1.3	e1.2	1.2	1.3	1.3	1.6	1.5	0.96	1.1
26	2.1	1.5	1.3	e1.3	e1.2	1.2	1.3	1.3	1.4	1.5	1.1	1.1
27	2.0	1.5	1.3	e1.3	1.2	1.3	1.3	1.3	1.2	1.4	1.1	1.1
28	2.0	1.5	1.3	1.3	1.2	1.3	1.3	1.2	1.4	1.3	1.1	1.0
29	2.0	1.5	1.3	1.3	---	1.2	1.3	1.2	1.3	1.1	1.2	0.95
30	1.9	1.5	1.3	1.3	---	1.2	7.5	1.3	1.4	1.0	1.2	0.95
31	1.9	---	1.3	1.3	---	1.2	---	1.2	---	0.93	1.2	---
TOTAL	82.6	47.8	43.9	40.1	36.2	41.0	43.1	57.1	37.4	55.63	29.68	37.50
MEAN	2.66	1.59	1.42	1.29	1.29	1.32	1.44	1.84	1.25	1.79	0.96	1.25
MAX	11	1.9	1.5	1.3	1.7	3.2	7.5	4.1	1.6	5.9	1.2	3.0
MIN	1.9	1.5	1.3	1.2	1.2	1.2	1.1	1.2	1.2	0.93	0.82	0.95
CFSM	0.91	0.54	0.48	0.44	0.44	0.45	0.49	0.63	0.42	0.61	0.33	0.43
IN.	1.05	0.60	0.56	0.51	0.46	0.52	0.55	0.72	0.47	0.70	0.38	0.47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	2.66	1.59	1.42	1.29	1.29	1.32	1.44	1.84	1.25	1.79	1.61	1.84
MAX	2.66	1.59	1.42	1.29	1.29	1.32	1.44	1.84	1.25	1.79	2.27	2.43
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)
MIN	2.66	1.59	1.42	1.29	1.29	1.32	1.44	1.84	1.25	1.79	0.96	1.25
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

SUMMARY STATISTICS

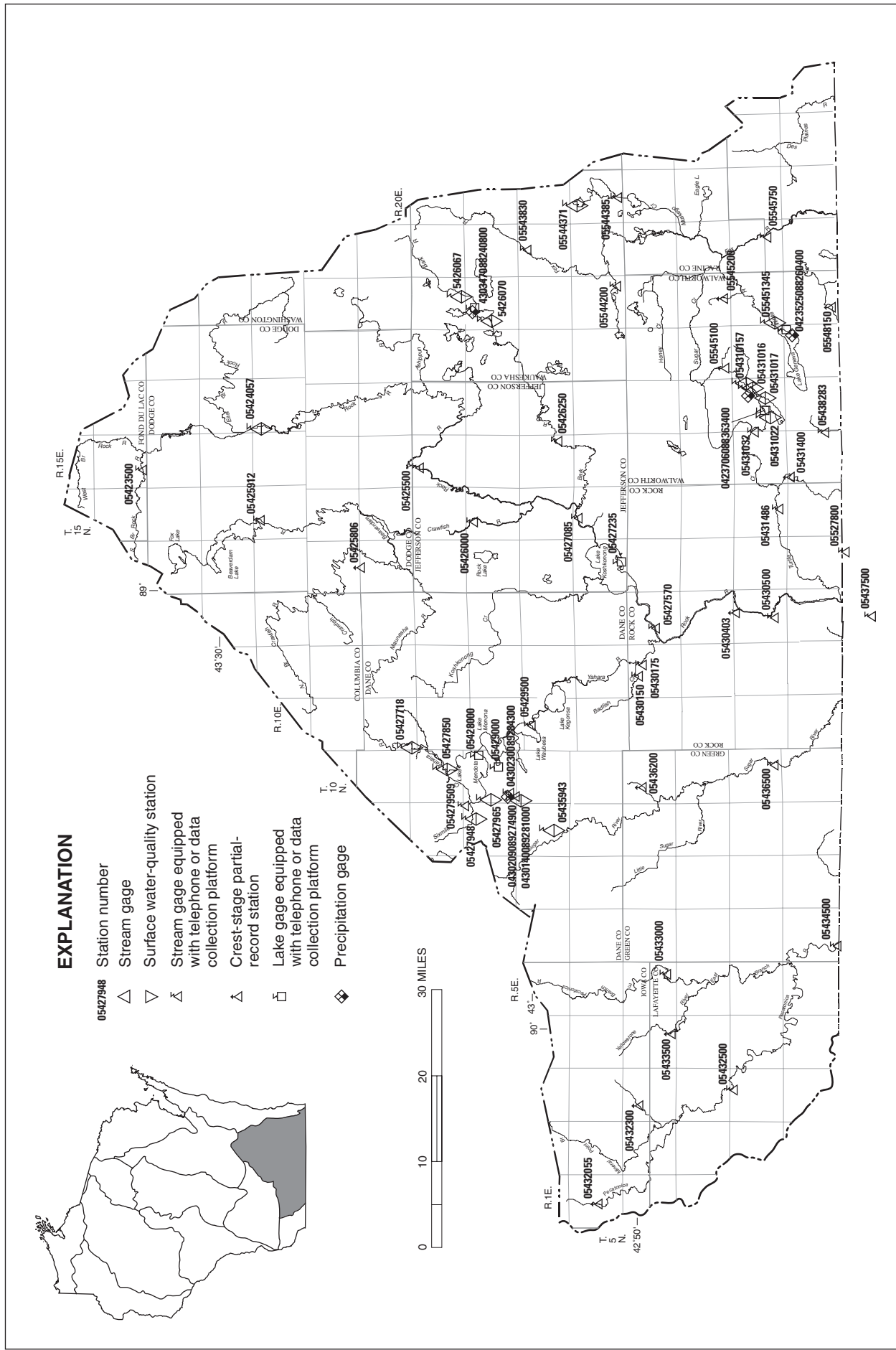
FOR 2002 CALENDAR YEAR  
(AUGUST-DECEMBER)

FOR 2003 WATER YEAR

WATER YEARS 2002 - 2003

ANNUAL TOTAL	317.5	552.01	
ANNUAL MEAN	2.08	1.51	1.63
HIGHEST ANNUAL MEAN			2.35
LOWEST ANNUAL MEAN			1.51
HIGHEST DAILY MEAN	11	11	11
LOWEST DAILY MEAN	1.3	0.82	0.82
ANNUAL SEVEN-DAY MINIMUM	1.3	0.86	0.86
MAXIMUM PEAK FLOW		69	69
MAXIMUM PEAK STAGE		6.36	6.36
INSTANTANEOUS LOW FLOW		0.65	0.65
ANNUAL RUNOFF (CFSM)	0.71	0.51	0.56
ANNUAL RUNOFF (INCHES)	4.02	6.98	7.54
10 PERCENT EXCEEDS	2.5	2.1	2.3
50 PERCENT EXCEEDS	2.1	1.3	1.4
90 PERCENT EXCEEDS	1.4	1.1	1.1

(e) Estimated due to ice effect or missing record



**EXPLANATION**

- 05427948 Stream gage
- Surface water-quality station
- Stream gage equipped with telephone or data collection platform
- Crest-stage partial-record station
- Lake gage equipped with telephone or data collection platform
- Precipitation gage



**ROCK AND ILLINOIS RIVER BASINS**

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



05423500 SOUTH BRANCH ROCK RIVER AT WAUPUN, WI

LOCATION.--Lat 43°38'30", long 88°43'14", in SW ¼ NW ¼ sec.33, T.14 N., R.15 E., Fond du Lac County, Hydrologic Unit 07090001, on left bank 260 ft upstream from U.S. Business Route 151 at Waupun, and 2.8 mi upstream from mouth.

DRAINAGE AREA.--63.6 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1948 to September 1969. March 1987 to current year. Monthly discharge for October and November 1948 published in WSP 1308, but unpublished daily discharges available for October to November 1948.

REVISED RECORDS.--WDR WI-88-1: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 863.46 ft above NGVD of 1929. October 1948 to September 1969, recording gage at site 150 ft downstream at same datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	3.7	2.6	2.5	e1.9	e0.80	9.5	17	11	5.2	4.6	1.1
2	2.5	3.4	2.9	2.4	e2.0	e1.0	9.0	15	9.6	4.6	4.1	0.93
3	3.6	3.7	2.7	2.5	e2.1	e1.1	8.4	12	9.2	3.9	11	1.3
4	15	4.0	2.5	2.3	e2.2	e1.2	8.6	11	8.5	4.3	6.9	0.79
5	7.5	4.5	2.5	2.5	e2.3	e1.1	7.7	24	7.6	5.4	4.7	0.86
6	8.4	4.4	2.4	2.6	e2.1	e1.1	7.5	23	7.4	5.5	5.1	0.92
7	5.9	4.4	2.4	2.7	e2.0	e1.0	8.7	27	8.6	5.0	4.8	0.60
8	4.9	3.9	2.4	2.7	e1.9	e0.98	7.6	26	16	5.4	3.8	1.1
9	3.8	3.8	2.0	2.7	e1.9	e0.96	8.9	35	12	5.7	3.2	0.98
10	4.4	3.9	2.0	2.3	e1.8	e0.92	9.4	33	19	31	2.9	0.89
11	3.7	4.7	2.0	2.1	e1.8	e1.1	9.1	123	16	18	2.9	0.93
12	3.1	3.5	2.1	e2.1	e1.8	e3.0	8.9	128	14	15	2.9	13
13	2.8	3.4	2.3	e2.1	e1.8	10	8.7	95	12	12	3.5	15
14	3.0	3.4	2.3	e2.1	e1.8	12	8.3	70	10	9.0	2.5	19
15	2.8	3.2	2.4	e2.1	e1.8	21	8.9	56	8.4	12	2.1	10
16	2.4	3.0	2.4	e2.1	e1.7	20	11	44	7.2	7.4	2.3	7.4
17	2.7	2.8	2.4	e2.0	e1.7	16	9.9	36	6.5	6.4	2.4	6.4
18	5.4	3.6	6.9	e2.0	e1.8	12	9.3	30	6.3	5.3	2.3	5.0
19	3.2	4.6	4.4	e2.0	e1.9	8.6	10	27	6.4	4.4	2.0	3.5
20	3.1	3.9	3.6	e2.0	e2.3	8.2	16	30	5.7	3.9	2.2	2.6
21	3.7	3.9	3.0	e2.0	e2.1	8.2	15	24	5.8	3.5	2.0	2.6
22	3.5	3.7	2.5	e1.9	e1.7	9.3	14	21	5.2	3.4	1.1	2.9
23	3.4	3.8	8.6	e1.9	e1.0	8.4	12	19	5.7	3.5	0.83	2.1
24	3.9	3.6	2.8	e1.8	e0.86	8.9	10	17	5.1	3.5	1.1	1.8
25	5.4	3.4	2.6	e1.9	e0.80	8.2	9.3	15	8.1	3.5	5.3	1.6
26	4.9	3.2	2.6	e1.7	e0.76	7.4	8.6	13	5.1	3.4	3.4	2.2
27	4.7	3.0	2.6	e1.8	e0.72	8.0	8.5	12	4.0	3.1	2.2	2.3
28	4.5	2.8	2.5	e1.8	e0.70	19	8.0	12	11	3.0	1.5	1.7
29	4.7	2.8	2.5	e1.9	---	18	7.9	14	6.4	3.1	1.3	2.1
30	4.2	2.7	2.7	e2.0	---	13	11	13	5.8	2.9	0.67	2.4
31	4.3	---	2.7	e2.1	---	10	---	13	---	6.1	0.70	---
TOTAL	137.5	108.7	90.3	66.6	47.24	240.46	289.7	1,035	263.6	208.4	96.30	114.00
MEAN	4.44	3.62	2.91	2.15	1.69	7.76	9.66	33.4	8.79	6.72	3.11	3.80
MAX	15	4.7	8.6	2.7	2.3	21	16	128	19	31	11	19
MIN	2.1	2.7	2.0	1.7	0.70	0.80	7.5	11	4.0	2.9	0.67	0.60
CFSM	0.07	0.06	0.05	0.03	0.03	0.12	0.15	0.52	0.14	0.11	0.05	0.06
IN.	0.08	0.06	0.05	0.04	0.03	0.14	0.17	0.61	0.15	0.12	0.06	0.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2003, BY WATER YEAR (WY)

	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	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
MEAN	17.3	20.4	15.8	11.5	18.0	64.5	72.0	35.6	30.8	28.4	16.4	14.5	(1996)	(1962)	(1966)	(1996)	(1966)	(1952)	(1993)	(1960)	(1996)	(1993)	(1960)	(1960)																															
MAX	90.9	106	80.0	64.6	105	176	266	107	132	246	115	76.2	(1996)	(1962)	(1966)	(1996)	(1966)	(1952)	(1993)	(1960)	(1996)	(1993)	(1960)	(1960)																															
(WY)	(1996)	(1962)	(1966)	(1996)	(1966)	(1952)	(1993)	(1960)	(1996)	(1993)	(1960)	(1960)																																											
MIN	0.63	0.53	0.16	0.094	0.079	5.40	7.80	3.54	1.36	0.95	0.56	0.55	(1965)	(1965)	(1959)	(1959)	(1964)	(1964)	(1958)	(1964)	(1964)	(1964)	(1964)																																
(WY)	(1965)	(1965)	(1959)	(1959)	(1959)	(1964)	(1964)	(1958)	(1964)	(1964)	(1964)	(1963)																																											

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1949 - 2003	
ANNUAL TOTAL	8,396.6		2,697.80			
ANNUAL MEAN	23.0		7.39		28.9	
HIGHEST ANNUAL MEAN					94.1	
LOWEST ANNUAL MEAN					2.47	
HIGHEST DAILY MEAN	128	Mar 9	128	May 12	1,280	(a)
LOWEST DAILY MEAN	1.4	Sep 24	0.60	Sep 7	0.00	Sep 7, 1958
ANNUAL SEVEN-DAY MINIMUM	1.9	Sep 10	(b)0.81	Feb 23	0.00	(c)Sep 7, 1958
MAXIMUM PEAK FLOW			150	May 11	(d)1,500	Apr 3, 1959
MAXIMUM PEAK STAGE			3.37	May 11	7.97	Apr 3, 1959
INSTANTANEOUS LOW FLOW			0.60	Sep 7	0.00	(f)
ANNUAL RUNOFF (CFSM)	0.36		0.12		0.45	
ANNUAL RUNOFF (INCHES)	4.91		1.58		6.18	
10 PERCENT EXCEEDS	62		15		69	
50 PERCENT EXCEEDS	11		3.7		11	
90 PERCENT EXCEEDS	2.5		1.7		1.0	

(a) Many days in 1958-59, 1963-64

(b) Ice affected

(c) Also occurred in 1959

(d) From rating curve extended above 650 ft<sup>3</sup>/s

(e) Estimated due to ice effect or missing record

(f) No flow at times in 1949, 1953-54, 1958-59, 1963-64

ROCK RIVER AT HORICON

05424057 ROCK RIVER AT HORICON, WI

LOCATION.--Lat 43°27'01", long 88°37'56", in NW ¼ SE ¼ sec.6, T.11 N., R.16 E., Dodge County, Hydrologic Unit 07090001, on left bank downstream side of State Highway 33, 1,700 ft upstream of dam, at Horicon.

DRAINAGE AREA.--456 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1997 to December 2000, November 2001 to current year.

GAGE.--Water-stage recorder. Side-looking velocity meter system. Elevation of gage is 860 ft, from topographic map.

REMARKS.--Records poor (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e28	e110	e70	68	e25	e30	156	121	244	63	43	e3.7
2	e28	e110	e70	65	e26	31	185	141	222	73	23	e3.8
3	e28	e96	e63	64	e27	e30	290	147	218	74	45	e3.9
4	e31	e93	e65	62	e27	e32	320	140	208	66	31	e4.1
5	e41	e92	e64	63	e26	e33	271	213	176	53	28	e4.4
6	e59	e92	e62	60	e25	e36	233	294	119	61	42	e4.5
7	e58	e91	e62	57	e23	e40	193	297	188	97	61	e4.4
8	e43	e80	e58	55	e23	e40	123	290	153	56	24	e4.3
9	e46	e90	e53	53	e23	e40	121	269	157	91	21	e4.0
10	e47	e98	e52	50	e23	e40	104	324	199	122	44	e3.9
11	e48	e98	e54	50	e23	e40	95	335	238	65	45	e4.0
12	e50	e99	e53	49	e24	e42	102	831	252	59	7.2	e4.3
13	e54	e100	52	51	e24	e44	87	920	296	54	4.6	e5.0
14	e40	e100	49	49	e24	e46	77	878	281	26	8.6	e7.0
15	e45	e97	51	49	e23	e50	87	870	279	131	9.5	e8.0
16	e43	e95	49	46	e23	52	116	866	237	23	18	e9.0
17	e43	e90	48	40	e23	65	140	838	206	66	2.5	e10
18	e40	e82	53	39	e24	76	149	795	219	26	1.4	e10
19	e40	e76	59	34	e26	79	123	636	206	25	13	e10
20	e44	e82	66	35	e30	282	110	623	180	43	-28	e9.0
21	e44	e90	79	31	e35	356	152	376	164	97	87	e9.0
22	e51	e100	78	29	e34	265	154	327	151	32	8.7	e8.0
23	e48	e110	74	29	e32	213	144	320	122	27	-3.1	e7.0
24	e48	e100	73	31	30	92	144	305	111	6.0	12	e7.0
25	e47	e96	74	17	31	39	137	282	108	-20	52	e7.0
26	e58	e78	74	19	32	53	112	267	196	53	e40	e7.0
27	e67	e74	73	e20	27	62	105	233	68	45	e9.0	e7.0
28	e93	e74	73	e21	e27	71	114	226	68	27	e7.0	e6.0
29	e100	e72	73	e22	---	83	103	283	94	-0.21	e5.0	e6.0
30	e110	e65	68	e25	---	84	96	133	71	-21	e4.0	e6.0
31	e110	---	64	e26	---	83	---	346	---	63	e3.8	---
TOTAL	1,632	2,730	1,956	1,309	740	2,529	4,343	12,926	5,431	1,582.79	669.2	187.3
MEAN	52.6	91.0	63.1	42.2	26.4	81.6	145	417	181	51.1	21.6	6.24
MAX	110	110	79	68	35	356	320	920	296	131	87	10
MIN	28	65	48	17	23	30	77	121	68	-21	-28	3.7
CFSM	0.12	0.20	0.14	0.09	0.06	0.18	0.32	0.91	0.40	0.11	0.05	0.01
IN.	0.13	0.22	0.16	0.11	0.06	0.21	0.35	1.05	0.44	0.13	0.05	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

MEAN	79.3	149	115	86.2	255	399	580	395	266	178	121	74.9
MAX	106	229	205	138	441	794	1,194	538	470	573	448	166
(WY)	(1999)	(2002)	(2002)	(2002)	(2002)	(2002)	(1998)	(1999)	(2000)	(1999)	(1999)	(1999)
MIN	52.6	91.0	63.1	42.2	26.4	81.6	145	310	110	40.7	14.0	6.24
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(1998)	(1998)	(2002)	(2002)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1998 - 2003

ANNUAL TOTAL	85,968.0	36,035.29	
ANNUAL MEAN	236	98.7	224
HIGHEST ANNUAL MEAN			324
LOWEST ANNUAL MEAN			98.7
HIGHEST DAILY MEAN	1,140	Mar 23	1,470
LOWEST DAILY MEAN	(e)8.0	Sep 17	-28
ANNUAL SEVEN-DAY MINIMUM	(e)9.1	Sep 11	3.6
ANNUAL RUNOFF (CFSM)	0.52		0.22
ANNUAL RUNOFF (INCHES)	7.01		2.94
10 PERCENT EXCEEDS	742		235
50 PERCENT EXCEEDS	97		58
90 PERCENT EXCEEDS	16		7.7

(e) Estimated due to ice effect or missing record



ROCK RIVER BASIN

05425912 BEAVERDAM RIVER AT BEAVER DAM, WI

LOCATION.--Lat 43°26'57", long 88°50'21", in NE ¼ SW ¼ sec.4, T.11 N., R.14 E., Dodge County, Hydrologic Unit 07090002, on left bank 5 ft upstream from bridge on Davis Street, 0.8 mi downstream from outlet of Beaverdam Lake, at Beaver Dam.

DRAINAGE AREA.--157 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1985 to current year. Instantaneous stages from November 1984 to February 1985 in District data files.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 839.42 ft above NGVD of 1929.

REMARKS.--Records good (see page 11). Flow regulated by dam 0.8 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	5.3	8.6	12	13	18	28	12	83	13	14	10
2	8.1	3.7	8.8	12	14	16	26	10	61	13	13	10
3	7.5	3.5	8.6	12	14	16	24	8.5	37	14	8.4	11
4	11	6.9	8.5	12	14	33	27	7.9	31	14	13	11
5	2.6	9.2	8.6	12	14	47	31	11	31	12	17	9.9
6	5.8	8.3	8.5	12	14	45	25	8.8	24	11	18	9.5
7	5.7	7.4	8.6	12	14	43	25	10	24	12	19	8.1
8	4.9	7.3	8.4	12	14	42	26	8.3	29	13	20	9.7
9	5.3	6.9	8.2	13	14	42	25	11	27	14	20	10
10	7.9	6.9	8.9	13	14	40	16	11	29	16	21	11
11	8.4	11	10	12	14	39	10	20	29	15	22	12
12	8.6	6.9	10	12	14	38	11	101	28	13	23	20
13	6.2	6.3	10	12	13	73	8.8	158	27	12	23	30
14	6.3	7.8	10	12	13	170	8.9	154	27	25	24	28
15	7.9	8.2	10	12	13	181	9.9	160	26	33	24	20
16	7.8	8.0	10	11	13	174	9.3	160	25	24	24	18
17	8.2	8.1	10	11	12	94	8.4	155	24	22	14	16
18	9.3	8.6	14	11	12	43	8.7	149	21	20	8.8	15
19	7.1	8.5	12	11	12	39	8.6	146	17	19	8.2	14
20	7.9	8.2	13	11	12	29	14	182	15	16	9.9	8.4
21	7.7	8.1	13	11	16	23	16	112	14	16	11	7.9
22	7.7	7.8	13	11	18	23	11	75	14	14	11	12
23	7.6	6.4	13	11	17	23	9.7	56	14	12	11	9.3
24	7.9	2.5	12	11	17	23	10	55	15	11	12	6.6
25	8.5	5.9	12	11	16	23	11	52	16	10	12	3.7
26	6.1	8.0	12	11	16	22	9.5	50	18	11	12	8.5
27	5.1	8.5	12	10	17	22	9.5	33	14	12	11	15
28	5.0	8.7	12	11	19	32	9.8	29	15	12	12	16
29	4.9	8.9	12	13	---	43	8.4	26	14	11	11	13
30	4.8	9.3	12	13	---	38	13	22	13	11	10	13
31	4.3	---	12	14	---	32	---	77	---	12	10	---
TOTAL	213.5	221.1	329.7	364	403	1,526	458.5	2,070.5	762	463	467.3	386.6
MEAN	6.89	7.37	10.6	11.7	14.4	49.2	15.3	66.8	25.4	14.9	15.1	12.9
MAX	11	11	14	14	19	181	31	182	83	33	24	30
MIN	2.6	2.5	8.2	10	12	16	8.4	7.9	13	10	8.2	3.7
CFSM	0.04	0.05	0.07	0.07	0.09	0.31	0.10	0.43	0.16	0.10	0.10	0.08
IN.	0.05	0.05	0.08	0.09	0.10	0.36	0.11	0.49	0.18	0.11	0.11	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2003, BY WATER YEAR (WY)

MEAN	69.2	92.7	79.6	74.8	76.0	153	172	106	115	94.1	66.1	56.1
MAX	446	350	289	281	182	312	527	449	369	561	287	282
(WY)	(1987)	(1986)	(1986)	(1986)	(1986)	(1994)	(1993)	(1993)	(1993)	(1993)	(1999)	(1986)
MIN	2.89	6.66	10.6	11.7	14.4	10.9	3.97	4.55	4.86	2.86	3.05	5.13
(WY)	(1989)	(1989)	(2003)	(2003)	(2003)	(1988)	(2000)	(1989)	(1985)	(1988)	(1988)	(1988)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1985 - 2003

ANNUAL TOTAL	22,451.2		7,665.2		96.5	
ANNUAL MEAN	61.5		21.0		244	
HIGHEST ANNUAL MEAN					1993	
LOWEST ANNUAL MEAN					21.0	
HIGHEST DAILY MEAN	320	Jun 12	182	May 20	657	Jul 12, 1993
LOWEST DAILY MEAN	2.5	Nov 24	2.5	Nov 24	0.64	Oct 30, 1988
ANNUAL SEVEN-DAY MINIMUM	4.5	Oct 28	4.5	Oct 28	0.77	Feb 11, 1987
MAXIMUM PEAK FLOW			427	Jun 3	(a)758	Jul 9, 1993
MAXIMUM PEAK STAGE			8.15	Jun 3	9.35	Sep 26, 1986
INSTANTANEOUS LOW FLOW			1.3	Oct 5	1.3	Oct 5, 2002
ANNUAL RUNOFF (CFSM)	0.39		0.13		0.61	
ANNUAL RUNOFF (INCHES)	5.32		1.82		8.35	
10 PERCENT EXCEEDS	228		35		258	
50 PERCENT EXCEEDS	29		12		47	
90 PERCENT EXCEEDS	6.9		7.8		7.7	

(a) Gage height, 9.32 ft

05426000 CRAWFISH RIVER AT MILFORD, WI

LOCATION.--Lat 43°06'00", long 88°50'58", in NW ¼ SW ¼ sec.4, T.7 N., R.14 E., Jefferson County, Hydrologic Unit 07090002, on left bank near upstream side of highway bridge in Milford, 1.4 mi downstream from Rock Creek and 9.8 mi upstream from mouth.

DRAINAGE AREA.--762 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1931 to current year.

REVISED RECORDS.--WSP 975: 1937-38. WSP 1438: 1932-33(M), 1935(M), 1937, 1938-41(M), 1943-44(M), 1947-48(M). WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 779.40 ft above NGVD of 1929. Prior to July 28, 1966, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Some diurnal fluctuation at lower flows, due to manipulation of gates on small dams upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	102	e120	e120	e55	e67	318	342	270	135	69	43
2	97	98	e98	e110	e57	e64	313	461	279	122	68	39
3	96	92	e90	e110	e56	e59	285	529	288	106	79	38
4	95	101	e85	e110	e53	e56	284	536	286	113	93	43
5	135	100	e80	105	e50	e52	286	560	260	111	97	31
6	122	102	e76	105	e48	e53	258	571	233	109	106	26
7	157	76	e80	104	e45	e58	279	573	225	118	120	32
8	131	80	e76	107	e45	e55	272	561	221	123	112	33
9	152	86	e78	113	e44	e50	245	563	237	127	98	29
10	132	117	79	e110	e44	e45	238	622	225	126	88	27
11	115	135	80	e100	e44	e47	254	598	252	120	84	22
12	116	118	83	e91	e43	e54	269	768	253	104	76	20
13	113	130	88	e86	e44	e60	245	806	257	90	67	30
14	80	166	93	e80	e46	e68	211	849	246	76	62	74
15	108	185	99	e75	e44	e79	225	874	236	114	61	74
16	103	168	99	e70	e44	e93	293	858	211	133	59	74
17	91	156	102	e66	e47	e110	267	822	193	153	55	67
18	76	141	114	e62	e51	e220	257	766	173	167	52	73
19	104	137	136	e58	e58	e290	234	698	168	149	45	86
20	101	143	e140	e54	e64	e330	242	719	143	135	40	71
21	90	164	e160	e50	e68	e350	325	646	129	138	43	58
22	114	149	e150	e48	e64	350	349	607	117	127	55	62
23	109	123	e150	e44	e60	337	336	571	107	108	46	54
24	97	142	e140	e44	e55	346	329	530	98	85	35	49
25	102	114	e130	e44	e51	329	332	475	100	64	45	48
26	115	110	e120	e44	e53	286	293	419	130	59	46	34
27	115	105	e120	e44	e58	251	235	359	127	84	46	42
28	110	100	122	e45	e63	256	251	322	150	82	33	51
29	108	102	122	e44	---	285	231	306	157	71	48	40
30	114	e110	123	e48	---	293	228	244	145	60	49	40
31	109	---	e120	e52	---	301	---	296	---	62	43	---
TOTAL	3,378	3,652	3,353	2,343	1,454	5,294	8,184	17,851	5,916	3,371	2,020	1,410
MEAN	109	122	108	75.6	51.9	171	273	576	197	109	65.2	47.0
MAX	157	185	160	120	68	350	349	874	288	167	120	86
MIN	71	76	76	44	43	45	211	244	98	59	33	20
CFSM	0.14	0.16	0.14	0.10	0.07	0.22	0.36	0.76	0.26	0.14	0.09	0.06
IN.	0.16	0.18	0.16	0.11	0.07	0.26	0.40	0.87	0.29	0.16	0.10	0.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2003, BY WATER YEAR (WY)

	MEAN	268	298	250	237	312	1,010	974	515	386	294	200	238
MAX	2,565	1,958	1,065	1,278	1,576	2,473	3,206	2,337	2,263	2,189	899	1,881	
(WY)	(1987)	(1986)	(1983)	(1946)	(1938)	(1948)	(1959)	(1973)	(2000)	(1993)	(1993)	(1986)	
MIN	16.8	25.9	18.0	15.2	16.2	56.2	193	73.8	34.4	17.9	18.0	8.11	
(WY)	(1964)	(1950)	(1959)	(1940)	(1959)	(1940)	(1964)	(1958)	(1934)	(1965)	(1964)	(1958)	

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1931 - 2003	
ANNUAL TOTAL	127,326		58,226			
ANNUAL MEAN	349		160		416	
HIGHEST ANNUAL MEAN					1,117	
LOWEST ANNUAL MEAN					61.8	
HIGHEST DAILY MEAN	1,220	Mar 14	874	May 15	6,130	Apr 6, 1959
LOWEST DAILY MEAN	50	Sep 2	20	Sep 12	0.30	Sep 15, 1958
ANNUAL SEVEN-DAY MINIMUM	59	Sep 13	27	Sep 6	1.5	Sep 11, 1958
MAXIMUM PEAK FLOW			882	May 15	6,140	Apr 6, 1959
MAXIMUM PEAK STAGE			3.70	May 15	11.15	Apr 6, 1959
ANNUAL RUNOFF (CFSM)	0.46		0.21		0.55	
ANNUAL RUNOFF (INCHES)	6.22		2.84		7.42	
10 PERCENT EXCEEDS	859		329		1,080	
50 PERCENT EXCEEDS	197		107		198	
90 PERCENT EXCEEDS	79		45		40	

(e) Estimated due to ice effect or missing record

05426067 BARK RIVER AT NAGAWICKA ROAD AT DELAFIELD, WI

LOCATION.--Lat 43°05'16" long 88°22'34", in NE ¼ NW ¼ sec.9, T.7 N., R.18 E., Waukesha County, Hydrologic Unit 07090001, on left bank 20 ft upstream from Nagawicka Road in Delafield.

DRAINAGE AREA.--35.9 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

GAGE.--Water-stage recorder.

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	17	e14	13	e10	e10	15	51	27	15	18	10
2	---	17	e14	14	e11	e9.8	19	41	25	15	18	9.8
3	---	18	14	13	e11	e9.6	20	36	23	14	21	9.5
4	---	17	14	14	e10	e9.4	22	31	22	14	22	9.3
5	---	17	14	14	e9.8	e9.4	20	36	21	15	16	8.9
6	---	17	14	14	e9.6	e9.2	18	33	20	19	14	9.5
7	---	17	14	14	e9.4	e9.2	18	39	21	21	16	9.3
8	---	16	14	14	e9.2	e9.2	17	42	28	18	15	9.1
9	---	17	13	14	e9.0	e9.0	17	58	24	16	14	9.7
10	---	18	14	e14	e9.0	e9.0	18	51	23	15	13	9.8
11	---	19	14	e13	e9.0	e9.2	19	58	25	14	13	9.4
12	---	19	14	e12	e9.0	e9.4	20	62	24	13	13	9.5
13	---	18	14	e12	e9.2	e9.8	19	54	21	13	13	12
14	---	18	14	e12	e9.2	e12	20	48	20	12	12	19
15	---	18	14	e11	e9.2	20	20	44	19	20	12	14
16	---	18	14	e11	e9.2	23	20	37	18	19	12	12
17	---	17	14	e11	e9.2	22	19	36	18	9.7	12	11
18	---	17	21	e11	e9.6	22	18	33	18	11	11	11
19	---	18	20	e11	e10	21	18	30	18	11	11	11
20	---	18	19	e11	e11	20	20	32	16	12	11	11
21	---	19	18	e10	e11	20	20	30	16	12	9.6	11
22	---	18	e16	e10	e10	20	19	29	15	12	9.5	11
23	---	18	e13	e9.0	e9.8	19	18	26	14	11	9.2	11
24	---	18	e13	e9.0	e9.4	18	19	25	13	11	9.2	10
25	---	18	e13	e9.0	e9.0	17	18	24	14	10	9.2	9.4
26	---	e18	e13	e9.0	e9.0	16	19	23	14	11	9.9	9.9
27	---	e17	e13	e9.0	e9.2	16	18	21	14	11	10	10
28	---	e16	e14	e9.0	e9.6	18	17	23	17	11	11	10
29	e19	e15	14	e9.0	---	18	18	23	16	11	11	10
30	18	e14	14	e9.0	---	17	24	23	16	13	11	9.9
31	17	---	14	e10	---	16	---	30	---	16	11	---
TOTAL	54	522	452	355.0	269.6	457.2	567	1,129	580	425.7	397.6	317.0
MEAN	18.0	17.4	14.6	11.5	9.63	14.7	18.9	36.4	19.3	13.7	12.8	10.6
MAX	19	19	21	14	11	23	24	62	28	21	22	19
MIN	17	14	13	9.0	9.0	9.0	15	21	13	9.7	9.2	8.9

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

MEAN	---	17.4	14.6	11.5	9.63	14.7	18.9	36.4	19.3	13.7	12.8	10.6
MAX	---	17.4	14.6	11.5	9.63	14.7	18.9	36.4	19.3	13.7	12.8	10.6
(WY)	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	---	17.4	14.6	11.5	9.63	14.7	18.9	36.4	19.3	13.7	12.8	10.6
(WY)	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

FOR 2003 WATER YEAR  
(NOVEMBER-SEPTEMBER)

SUMMARY STATISTICS

ANNUAL MEAN	16.4
HIGHEST DAILY MEAN	62 May 12
LOWEST DAILY MEAN	8.9 Sep 5
ANNUAL SEVEN-DAY MINIMUM	9.0 Jan 23
MAXIMUM PEAK FLOW	70 May 11-12
MAXIMUM PEAK STAGE	13.11 May 11-12
10 PERCENT EXCEEDS	23
50 PERCENT EXCEEDS	14
90 PERCENT EXCEEDS	9.3

(e) Estimated due to ice effect or missing record

## 05426067 BARK RIVER AT NAGAWICKA ROAD AT DELAFIELD, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: November 2002 to September 2003.

TOTAL-PHOSPHORUS DISCHARGE: November 2002 to September 2003.

INSTRUMENTATION.--Refrigerated automatic pumping sampler since November 2002.

REMARKS.--Records good.

EXTREMES FOR CURRENT PERIOD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 312 mg/L, May 1; minimum observed, 11 mg/L, Sept. 16.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 17 tons, May 9; minimum daily, 0.14 ton, Sept. 30.

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.59 mg/L, May 1; minimum observed, &lt;0.02 mg/L, Feb. 13.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 41.1 lb, May 9; minimum daily, 0.80 lb, Feb. 25-27 and Mar. 6-8.

SUSPENDED SEDIMENT LOAD, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	2.7	e2.1	1.7	e0.62	e0.38	1.6	15	e5.7	0.82	1.9	0.65
2	---	2.8	e2.1	1.8	e0.65	e0.37	1.8	3.7	e5.3	0.78	1.2	0.63
3	---	2.8	2.1	1.7	e0.62	e0.36	e1.9	2.2	4.8	0.73	e2.4	0.61
4	---	2.7	2.2	1.7	e0.57	e0.36	e2.1	e1.0	3.9	0.72	e1.5	0.59
5	---	2.8	2.1	1.7	e0.53	e0.36	e1.9	e1.8	3.1	0.76	0.72	0.54
6	---	2.8	2.2	1.7	e0.52	e0.35	e1.7	0.98	2.5	e3.3	0.68	0.56
7	---	2.7	2.2	1.7	e0.48	e0.35	1.3	3.5	e4.4	e4.0	0.76	0.54
8	---	2.6	2.1	1.7	e0.45	e0.35	1.1	5.7	e5.9	e2.9	0.74	0.51
9	---	2.7	2.1	1.7	e0.44	e0.44	1.0	17	e5.0	1.7	0.67	0.53
10	---	2.9	2.1	e1.6	e0.41	e0.66	1.0	14	e4.9	1.5	0.66	0.52
11	---	3.1	2.1	e1.4	e0.41	e0.99	1.0	16	e5.3	1.3	0.66	0.48
12	---	3.0	2.1	e1.3	e0.39	e1.5	0.99	12	e5.0	1.2	0.66	0.51
13	---	2.9	2.1	e1.3	e0.40	e2.2	0.88	11	e4.4	1.1	0.65	0.67
14	---	2.9	2.1	e1.2	e0.40	e2.7	0.87	8.9	1.7	0.95	0.62	2.5
15	---	2.9	2.1	e1.1	e0.40	4.3	0.84	7.3	1.6	e3.7	0.63	0.98
16	---	2.8	2.1	e1.1	e0.40	4.8	0.77	5.7	1.4	e3.3	0.61	0.38
17	---	2.7	2.0	e1.0	e0.40	4.4	0.72	5.0	1.3	0.71	0.63	0.32
18	---	2.7	e4.0	e1.0	e0.39	4.2	0.64	4.1	1.3	0.78	0.61	0.29
19	---	2.9	e3.7	e1.0	e0.40	3.9	0.65	3.5	1.2	0.81	0.60	0.27
20	---	2.9	e3.4	e0.95	e0.44	3.5	0.68	3.4	1.0	0.83	0.59	0.27
21	---	3.0	2.6	e0.84	e0.44	3.3	0.66	2.9	0.97	0.83	0.54	0.26
22	---	2.9	e2.3	e0.81	e0.40	3.2	0.60	2.5	0.91	0.81	0.54	0.24
23	---	2.8	e1.8	e0.70	e0.40	2.9	0.56	2.1	0.86	0.78	0.53	0.23
24	---	2.8	e1.8	e0.68	e0.38	2.7	0.58	1.8	0.78	0.74	0.53	0.20
25	---	2.8	e1.8	e0.68	e0.36	2.5	0.52	1.6	0.81	0.68	0.54	0.17
26	---	e2.8	e1.8	e0.66	e0.36	2.2	0.52	1.4	0.80	0.70	0.58	0.17
27	---	e2.7	e1.7	e0.63	e0.37	2.1	0.49	1.2	0.81	0.70	0.60	0.17
28	---	e2.5	e1.9	e0.61	e0.39	2.3	0.45	1.2	0.94	0.69	0.65	0.16
29	---	e2.3	e1.8	e0.60	---	2.1	0.46	1.2	0.89	0.67	0.70	0.15
30	---	e2.2	e1.8	e0.58	---	1.9	2.1	1.2	0.86	1.3	0.68	0.14
31	---	---	e1.8	e0.62	---	1.8	---	e6.3	---	0.98	0.66	---
TOTAL	---	83.1	68.1	35.76	12.42	63.47	30.38	165.18	78.33	40.77	24.04	14.24

e Estimated

## 05426067 BARK RIVER AT NAGAWICKA ROAD AT DELAFIELD, WI—Continued

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	2.00	e1.50	1.58	e1.10	e0.90	4.87	40.2	6.71	6.35	7.29	2.12
2	---	2.06	e1.50	1.63	e1.20	e0.90	e7.70	16.4	6.54	6.34	6.47	2.00
3	---	2.06	1.45	1.63	e1.20	e0.90	e8.40	13.4	6.44	6.17	e10.4	1.90
4	---	2.00	1.50	1.69	e1.10	e0.90	e9.80	10.6	5.63	6.37	e11.1	1.78
5	---	2.02	1.48	1.75	e1.00	e0.90	e8.40	e19.8	5.05	7.00	5.66	1.64
6	---	2.00	1.52	1.76	e1.00	e0.80	e7.00	10.5	4.79	e8.80	4.52	1.67
7	---	1.95	1.52	1.80	e1.00	e0.80	e7.00	15.4	e5.40	e10.4	4.93	1.58
8	---	1.90	1.46	1.87	e0.90	e0.80	e6.20	18.0	e10.3	8.89	4.71	1.48
9	---	1.96	1.42	1.89	e0.90	e1.00	e6.00	41.1	e7.50	8.06	4.11	1.51
10	---	2.06	1.44	e1.90	e0.90	e1.30	e7.00	37.4	e6.80	6.96	3.93	1.47
11	---	2.21	1.42	e1.70	e0.90	e1.70	e7.70	39.1	e8.20	5.79	3.85	1.35
12	---	2.12	1.43	e1.60	e0.90	e2.30	e8.40	33.0	5.60	4.86	3.73	1.71
13	---	2.08	1.43	e1.50	e0.90	e3.00	e7.00	29.2	5.18	4.17	3.60	e3.98
14	---	2.09	1.44	e1.50	e0.90	e4.30	e8.00	24.8	4.97	3.58	3.34	e10.2
15	---	2.06	1.43	e1.40	e0.90	e10.8	9.03	21.4	4.98	e9.60	3.29	e4.53
16	---	2.03	1.37	e1.40	e0.90	e13.2	8.60	17.3	4.88	e8.80	3.12	2.36
17	---	1.92	1.24	e1.30	e0.90	e12.4	7.90	15.7	4.90	2.58	3.08	2.00
18	---	1.91	e2.40	e1.30	e0.90	6.25	7.00	13.4	5.19	2.84	2.93	1.84
19	---	2.05	e2.30	e1.30	e1.00	5.96	6.91	11.8	5.14	2.96	2.80	1.76
20	---	2.04	e2.20	e1.30	e1.10	5.67	7.15	11.9	4.89	3.01	2.69	1.79
21	---	2.12	e2.10	e1.20	e1.10	5.74	6.86	10.4	4.87	3.04	2.37	1.76
22	---	2.04	e1.60	e1.20	e1.00	5.71	6.19	9.31	4.77	2.95	2.30	1.67
23	---	1.98	e1.50	e1.10	e0.90	5.46	5.69	8.09	4.68	2.83	2.20	1.61
24	---	2.00	e1.50	e1.10	e0.90	5.38	5.73	7.26	4.45	2.70	2.16	1.41
25	---	1.96	e1.30	e1.00	e0.80	5.21	5.14	6.53	4.85	2.49	2.13	1.24
26	---	e1.90	e1.30	e1.00	e0.80	4.90	5.04	5.89	4.95	2.55	2.24	1.26
27	---	e1.80	e1.30	e1.00	e0.80	4.89	4.66	5.13	5.25	2.54	2.24	1.24
28	---	e1.70	e1.40	e1.00	e0.90	e9.20	4.24	e6.80	6.41	2.53	2.36	1.21
29	---	e1.60	1.55	e1.00	---	e9.00	4.22	e6.80	6.32	2.44	2.49	1.17
30	---	e1.50	1.57	e1.00	---	5.17	15.3	e6.80	6.35	5.19	2.33	1.08
31	---	---	1.59	e1.10	---	5.03	---	e11.7	---	6.51	2.21	---
TOTAL	---	59.12	48.16	43.50	26.80	140.47	213.13	525.11	171.99	159.30	120.58	62.32

e Estimated



## 05426067 BARK RIVER AT NAGAWICKA ROAD AT DELAFIELD, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Discharge, cfs (00060)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Ortho- phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
OCT 2002							
31...	1500	--	17	10	--	0.022	60
DEC							
16...	1100	--	14	10	0.004	0.019	56
JAN 2003							
08...	0925	--	14	10	--	0.025	45
FEB							
13...	1030	9.2	--	10	--	0.018	16
MAR							
13...	1025	9.8	--	10	0.008	0.060	88
APR							
02...	1400	--	20	10	--	0.059	37
02...	1405	--	20	50	--	0.108	175
15...	1445	--	19	10	--	0.085	15
30...	1615	--	31	50	--	0.126	46
30...	1830	--	29	50	--	0.100	29
MAY							
01...	0001	--	45	50	--	0.589	286
01...	0200	--	64	50	--	0.327	312
01...	0400	--	66	50	0.017	0.237	239
01...	0600	--	63	50	--	0.192	166
01...	1000	--	52	50	--	0.118	50
01...	1600	--	45	50	0.007	0.093	31
02...	0001	--	45	50	--	0.106	51
02...	0800	--	42	50	--	0.081	31
02...	1800	--	39	50	--	0.089	38
05...	1425	--	34	10	--	0.069	13
05...	1426	--	34	50	--	0.083	23
07...	1530	--	46	50	--	0.108	58
07...	1730	--	48	50	--	0.120	67
07...	2330	--	45	50	--	0.104	63
08...	0530	--	41	50	--	0.092	53
09...	0045	--	43	50	--	0.098	57
09...	0500	--	63	50	--	0.210	172
09...	0900	--	66	50	--	0.167	120
09...	1146	--	64	10	--	0.129	137
09...	1147	--	64	50	--	0.152	108
09...	2015	--	55	50	--	0.143	114
10...	0515	--	51	50	--	0.152	108
10...	2315	--	49	50	--	0.172	148
11...	0515	--	57	50	--	0.167	144
11...	1115	--	52	50	--	0.135	89
11...	1715	--	62	50	--	0.142	100
11...	2315	--	69	50	--	0.147	108
12...	0815	--	67	50	--	0.109	70
13...	0530	--	57	50	--	0.120	88
14...	1745	--	44	50	--	0.113	72
JUN							
03...	1020	--	24	10	--	0.052	82
JUL							
09...	1315	--	14	10	--	0.096	41
30...	1815	--	17	50	--	0.122	54
30...	2030	--	21	50	--	0.208	98
30...	2230	--	19	50	--	0.114	46
31...	0030	--	19	50	--	0.108	35
31...	0430	--	18	50	--	0.111	25
31...	1155	--	15	10	--	0.076	23
AUG							
01...	0600	--	18	50	--	0.127	77
01...	0800	--	19	50	--	0.127	81
01...	1200	--	19	50	--	0.085	41
02...	0001	--	18	50	--	0.075	23
02...	1200	--	19	50	--	0.078	28
03...	0715	--	18	50	--	0.080	26
04...	1115	--	22	10	0.041	0.093	17
SEP							
03...	1030	--	9.6	10	--	0.037	24
13...	1230	--	14	50	--	0.118	53
13...	1600	--	12	50	--	0.062	13
14...	1100	--	20	50	--	0.195	144
14...	1300	--	30	50	--	0.177	92
14...	1600	--	26	50	--	0.146	86
14...	1900	--	21	50	--	0.115	41
14...	2200	--	21	50	--	0.134	85
15...	0100	--	17	50	--	0.092	36
15...	0400	--	16	50	--	0.082	35
15...	1000	--	14	50	--	0.077	37
15...	1930	--	13	50	--	0.052	15
16...	1215	--	12	10	--	0.034	11

## ROCK RIVER BASIN

05426070 BARK RIVER AT DELAFIELD, WI

LOCATION.--Lat 43°03'46" long 88°24'09", in SW ¼ SW ¼ sec.17, T.7 N., R.18 E., Waukesha County, Hydrologic Unit 07090001, on right bank about 200 ft downstream from dam and 140 ft upstream from County Highway C in Delafield.

DRAINAGE AREA.--44.9 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

GAGE.--Water-stage recorder.

REMARKS.--Records good (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	14	17	16	15	2.5	20	24	18	6.9	39	2.8
2	---	13	16	16	15	2.6	20	30	25	7.2	38	2.7
3	---	13	16	16	15	2.5	19	30	29	7.4	36	3.2
4	---	13	16	16	15	2.4	19	30	23	7.6	27	2.2
5	---	13	16	16	15	2.3	19	31	14	7.7	21	2.0
6	---	13	16	16	15	2.4	19	54	14	12	16	2.1
7	---	13	16	16	15	2.6	20	64	12	19	10	2.1
8	---	11	16	16	15	2.8	19	64	13	24	10	2.1
9	---	9.1	16	16	15	2.8	16	64	28	36	11	2.2
10	---	9.3	16	16	15	2.9	12	64	34	25	11	2.2
11	---	8.7	16	16	15	2.9	11	65	34	11	11	2.1
12	---	8.3	16	16	15	3.0	11	84	22	11	11	2.0
13	---	8.1	16	16	15	3.1	11	77	16	10	7.2	2.1
14	---	8.3	16	16	15	13	12	49	16	10	4.9	11
15	---	8.2	16	16	15	46	14	48	16	11	4.6	22
16	---	7.9	16	16	15	76	13	48	16	11	4.2	14
17	---	7.6	16	16	14	40	12	47	16	10	4.1	12
18	---	7.9	17	16	14	21	11	47	11	9.7	4.3	5.3
19	---	40	49	16	7.9	21	11	28	13	9.7	4.1	2.4
20	---	58	42	16	3.1	16	12	18	17	9.6	3.9	2.3
21	---	58	16	16	3.2	11	11	18	11	7.6	3.6	2.3
22	---	57	16	16	2.9	11	9.9	18	7.7	4.3	3.3	2.4
23	---	57	16	16	2.7	11	10	18	7.7	4.2	3.2	2.5
24	---	56	16	15	2.6	8.5	9.9	18	7.2	4.3	3.1	2.5
25	---	56	16	16	2.6	6.9	9.7	18	7.3	4.4	3.2	2.4
26	---	56	16	16	2.5	6.0	9.1	17	7.8	4.5	3.4	2.4
27	---	30	16	15	2.5	5.8	9.1	17	4.9	4.4	3.2	2.4
28	---	16	16	15	2.5	16	9.1	17	1.8	4.1	3.0	2.3
29	---	17	16	15	---	20	8.9	17	6.0	3.7	3.0	2.3
30	---	17	16	15	---	20	8.9	17	7.3	3.4	2.9	2.3
31	---	---	16	15	---	20	---	18	---	17	2.8	---
TOTAL	---	704.4	557	490	300.5	404.0	396.6	1,159	455.7	317.7	313.0	122.6
MEAN	---	23.5	18.0	15.8	10.7	13.0	13.2	37.4	15.2	10.2	10.1	4.09
MAX	---	58	49	16	15	76	20	84	34	36	39	22
MIN	---	7.6	16	15	2.5	2.3	8.9	17	1.8	3.4	2.8	2.0
CFSM	---	0.52	0.40	0.35	0.24	0.29	0.29	0.83	0.34	0.23	0.22	0.09
IN.	---	0.58	0.46	0.41	0.25	0.33	0.33	0.96	0.38	0.26	0.26	0.10

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

MEAN	---	23.5	18.0	15.8	10.7	13.0	13.2	37.4	15.2	10.2	10.1	4.09
MAX	---	23.5	18.0	15.8	10.7	13.0	13.2	37.4	15.2	10.2	10.1	4.09
(WY)	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	---	23.5	18.0	15.8	10.7	13.0	13.2	37.4	15.2	10.2	10.1	4.09
(WY)	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

FOR 2003 WATER YEAR  
(NOVEMBER-SEPTEMBER)

## SUMMARY STATISTICS

ANNUAL TOTAL	5,220.5
ANNUAL MEAN	15.6
HIGHEST DAILY MEAN	84 May 12
LOWEST DAILY MEAN	1.8 Jun 28
ANNUAL SEVEN-DAY MINIMUM	2.1 Sep 5
MAXIMUM PEAK FLOW	95 May 12
MAXIMUM PEAK STAGE	3.2 May 12
ANNUAL RUNOFF (CFSM)	0.35
ANNUAL RUNOFF (IN CHES)	4.33
10 PERCENT EXCEEDS	30
50 PERCENT EXCEEDS	14
90 PERCENT EXCEEDS	2.6

## 05426070 BARK RIVER AT DELAFIELD, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: November 2002 to September 2003.

TOTAL-PHOSPHORUS DISCHARGE: November 2002 to September 2003.

REMARKS.--Records good. Samples collected using equal-width increment method (EWI) unless otherwise noted.

EXTREMES FOR CURRENT PERIOD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 46 mg/L, Mar. 13; minimum observed, 2 mg/L, Aug. 4 and Sept. 3.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 8.0 tons, Mar. 16; minimum daily, 0.01 ton, on many days.

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.053 mg/L, Sept. 3; minimum observed, 0.008 mg/L, Feb. 13.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 5.99 lb, May 12; minimum daily, 0.12 lb, on many days.

SUSPENDED SEDIMENT LOAD, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1.3	0.97	0.27	0.16	0.09	0.88	1.1	1.5	0.19	0.28	0.01
2	---	1.2	0.95	0.26	0.16	0.10	0.83	1.3	2.2	0.19	0.25	0.01
3	---	1.2	0.93	0.24	0.16	0.11	0.78	1.3	2.7	0.18	0.21	0.02
4	---	1.2	0.91	0.23	0.16	0.12	0.81	1.2	2.0	0.18	0.15	0.01
5	---	1.1	0.90	0.21	0.16	0.12	0.84	1.3	1.2	0.17	0.12	0.01
6	---	1.1	0.87	0.20	0.16	0.14	0.88	2.4	1.1	0.25	0.09	0.01
7	---	1.1	0.86	0.19	0.16	0.17	0.96	3.1	0.95	0.40	0.05	0.01
8	---	0.94	0.83	0.18	0.16	0.20	0.98	3.3	0.96	0.47	0.05	0.01
9	---	0.76	0.82	0.18	0.16	0.23	0.84	3.5	2.0	0.68	0.06	0.01
10	---	0.77	0.81	0.18	0.16	0.26	0.67	2.8	2.3	0.47	0.06	0.01
11	---	0.71	0.79	0.18	0.16	0.29	0.65	2.3	2.2	0.19	0.06	0.01
12	---	0.67	0.78	0.18	0.16	0.33	0.66	2.4	1.4	0.18	0.06	0.01
13	---	0.64	0.77	0.18	0.16	0.38	0.68	2.2	0.93	0.17	0.04	0.01
14	---	0.64	0.76	0.17	0.17	1.5	0.80	1.5	0.90	0.16	0.03	0.06
15	---	0.62	0.74	0.17	0.17	5.0	0.90	1.5	0.86	0.17	0.03	0.12
16	---	0.59	0.73	0.17	0.17	8.0	0.85	1.6	0.83	0.17	0.02	0.07
17	---	0.56	0.70	0.17	0.16	4.0	0.76	1.7	0.81	0.15	0.02	0.07
18	---	0.57	0.67	0.17	0.16	2.0	0.72	1.8	0.54	0.13	0.02	0.03
19	---	2.8	1.8	0.17	0.09	1.9	0.69	1.1	0.61	0.13	0.02	0.01
20	---	4.1	1.5	0.17	0.04	1.3	0.69	0.77	0.75	0.12	0.02	0.01
21	---	4.0	0.55	0.17	0.05	0.85	0.63	0.81	0.46	0.09	0.02	0.01
22	---	3.9	0.51	0.17	0.05	0.82	0.56	0.84	0.31	0.05	0.02	0.01
23	---	3.8	0.48	0.17	0.05	0.76	0.55	0.88	0.30	0.05	0.02	0.01
24	---	3.7	0.45	0.17	0.05	0.57	0.53	0.93	0.26	0.05	0.02	0.01
25	---	3.6	0.43	0.17	0.06	0.44	0.51	0.97	0.26	0.05	0.02	0.01
26	---	3.5	0.40	0.17	0.06	0.36	0.46	1.0	0.26	0.04	0.02	0.01
27	---	1.9	0.38	0.17	0.07	0.33	0.45	1.1	0.16	0.04	0.02	0.01
28	---	1.0	0.35	0.17	0.08	0.87	0.44	1.1	0.06	0.04	0.02	0.01
29	---	1.0	0.33	0.17	---	1.0	0.42	1.2	0.18	0.03	0.02	0.01
30	---	1.0	0.31	0.16	---	0.97	0.41	1.2	0.21	0.03	0.02	0.01
31	---	---	0.29	0.17	---	0.92	---	1.4	---	0.14	0.02	---
TOTAL	---	49.97	22.57	5.73	3.51	34.13	20.83	49.60	29.20	5.36	1.86	0.61

## ROCK RIVER BASIN

05426070 BARK RIVER AT DELAFIELD, WI—Continued

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	0.81	1.04	1.06	0.75	0.12	1.51	1.68	1.50	0.65	3.50	0.22
2	---	0.77	1.03	1.06	0.74	0.13	1.53	2.15	2.17	0.68	3.36	0.22
3	---	0.76	1.03	1.06	0.74	0.12	1.41	2.11	2.55	0.70	3.14	0.26
4	---	0.76	1.03	1.06	0.72	0.12	1.41	2.11	2.00	0.73	2.36	0.18
5	---	0.76	1.04	1.06	0.71	0.12	1.41	2.21	1.20	0.74	1.84	0.16
6	---	0.77	1.03	1.06	0.71	0.12	1.42	4.09	1.20	1.14	1.39	0.17
7	---	0.77	1.02	1.07	0.70	0.13	1.48	5.13	1.08	1.84	0.87	0.17
8	---	0.66	1.02	1.06	0.69	0.14	1.46	5.47	1.15	2.29	0.87	0.17
9	---	0.55	1.02	1.04	0.68	0.15	1.21	5.79	2.46	3.48	0.92	0.18
10	---	0.56	1.02	1.03	0.67	0.15	0.91	5.38	3.00	2.46	0.92	0.18
11	---	0.53	1.02	1.02	0.67	0.15	0.85	5.00	3.05	1.04	0.92	0.17
12	---	0.51	1.02	1.01	0.66	0.16	0.83	5.99	1.96	1.02	0.92	0.16
13	---	0.49	1.03	1.00	0.65	0.17	0.83	5.44	1.39	0.99	0.61	0.17
14	---	0.51	1.03	0.97	0.66	0.71	0.93	3.47	1.43	1.00	0.41	0.84
15	---	0.50	1.03	0.95	0.66	2.56	1.02	3.49	1.43	1.07	0.39	1.70
16	---	0.48	1.03	0.95	0.67	4.31	0.97	3.50	1.44	1.09	0.36	1.06
17	---	0.47	1.05	0.94	0.63	2.28	0.89	3.47	1.46	0.99	0.34	0.96
18	---	0.48	1.08	0.92	0.62	1.22	0.86	3.49	1.03	0.92	0.36	0.41
19	---	2.45	3.16	0.91	0.36	1.25	0.84	2.07	1.23	0.92	0.34	0.18
20	---	3.59	2.74	0.90	0.14	0.96	0.86	1.38	1.57	0.90	0.32	0.18
21	---	3.57	1.06	0.89	0.15	0.66	0.80	1.39	1.00	0.72	0.30	0.18
22	---	3.52	1.06	0.88	0.13	0.68	0.73	1.37	0.71	0.41	0.27	0.19
23	---	3.51	1.06	0.86	0.13	0.68	0.73	1.37	0.71	0.39	0.26	0.19
24	---	3.48	1.06	0.84	0.12	0.55	0.72	1.39	0.67	0.40	0.26	0.19
25	---	3.49	1.06	0.83	0.12	0.46	0.70	1.39	0.68	0.41	0.26	0.18
26	---	3.46	1.06	0.82	0.12	0.40	0.66	1.39	0.72	0.42	0.28	0.18
27	---	1.87	1.06	0.81	0.12	0.39	0.66	1.39	0.46	0.41	0.27	0.18
28	---	1.03	1.06	0.80	0.12	1.12	0.66	1.38	0.17	0.38	0.25	0.17
29	---	1.05	1.06	0.79	---	1.42	0.64	1.41	0.56	0.34	0.25	0.18
30	---	1.06	1.06	0.77	---	1.44	0.64	1.40	0.69	0.31	0.24	0.17
31	---	---	1.06	0.77	---	1.46	---	1.51	---	1.56	0.23	---
TOTAL	---	43.22	36.13	29.19	13.84	24.33	29.57	88.81	40.67	30.40	27.01	9.55

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
OCT 2002						
31...	1400	14	10	--	0.011	36
DEC						
16...	1305	16	10	--	0.012	17
JAN 2003						
08...	1115	16	10	--	0.012	4
FEB						
13...	1225	15	10	--	0.008	4
MAR						
13...	1150	3.1	10	--	0.010	46
APR						
02...	1550	20	10	--	0.014	15
15...	1600	13	10	--	0.014	25
MAY						
05...	1305	31	10	--	0.013	15
09...	1045	64	10	--	0.017	21
12...	1305	94	10	--	0.013	10
JUN						
03...	1205	30	10	--	0.016	34
JUL						
09...	1515	36	10	--	0.018	7
31...	1300	9.2	10	--	0.017	3
AUG						
04...	1245	22	10	0.004	0.016	2
SEP						
03...	1230	3.3	70	--	0.053	2

## 430347088240800 NAGAWICKA LAKE AT DELAFIELD, WI

LOCATION.--Lat 43°03'47", long 88°24'08", in SW ¼ SW ¼ sec.17, T.7 N., R.18 E., Waukesha County, Hydrologic Unit 07090001, on dike of Nagawicka Lake dam about 120 ft west of gates in Delafield.

DRAINAGE AREA.--44.9 mi<sup>2</sup>. Area of Nagawicka Lake, 917 acres.

## GAGE-HEIGHT RECORD

PERIOD OF RECORD.--October 2002 to September 2003.

GAGE.--Water-stage recorder.

REMARKS.--Gage established Oct. 29, 2002. Lake levels controlled by city of Delafield.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 8.48 ft, May 11, affected by wind; minimum gage height, 7.57 ft, Feb. 18, 19.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	7.90	7.88	7.66	7.81	8.13	8.38	8.37	8.30	8.30	8.23
2	---	---	7.91	7.87	7.66	7.83	8.14	8.39	8.36	8.29	8.25	8.22
3	---	---	7.90	7.87	7.67	7.85	8.15	8.37	8.34	8.28	8.26	8.21
4	---	---	7.90	7.86	7.67	7.88	8.17	8.36	8.32	8.29	8.31	8.21
5	---	---	7.90	7.87	7.66	7.92	8.14	8.40	8.30	8.31	8.29	8.19
6	---	---	7.89	7.87	7.65	7.95	8.15	8.38	8.30	8.35	8.28	8.18
7	---	---	7.89	7.86	7.65	7.98	8.19	8.36	8.30	8.41	8.31	8.20
8	---	---	7.89	7.86	7.63	8.01	8.16	8.34	8.36	8.40	8.31	8.21
9	---	---	7.89	7.86	7.63	8.03	8.13	8.38	8.37	8.37	8.30	8.21
10	---	---	7.88	7.85	7.62	8.05	8.13	8.38	8.34	8.31	8.29	8.21
11	---	---	7.88	7.84	7.62	8.07	8.15	8.37	8.35	8.29	8.29	8.21
12	---	---	7.88	7.83	7.62	8.09	8.16	8.42	8.32	8.29	8.29	8.21
13	---	---	7.88	7.82	7.61	8.12	8.16	8.36	8.31	8.27	8.27	8.26
14	---	---	7.88	7.81	7.61	8.13	8.14	8.36	8.31	8.26	8.27	8.35
15	---	---	7.88	7.80	7.59	8.10	8.15	8.37	8.30	8.30	8.28	8.37
16	---	---	7.89	7.79	7.58	8.02	8.24	8.35	8.29	8.31	8.28	8.34
17	---	---	7.89	7.78	7.58	7.97	8.20	8.34	8.26	8.30	8.28	8.33
18	---	e8.40	7.93	7.77	7.58	7.98	8.18	8.31	8.26	8.28	8.27	8.31
19	---	8.39	7.94	7.76	7.58	8.00	8.17	8.28	8.30	8.24	8.26	8.30
20	---	8.32	7.88	7.75	7.61	8.00	8.19	8.32	8.26	8.23	8.25	8.30
21	---	8.27	7.88	7.74	7.63	8.02	8.21	8.34	8.24	8.23	8.25	8.30
22	---	8.20	7.88	7.73	7.66	8.05	8.22	8.34	8.23	8.23	8.26	8.31
23	---	8.12	7.87	7.71	7.67	8.06	8.23	8.34	8.22	8.22	8.25	8.31
24	---	8.06	7.88	7.71	7.70	8.07	8.23	8.34	8.22	8.21	8.21	8.31
25	---	8.00	7.88	7.71	7.72	8.09	8.23	8.33	8.23	8.19	8.22	8.29
26	---	7.94	7.88	7.69	7.75	8.11	8.21	8.32	8.25	8.17	8.23	8.29
27	---	7.91	7.87	7.68	7.77	8.14	8.19	8.30	8.24	8.20	8.24	8.29
28	---	7.91	7.87	7.68	7.79	8.16	8.19	8.30	8.29	8.19	8.21	8.29
29	e8.32	7.90	7.87	7.67	---	8.16	8.20	8.32	8.30	8.19	8.24	8.29
30	8.31	7.91	7.87	7.66	---	8.14	8.23	8.31	8.30	8.22	8.24	8.28
31	e8.30	---	7.88	7.66	---	8.13	---	8.39	---	8.32	8.23	---
MEAN	---	---	7.89	7.78	7.65	8.03	8.18	8.35	8.29	8.27	8.27	8.27
MAX	---	---	7.94	7.88	7.79	8.16	8.24	8.42	8.37	8.41	8.31	8.37
MIN	---	---	7.87	7.66	7.58	7.81	8.13	8.28	8.22	8.17	8.21	8.18

e Estimated

430347088240800 NAGAWICKA LAKE AT DELAFIELD, WI—Continued

## PRECIPITATION QUANTITY

PERIOD OF RECORD.--October 2002 to September 2003 (non-frozen precipitation).

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

REMARKS.--Gage established October 29, 2002. Rain gage covered Dec. 4 to Mar. 18.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.99 in., July 30.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	0.00	---	---	---	0.00	0.23	0.00	0.00	0.10	0.00
2	---	---	0.00	---	---	---	0.00	0.00	0.00	0.00	0.02	0.00
3	---	---	0.00	---	---	---	0.01	0.00	0.10	0.00	0.82	0.00
4	---	---	0.00	---	---	---	0.19	0.31	0.00	0.25	0.00	0.00
5	---	---	---	---	---	---	0.00	0.32	0.00	0.34	0.00	0.00
6	---	---	---	---	---	---	0.00	0.00	0.02	0.73	0.19	0.00
7	---	---	---	---	---	---	0.00	0.60	0.00	0.01	0.11	0.00
8	---	---	---	---	---	---	0.00	0.01	0.82	0.00	0.00	0.00
9	---	---	---	---	---	---	0.00	0.84	0.00	0.01	0.00	0.00
10	---	---	---	---	---	---	0.00	0.11	0.07	0.03	0.00	0.00
11	---	---	---	---	---	---	0.00	0.98	0.00	0.01	0.00	0.00
12	---	---	---	---	---	---	0.00	0.00	0.00	0.01	0.00	0.30
13	---	---	---	---	---	---	0.00	0.00	0.00	0.01	0.00	0.58
14	---	---	---	---	---	---	0.00	0.15	0.00	0.00	0.00	1.14
15	---	---	---	---	---	---	0.00	0.00	0.00	0.74	0.00	0.00
16	---	---	---	---	---	---	0.00	0.00	0.00	0.01	0.08	0.00
17	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
18	---	---	---	---	---	0.00	0.00	0.00	0.10	0.00	0.00	0.00
19	---	0.00	---	---	---	0.03	0.28	0.11	0.00	0.00	0.00	0.01
20	---	0.01	---	---	---	0.00	0.12	0.25	0.00	0.00	0.00	0.00
21	---	0.22	---	---	---	0.00	0.05	0.00	0.00	0.02	0.00	0.05
22	---	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.22
23	---	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	---	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	---	0.00	---	---	---	0.00	0.00	0.00	0.35	0.00	0.08	0.00
26	---	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.10	0.14
27	---	0.00	---	---	---	0.01	0.00	0.00	0.32	0.00	0.00	0.01
28	---	0.00	---	---	---	0.40	0.00	0.35	0.18	0.00	0.21	0.00
29	0.00	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.03	0.04
30	0.00	0.00	---	---	---	0.00	1.43	0.73	0.00	1.99	0.00	0.00
31	0.00	---	---	---	---	0.06	---	0.01	---	0.05	0.00	---
TOTAL	---	---	---	---	---	---	2.08	5.00	1.96	4.21	1.74	2.49

05426250 BARK RIVER NEAR ROME, WI

LOCATION.--Lat 42°57'37" long 88°40'14", in SE ¼ SW ¼ sec.24, T.6 N., R.15 E., Jefferson County, Hydrologic Unit 07090001, on left bank just upstream from bridge on Cushman Road, 2.8 mi southwest of Rome.

DRAINAGE AREA.--122 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1979 to September 1982. October 1982 to September 1983 (fragmentary). October 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 810 ft above NGVD of 1929, from topographic map.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	68	e59	e41	29	e20	72	80	94	22	23	15
2	76	57	55	e40	27	e19	81	111	89	22	23	14
3	93	54	52	e38	29	e19	79	113	85	23	27	13
4	134	48	49	e37	28	e17	72	102	81	22	29	13
5	113	48	46	e38	e27	e17	65	106	74	23	25	12
6	106	45	44	e40	e26	e16	71	101	71	28	26	12
7	91	46	e43	e41	e26	e17	69	112	72	33	31	12
8	86	45	42	e42	e26	e17	63	133	74	42	33	11
9	84	47	43	43	e26	e17	58	188	73	59	29	11
10	81	47	39	39	e26	e22	49	199	71	62	28	11
11	69	46	40	e37	e27	e25	43	176	69	50	29	11
12	54	44	40	e35	e27	27	47	171	60	47	28	11
13	51	46	41	e34	e27	24	60	179	55	43	27	11
14	54	45	43	e34	e27	24	53	174	54	34	27	13
15	53	44	44	e34	e27	29	46	167	50	25	27	14
16	52	44	42	e33	e27	31	59	143	49	24	27	15
17	53	40	41	e33	e28	36	62	120	46	38	27	16
18	52	40	48	e32	e27	54	52	122	45	48	25	17
19	50	41	55	e32	e27	61	54	123	54	40	23	18
20	51	43	54	e31	e27	72	57	126	53	37	22	17
21	50	45	51	e30	e26	71	55	123	44	31	22	17
22	46	46	e48	e29	e25	64	57	105	38	23	21	18
23	46	51	e46	e28	e24	61	59	90	35	22	20	17
24	46	54	e45	e29	e23	49	55	89	29	18	19	17
25	49	55	e43	e30	e23	34	53	88	17	19	18	17
26	48	58	e43	e30	e22	36	49	84	15	20	16	18
27	46	60	e43	e30	e21	37	44	75	15	19	16	17
28	46	62	e43	e30	e21	35	36	68	19	18	15	16
29	48	66	e43	e30	---	38	28	69	21	18	15	16
30	47	61	e42	e31	---	44	35	83	21	19	15	17
31	56	---	e42	e30	---	52	---	93	---	22	15	---
TOTAL	1,983	1,496	1,409	1,061	726	1,085	1,683	3,713	1,573	951	728	437
MEAN	64.0	49.9	45.5	34.2	25.9	35.0	56.1	120	52.4	30.7	23.5	14.6
MAX	134	68	59	43	29	72	81	199	94	62	33	18
MIN	46	40	39	28	21	16	28	68	15	18	15	11
CFSM	0.52	0.41	0.37	0.28	0.21	0.29	0.46	0.98	0.43	0.25	0.19	0.12
IN.	0.60	0.46	0.43	0.32	0.22	0.33	0.51	1.13	0.48	0.29	0.22	0.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)
MEAN	71.6	89.7	79.5	66.0
MAX	214	214	138	105
(WY)	(1987)	(1986)	(1986)	(1985)
MIN	23.6	47.6	34.2	34.2
(WY)	(1989)	(2000)	(1990)	(2003)
MEAN	81.5	123	146	111
MAX	248	327	180	200
(WY)	(1999)	(1986)	(1993)	(1993)
MIN	25.9	35.0	56.1	48.1
(WY)	(2003)	(2003)	(2003)	(1989)
MEAN	81.7	64.4	64.4	68.4
MAX	200	176	127	212
(WY)	(1996)	(1993)	(1995)	(1986)
MIN	13.3	7.66	6.04	14.6
(WY)	(1988)	(1988)	(1988)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1980 - 2003

ANNUAL TOTAL	27,660	16,845	
ANNUAL MEAN	75.8	46.2	87.8
HIGHEST ANNUAL MEAN			139
LOWEST ANNUAL MEAN			46.2
HIGHEST DAILY MEAN	266	Apr 11	459
LOWEST DAILY MEAN	23	Aug 11	3.6
ANNUAL SEVEN-DAY MINIMUM	27	Jul 17	3.8
MAXIMUM PEAK FLOW		210	476
MAXIMUM PEAK STAGE		1.66	2.56
ANNUAL RUNOFF (CFSM)	0.62	0.38	0.72
ANNUAL RUNOFF (INCHES)	8.43	5.14	9.77
10 PERCENT EXCEEDS	136	83	159
50 PERCENT EXCEEDS	60	41	76
90 PERCENT EXCEEDS	34	17	32

(e) Estimated due to ice effect or missing record

## 05427085 ROCK RIVER AT ROBERT STREET AT FORT ATKINSON, WI

LOCATION.--Lat 42°55'39", long 88°50'34", in SW ¼ NE ¼ sec.4, T.5 N., R.14 E., Jefferson County, Hydrologic Unit 07090001, on upstream center of Robert Street bridge at Fort Atkinson.

DRAINAGE AREA.--2,240 mi<sup>2</sup>.

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

GAGE.--Acoustical Velocity Meter (AVM) system. Single-path transducer installation. Datum of gage is 775.09 ft above NGVD of 1929 (levels by the City of Fort Atkinson).

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	423	571	e500	e380	e230	e270	929	1,240	1,260	478	276	140
2	528	599	e480	e420	e240	e270	929	1,730	1,180	444	270	148
3	558	593	e440	e410	e270	e270	869	1,890	1,260	416	263	151
4	643	599	e450	e390	e280	e270	865	1,940	1,240	397	327	145
5	941	576	e450	e420	e250	e260	929	1,950	1,100	422	384	165
6	840	565	e410	e420	e250	e280	974	2,030	1,040	437	428	136
7	951	527	e390	e410	e240	e290	1,050	2,000	977	458	528	123
8	881	585	e410	e420	e220	e290	1,080	2,040	958	473	476	132
9	864	595	e390	e420	e220	e280	1,040	2,240	844	499	453	123
10	790	597	e400	e330	e230	e270	1,010	2,490	770	479	423	127
11	718	648	e420	e320	e240	e270	981	2,310	949	510	363	115
12	629	589	e420	e330	e240	e310	955	2,850	1,010	487	324	108
13	576	574	e430	e330	e240	e320	883	2,900	1,010	453	294	173
14	516	636	e420	e300	e220	e340	734	2,850	1,060	419	259	240
15	482	644	e450	e280	e210	e400	699	2,820	1,050	547	279	301
16	474	626	e430	e270	e210	524	830	2,710	996	577	252	301
17	474	611	e410	e260	e230	592	761	2,610	939	557	211	307
18	439	601	e430	e250	e250	721	770	2,520	888	517	215	312
19	505	591	e480	e230	e250	856	759	2,400	809	471	208	306
20	493	607	e490	e230	e250	890	772	2,450	649	432	200	319
21	484	622	e480	e230	e280	904	1,030	2,410	526	420	242	255
22	511	620	e470	e230	e300	961	1,120	2,320	535	394	160	254
23	506	583	e480	e220	e280	918	1,130	2,240	502	335	161	268
24	482	617	e480	e220	e300	969	1,170	2,140	468	302	149	227
25	494	624	e480	e220	e280	1,070	1,190	1,990	413	301	191	231
26	522	570	e480	e230	e270	1,000	1,100	1,830	418	241	183	188
27	538	594	e470	e220	e260	825	923	1,510	450	277	152	207
28	536	586	e470	e220	e260	756	860	1,490	485	230	122	219
29	541	622	e450	e220	---	878	757	1,440	530	259	167	196
30	542	605	e440	e220	---	872	727	1,240	500	220	137	211
31	564	---	e420	e220	---	900	---	1,250	---	253	151	---
TOTAL	18,445	17,977	13,820	9,270	7,000	18,026	27,826	65,830	24,816	12,705	8,248	6,128
MEAN	595	599	446	299	250	581	928	2,124	827	410	266	204
MAX	951	648	500	420	300	1,070	1,190	2,900	1,260	577	528	319
MIN	423	527	390	220	210	260	699	1,240	413	220	122	108
CFSM	0.27	0.27	0.20	0.13	0.11	0.26	0.41	0.95	0.37	0.18	0.12	0.09
IN.	0.31	0.30	0.23	0.15	0.12	0.30	0.46	1.09	0.41	0.21	0.14	0.10

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

MEAN	815	912	850	698	1,436	1,895	2,355	2,635	2,673	979	790	690
MAX	1,418	1,408	1,427	1,032	2,469	3,048	3,590	3,428	4,887	1,547	1,960	1,548
(WY)	(2002)	(2002)	(2002)	(1999)	(1999)	(2001)	(2001)	(1999)	(2000)	(1999)	(1999)	(2001)
MIN	595	565	446	299	250	581	928	2,013	827	410	266	204
(WY)	(2003)	(2000)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)	(2003)	(2003)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	450,127		230,091			
ANNUAL MEAN	1,233		630		1,391	
HIGHEST ANNUAL MEAN					1,704	
LOWEST ANNUAL MEAN					630	
HIGHEST DAILY MEAN	3,770	Mar 12	2,900	May 13	7,740	Jun 3, 2000
LOWEST DAILY MEAN	191	Aug 12	108	Sep 12	108	Sep 12, 2003
ANNUAL SEVEN-DAY MINIMUM	234	Sep 13	123	Sep 6	123	Sep 6, 2003
ANNUAL RUNOFF (CFSM)	0.55		0.28		0.62	
ANNUAL RUNOFF (INCHES)	7.48		3.82		8.44	
10 PERCENT EXCEEDS	2,850		1,170		3,000	
50 PERCENT EXCEEDS	828		473		960	
90 PERCENT EXCEEDS	333		220		366	

(e) Estimated due to ice effect or missing record



## 05427235 LAKE KOSHKONONG NEAR NEWVILLE, WI

LOCATION.--Lat 42°51'27", long 88°56'27", in NW ¼ NE ¼ sec.34, T.5 N., R.13 E., Jefferson County, Hydrologic Unit 07090001, 80 ft east of Pottawatom Trail Bridge at Bingham Point Estates, and 4.5 mi northeast of Newville.

DRAINAGE AREA.--2,560 mi<sup>2</sup>, at lake outlet. Area of Lake Koshkonong, 16.3 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is 770.00 ft above NGVD of 1929 (Wisconsin Department of Transportation bench mark).

REMARKS.--Lake level regulated by dam at Indianford. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded gage height, 12.23 ft, Apr. 25, 1993; minimum recorded, 5.10 ft, Dec. 28, 29, 1999.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 7.53 ft, May 20; minimum daily gage height, 5.31 ft, Jan. 28, 30, and 31.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.45	5.56	5.58	5.71	e5.32	e5.41	5.65	6.39	6.39	6.27	6.06	5.85
2	6.46	5.49	5.60	5.70	e5.33	e5.41	5.62	6.46	6.30	6.26	6.06	5.85
3	6.41	5.44	5.60	5.70	e5.35	e5.41	5.56	6.50	6.27	6.25	6.05	5.87
4	6.46	5.42	5.59	5.69	e5.37	e5.42	5.58	6.53	6.26	6.27	6.05	5.86
5	6.47	5.38	5.59	5.70	e5.36	e5.44	5.59	6.65	6.23	6.29	6.06	5.85
6	6.48	5.38	5.58	5.70	e5.36	e5.47	5.53	6.69	6.22	6.29	6.07	5.85
7	6.45	5.39	5.57	5.70	e5.36	e5.48	5.52	6.72	6.22	6.31	6.08	5.85
8	6.38	5.43	5.56	5.70	e5.35	e5.49	5.57	6.74	6.24	6.34	6.09	5.85
9	6.33	5.42	5.55	5.67	e5.35	e5.50	5.58	6.85	6.23	6.35	6.09	5.85
10	6.27	5.45	5.53	5.61	e5.35	e5.49	5.58	6.95	6.18	6.36	6.10	5.85
11	6.24	5.45	5.52	5.54	e5.36	e5.49	5.59	7.13	6.22	6.33	6.11	5.83
12	6.25	5.45	5.51	5.48	e5.37	e5.50	5.59	7.24	6.26	6.25	6.08	5.82
13	6.25	5.43	5.49	5.42	e5.36	e5.51	5.57	7.30	6.30	6.20	6.06	5.89
14	6.19	5.45	5.47	5.40	e5.35	e5.52	5.54	7.36	6.34	6.16	6.05	6.04
15	6.19	5.44	5.46	5.38	e5.34	e5.56	5.57	7.41	6.37	6.29	6.05	6.06
16	6.15	5.42	5.46	5.36	e5.34	e5.60	5.58	7.43	6.38	6.30	6.03	6.07
17	6.12	5.41	5.45	5.34	e5.35	5.64	5.62	7.44	6.36	6.32	6.01	6.06
18	6.09	5.40	5.48	5.34	e5.36	5.72	5.73	7.42	6.32	6.31	5.98	6.07
19	6.10	5.42	5.53	5.34	e5.36	5.78	5.82	7.40	6.29	6.30	5.95	6.13
20	6.04	5.43	5.57	5.34	e5.36	5.85	6.00	7.45	6.26	6.29	5.93	6.11
21	6.00	5.48	5.61	5.34	e5.38	5.90	6.15	7.38	6.22	6.35	5.94	6.10
22	5.99	5.47	5.64	5.34	e5.39	5.91	6.24	7.35	6.19	6.33	5.92	6.15
23	5.92	5.48	5.65	e5.33	e5.39	5.91	6.30	7.29	6.16	6.28	5.89	6.14
24	5.84	5.51	5.66	e5.33	e5.40	5.91	6.32	7.22	6.18	6.24	5.86	6.14
25	5.82	5.52	5.68	e5.33	e5.40	5.88	6.34	7.14	6.21	6.20	5.86	6.13
26	5.82	5.52	5.70	e5.33	e5.41	5.84	6.30	7.05	6.28	6.17	5.85	6.11
27	5.80	5.53	5.70	e5.32	e5.40	5.78	6.26	6.95	6.23	6.17	5.85	6.15
28	5.76	5.54	5.71	e5.31	e5.40	5.79	6.23	6.86	6.25	6.14	5.84	6.14
29	5.69	5.56	5.71	e5.32	---	5.77	6.23	6.80	6.28	6.11	5.87	6.12
30	5.64	5.59	5.72	e5.31	---	5.71	6.25	6.64	6.27	6.08	5.85	6.13
31	5.60	---	5.73	e5.31	---	5.67	---	6.54	---	6.06	5.85	---
MEAN	6.12	5.46	5.59	5.46	5.37	5.64	5.83	7.01	6.26	6.25	5.99	6.00
MAX	6.48	5.59	5.73	5.71	5.41	5.91	6.34	7.45	6.39	6.36	6.11	6.15
MIN	5.60	5.38	5.45	5.31	5.32	5.41	5.52	6.39	6.16	6.06	5.84	5.82

(e) Estimated due to ice effect or missing record

## 05427570 ROCK RIVER AT INDIANFORD, WI

LOCATION.--Lat 42°48'15", long 89°05'24", in SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec.16, T.4 N., R.12 E., Rock County, Hydrologic Unit 07090001, on right bank 50 ft upstream from bridge on County Trunk Highways F and M, 250 ft upstream from dam in Indianford, and 1.8 mi upstream from Yahara River.

DRAINAGE AREA.--2,630 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1975 to current year.

REVISED RECORDS.--WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 763.84 ft (revised Oct. 1, 1990) above NGVD of 1929 (Rock County Surveyor bench mark).

REMARKS.--Records poor (see page 11). Natural flow of stream affected by dam in Indianford. Discharge is adjusted for flow through wicket gates. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	750	838	612	586	372	e390	1,210	1,120	1,390	552	531	149
2	1,050	842	624	571	380	e390	1,370	1,690	1,360	521	492	124
3	1,150	822	607	510	369	e390	1,390	1,980	1,390	480	496	97
4	1,270	840	594	514	366	e390	1,390	2,040	1,390	489	477	128
5	1,440	816	574	530	378	e390	1,170	2,470	1,290	519	440	101
6	1,260	541	555	531	369	e400	1,280	2,630	1,270	528	433	81
7	1,470	371	537	478	368	e410	1,450	2,600	1,240	526	436	113
8	1,480	529	526	473	358	414	1,270	2,430	1,250	566	440	137
9	1,500	762	500	444	359	407	1,160	2,410	1,270	671	433	119
10	1,330	812	490	439	e360	411	1,000	2,530	912	702	425	119
11	1,110	881	485	405	e360	407	912	1,990	815	619	460	107
12	778	786	460	400	e360	427	974	2,550	834	569	454	106
13	741	789	438	416	e350	430	898	2,480	847	531	409	119
14	712	832	414	442	e350	407	716	2,520	898	453	399	219
15	751	887	431	430	e350	420	612	2,640	932	530	370	213
16	744	833	448	417	e350	448	779	2,760	971	552	364	198
17	813	772	446	415	e350	503	436	2,850	1,020	587	373	202
18	821	680	413	425	e350	644	324	2,880	968	634	337	233
19	844	535	414	421	e350	793	339	2,820	988	547	310	208
20	842	601	396	428	e350	898	347	2,920	809	516	266	253
21	956	677	420	423	e350	977	520	2,940	754	616	260	255
22	1,060	630	417	420	e350	1,120	739	2,740	702	624	317	232
23	1,000	554	428	409	338	1,130	932	2,490	542	574	277	223
24	854	636	476	393	330	1,190	1,130	2,460	418	507	199	230
25	862	633	482	387	e350	1,380	1,260	2,410	432	447	253	248
26	825	612	477	388	e360	1,400	1,320	2,330	428	409	151	220
27	833	601	473	383	e370	1,410	1,150	2,220	421	562	143	206
28	1,110	591	482	377	e390	1,270	933	2,110	522	585	89	259
29	1,270	565	503	379	---	1,310	816	1,910	520	571	133	234
30	1,090	656	497	372	---	1,230	869	1,530	542	547	146	215
31	947	---	545	373	---	1,170	---	1,630	---	572	125	---
TOTAL	31,663	20,924	15,164	13,579	10,037	22,956	28,696	73,080	27,125	17,106	10,438	5,348
MEAN	1,021	697	489	438	358	741	957	2,357	904	552	337	178
MAX	1,500	887	624	586	390	1,410	1,450	2,940	1,390	702	531	259
MIN	712	371	396	372	330	390	324	1,120	418	409	89	81
CFSM	0.39	0.27	0.19	0.17	0.14	0.28	0.36	0.90	0.34	0.21	0.13	0.07
IN.	0.45	0.30	0.21	0.19	0.14	0.32	0.41	1.03	0.38	0.24	0.15	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

	1975	1976	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
MEAN	1,388	1,584	1,526	1,093	1,322	2,843	3,630	2,529	1,813	1,387	1,038	1,073																	
MAX	7,729	5,047	3,745	2,622	2,751	6,113	9,466	6,028	6,220	4,549	3,377	3,911																	
(WY)	(1987)	(1986)	(1986)	(1985)	(1999)	(1985)	(1979)	(1993)	(2000)	(1993)	(1993)	(1986)																	
MIN	216	297	262	254	283	741	957	317	185	158	130	178																	
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(2003)	(2003)	(1977)	(1988)	(1988)	(1988)	(2003)																	

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1975 - 2003
ANNUAL TOTAL	543,268	276,116	
ANNUAL MEAN	1,488	756	1,771
HIGHEST ANNUAL MEAN			3,252
LOWEST ANNUAL MEAN			509
HIGHEST DAILY MEAN	4,100	2,940	11,700
LOWEST DAILY MEAN	249	81	39
ANNUAL SEVEN-DAY MINIMUM	327	111	85
MAXIMUM PEAK FLOW		3,150	11,900
MAXIMUM PEAK STAGE		12.76	(a)16.23
ANNUAL RUNOFF (CFSM)	0.57	0.29	0.67
ANNUAL RUNOFF (INCHES)	7.68	3.91	9.15
10 PERCENT EXCEEDS	3,230	1,400	3,750
50 PERCENT EXCEEDS	1,120	531	1,290
90 PERCENT EXCEEDS	374	254	373

(a) Datum then in use

(e) Estimated due to ice effect or missing record

05427718 YAHARA RIVER AT WINDSOR, WI

LOCATION.--Lat 43°12'32", long 89°21'09", in NW ¼ NE ¼ sec.31, T.9 N., R.10 E., Dane County, Hydrologic Unit 07090001, at bridge on road to Lake Windsor Country Club.

DRAINAGE AREA.--73.6 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1976 to December 1981, October 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 870 ft above NGVD of 1929, from topographic map.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	16	16	15	e14	14	16	52	14	10	9.5	9.5
2	14	16	16	15	e14	13	16	25	14	9.6	9.2	9.2
3	15	16	15	15	e14	14	16	19	14	9.5	22	9.1
4	56	16	16	15	e13	14	17	17	14	10	11	8.9
5	36	17	15	15	e13	e14	16	24	14	12	9.8	9.2
6	19	17	16	15	e13	13	16	21	14	14	9.6	9.6
7	17	16	15	15	e12	13	16	23	14	13	9.5	9.3
8	16	16	14	15	e15	13	16	21	15	12	9.1	9.4
9	16	16	15	15	e15	13	17	33	15	11	9.0	9.5
10	15	17	15	14	15	e13	18	24	14	11	8.9	9.5
11	15	34	15	e15	16	14	18	47	13	11	8.8	9.6
12	15	24	15	15	16	14	17	43	13	10	9.1	12
13	15	20	15	15	15	14	17	25	13	9.8	8.9	34
14	15	18	15	15	15	22	16	24	12	9.5	8.8	90
15	15	17	15	15	14	24	16	23	12	44	8.8	31
16	15	17	15	16	14	20	17	21	11	18	9.0	18
17	15	16	15	15	e14	18	16	19	11	13	9.2	15
18	16	16	18	15	14	17	16	18	11	11	8.7	13
19	16	17	19	15	14	16	16	19	12	10	8.5	13
20	16	17	17	e15	15	18	18	22	11	10	8.6	13
21	15	17	16	e14	15	17	18	18	11	13	8.8	12
22	16	17	16	e14	15	17	17	17	11	11	8.8	12
23	15	e17	15	e14	15	16	16	17	11	9.9	9.0	12
24	16	16	15	e14	13	16	15	16	12	9.6	9.4	11
25	17	16	15	e14	e14	16	15	16	11	9.4	9.8	11
26	18	16	15	e14	14	15	15	e15	11	9.3	9.5	11
27	17	16	15	e14	14	16	15	15	10	9.2	9.0	11
28	17	16	15	e14	14	21	15	15	14	9.0	8.9	11
29	16	16	15	e14	---	20	15	15	12	8.9	14	10
30	16	16	15	e14	---	17	18	15	11	9.0	9.9	10
31	16	---	15	e15	---	16	---	14	---	9.8	9.5	---
TOTAL	550	522	479	455	399	498	490	693	375	366.5	302.6	452.8
MEAN	17.7	17.4	15.5	14.7	14.2	16.1	16.3	22.4	12.5	11.8	9.76	15.1
MAX	56	34	19	16	16	24	18	52	15	44	22	90
MIN	14	16	14	14	12	13	15	14	10	8.9	8.5	8.9
CFSM	0.24	0.24	0.21	0.20	0.19	0.22	0.22	0.30	0.17	0.16	0.13	0.21
IN.	0.28	0.26	0.24	0.23	0.20	0.25	0.25	0.35	0.19	0.19	0.15	0.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2003, BY WATER YEAR (WY)

	1976	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
MEAN	16.9	17.8	15.7	16.8	25.8	37.9	24.7	21.1	26.1	21.5	18.6	18.7																
MAX	29.2	30.4	27.0	32.5	74.2	135	47.8	37.0	75.4	95.3	40.3	50.1																
(WY)	(1994)	(1994)	(1994)	(1996)	(1996)	(1976)	(1993)	(2000)	(2000)	(1993)	(1993)	(1980)																
MIN	7.75	8.78	8.54	6.50	4.76	11.8	14.1	7.71	7.48	7.12	7.29	7.12																
(WY)	(1978)	(1978)	(1978)	(1978)	(1978)	(1978)	(1978)	(1977)	(1977)	(1977)	(1991)	(1977)																

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1976 - 2003
ANNUAL TOTAL	7,548	5,582.9	
ANNUAL MEAN	20.7	15.3	21.5
HIGHEST ANNUAL MEAN			39.1
LOWEST ANNUAL MEAN			10.9
HIGHEST DAILY MEAN	123	90	519
LOWEST DAILY MEAN	12	8.5	(b)4.6
ANNUAL SEVEN-DAY MINIMUM	12	8.8	(b)4.6
MAXIMUM PEAK FLOW		125	2,050
MAXIMUM PEAK STAGE		3.31	6.58
INSTANTANEOUS LOW FLOW		6.1	(c)2.9
ANNUAL RUNOFF (CFSM)	0.28	0.21	0.29
ANNUAL RUNOFF (INCHES)	3.82	2.82	3.96
10 PERCENT EXCEEDS	26	18	31
50 PERCENT EXCEEDS	18	15	17
90 PERCENT EXCEEDS	13	9.5	9.0

- (a) Also occurred Sept. 7-15
- (b) Ice affected
- (c) Result of freezeup
- (e) Estimated due to ice effect or missing record

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1980, October 1989 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: March 1990 to current year.

TOTAL-PHOSPHORUS DISCHARGE: March 1990 to current year.

TOTAL ORTHO-PHOSPHORUS DISCHARGE: October 1990 to September 1992.

INSTRUMENTATION.--Water-quality sampler since March 1990.

REMARKS.--Records good. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 7,070 mg/L, June 29, 1990; minimum observed, 3.0 mg/L, Sept. 10, 2002.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 1,280 tons, July 5, 1993; minimum daily, 0.10 ton, Sept. 10, 2002.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 5.10 mg/L, June 7, 1993; minimum observed, 0.01 mg/L, Jan. 31, 1991, and Oct. 29, 1997.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 3,240 lb, Feb. 20, 1994; minimum daily, 0.70 lb, Nov. 13-15, 1997.

TOTAL ORTHO-PHOSPHORUS CONCENTRATIONS: Maximum observed, 1.10 mg/L, Mar. 2, 3, 1991; minimum observed, <0.01 mg/L, Nov. 13, 1990 and June 26, 1994.

TOTAL ORTHO-PHOSPHORUS DISCHARGE: Maximum daily, 1,260 lb, Mar. 2, 1991; minimum daily, 0.49 lb, Nov. 26, 1990.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 748 mg/L, Sept. 13; minimum observed, 7.0 mg/L, Feb. 18.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 97 tons, Sept. 14; minimum daily, 0.21 ton, July 2.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.92 mg/L, Mar. 14; minimum observed, 0.036 mg/L, Feb. 18.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 277 lb, Sept. 14; minimum daily, 2.33 lb, Aug. 27.

TOTAL ORTHO-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.221 mg/L, Sept. 14; minimum observed, 0.049 mg/L, May 2.

SUSPENDED SEDIMENT LOAD, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.60	0.91	0.34	0.53	0.26	0.26	0.81	31	0.57	0.25	0.42	0.33
2	1.3	0.91	0.34	0.52	0.26	0.25	0.70	2.0	0.55	0.21	0.40	0.31
3	1.7	0.92	0.32	0.50	0.26	0.26	0.58	0.93	0.55	0.22	11	0.30
4	34	0.92	0.35	0.48	0.25	0.26	0.58	0.76	0.55	0.47	1.9	0.28
5	5.7	0.93	0.33	0.47	0.25	0.26	0.56	3.6	0.53	0.80	0.56	0.29
6	0.98	0.93	0.35	0.44	0.25	0.25	0.54	2.6	0.54	1.4	0.51	0.29
7	0.49	0.91	0.33	0.44	0.23	0.25	0.54	2.4	0.55	1.4	0.50	0.27
8	0.43	0.90	0.31	0.43	0.28	0.25	0.53	2.9	0.55	0.65	0.48	0.26
9	0.41	0.90	0.33	0.42	0.28	0.25	0.55	5.2	0.55	0.47	0.47	0.26
10	0.40	0.90	0.32	0.36	0.28	0.32	0.58	1.5	0.52	0.47	0.46	0.25
11	0.40	3.8	0.32	0.39	0.30	0.27	0.58	14	0.49	0.46	0.45	0.24
12	0.40	0.76	0.32	0.37	0.30	0.26	0.55	7.2	0.47	0.42	0.46	1.6
13	0.38	0.47	0.32	0.36	0.29	0.26	0.53	1.8	0.46	0.40	0.44	32
14	0.37	0.42	0.36	0.35	0.28	7.1	0.51	1.6	0.43	0.40	0.44	97
15	0.37	0.39	0.41	0.35	0.26	4.8	0.51	1.7	0.41	20	0.43	4.7
16	0.36	0.36	0.47	0.35	0.27	2.3	0.51	1.4	0.40	3.6	0.44	0.89
17	0.39	0.35	0.51	0.32	0.26	0.99	0.49	1.3	0.39	1.6	0.44	0.77
18	0.77	0.36	1.4	0.32	0.27	0.91	0.47	1.2	0.38	0.74	0.42	0.72
19	0.87	0.37	1.1	0.31	0.26	0.90	0.77	1.1	0.41	0.62	0.40	0.72
20	0.84	0.36	0.86	0.30	0.28	1.5	1.4	3.8	0.37	0.60	0.40	0.73
21	0.84	0.36	0.79	0.27	0.29	0.98	0.63	2.2	0.36	1.3	0.41	0.74
22	0.84	0.36	0.75	0.26	0.28	1.2	0.50	1.7	0.39	0.77	0.41	0.76
23	0.83	0.37	0.71	0.26	0.28	1.3	0.45	1.3	0.65	0.63	0.41	0.77
24	0.84	0.35	0.69	0.26	0.25	1.6	0.42	0.96	0.40	0.53	0.42	0.75
25	0.91	0.34	0.67	0.26	0.26	1.8	0.41	0.70	0.37	0.52	0.44	0.74
26	0.96	0.35	0.64	0.26	0.27	1.9	0.40	0.64	0.35	0.51	0.42	0.75
27	0.92	0.34	0.63	0.26	0.27	1.4	0.40	0.62	0.32	0.51	0.40	0.76
28	0.91	0.34	0.62	0.26	0.26	1.7	0.40	0.65	1.1	0.46	0.67	0.74
29	0.91	0.35	0.60	0.26	---	1.5	0.40	0.64	0.83	0.40	4.0	0.73
30	0.90	0.35	0.58	0.26	---	1.1	2.0	0.61	0.33	0.40	0.84	0.70
31	0.91	---	0.56	0.28	---	0.93	---	0.59	---	0.44	0.48	---
TOTAL	60.93	20.28	16.63	10.90	7.53	37.31	18.30	98.60	14.77	41.65	29.92	149.65

WATER YEAR 2003 TOTAL 506.47

## 05427718 YAHARA RIVER AT WINDSOR, WI—Continued

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.53	3.47	3.57	3.84	3.08	3.04	5.62	109	7.40	5.49	4.68	3.21
2	6.06	3.51	3.56	3.87	3.05	3.08	5.14	18.1	7.15	5.04	4.92	3.01
3	6.62	3.54	3.31	3.83	3.03	3.18	4.64	9.41	7.16	4.84	36.9	2.94
4	147	3.62	3.70	3.82	2.80	3.21	4.66	6.82	7.22	5.73	11.1	2.84
5	89.4	3.70	3.48	3.87	2.77	3.32	4.57	15.8	7.03	6.76	6.29	2.93
6	24.7	3.79	3.61	3.78	2.75	3.23	4.47	12.0	7.24	10.9	4.42	3.01
7	12.3	3.75	3.50	3.91	2.53	3.23	4.48	13.5	7.47	9.02	3.22	2.89
8	9.07	3.76	3.20	3.97	3.13	3.26	4.50	9.60	7.53	6.13	2.90	2.88
9	7.11	3.84	3.48	3.99	3.11	3.34	4.66	28.5	7.61	5.55	2.84	2.91
10	5.58	3.90	3.38	3.55	3.06	4.23	4.99	15.4	7.16	5.60	2.77	2.86
11	5.15	36.3	3.35	3.83	3.23	3.65	5.06	71.0	6.84	5.44	2.73	2.87
12	5.07	21.7	3.36	3.77	3.22	3.56	4.88	58.0	6.55	5.05	2.78	7.53
13	4.79	10.3	3.37	3.70	3.12	3.60	4.74	24.0	6.46	4.81	2.68	97.2
14	4.62	7.81	3.39	3.64	2.91	62.5	4.65	17.7	6.12	5.00	2.64	277
15	4.52	6.11	3.41	3.74	2.72	103	4.69	16.9	5.90	107	2.60	50.5
16	4.38	4.85	3.44	3.87	2.80	62.7	4.70	14.3	5.81	26.4	2.62	17.0
17	4.30	3.88	3.45	3.60	2.74	26.6	4.59	12.8	5.69	10.1	2.65	10.1
18	4.47	3.68	11.9	3.65	2.78	13.2	4.50	11.8	5.60	6.67	2.49	7.59
19	4.47	3.86	13.7	3.70	2.75	9.04	5.89	11.4	6.15	5.67	2.40	6.23
20	4.21	3.78	8.09	3.59	2.92	7.17	8.64	17.2	5.55	5.08	2.39	5.30
21	4.07	3.78	5.97	3.33	3.12	5.73	7.08	12.3	5.40	7.87	2.44	4.83
22	3.98	3.77	4.54	3.31	3.02	5.36	5.90	10.3	5.32	5.46	2.40	4.51
23	3.87	3.81	3.97	3.28	3.05	4.90	5.04	9.78	5.63	4.90	2.44	4.11
24	3.81	3.63	3.96	3.26	2.76	4.74	4.52	9.18	6.63	4.74	2.50	3.64
25	4.02	3.57	3.96	3.23	2.98	4.50	4.38	8.80	5.75	4.69	2.57	3.29
26	4.11	3.59	3.90	3.21	3.13	4.27	4.28	8.25	5.91	4.64	2.48	3.08
27	3.79	3.51	3.93	3.19	3.09	4.48	4.24	7.91	5.65	4.60	2.33	3.10
28	3.67	3.54	3.95	3.17	3.01	12.2	4.16	8.18	10.8	4.47	2.43	2.98
29	3.54	3.66	3.93	3.14	---	15.1	4.15	8.19	8.08	4.38	16.9	2.95
30	3.42	3.68	3.91	3.12	---	9.28	12.2	7.75	5.95	4.43	6.12	2.82
31	3.46	---	3.88	3.32	---	6.36	---	7.60	---	4.84	4.24	---
TOTAL	401.09	175.69	138.15	111.08	82.66	405.06	156.02	591.47	198.76	301.30	152.87	546.11

WATER YEAR 2003 TOTAL 3,260.26

## ROCK RIVER BASIN

05427718 YAHARA RIVER AT WINDSOR, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
OCT 2002						
02...	1030	14	10	0.05	0.08	36
04...	0900	20	50	--	0.195	47
04...	1145	52	50	--	0.366	87
04...	1215	71	50	--	0.695	390
04...	1315	108	50	0.120	0.839	558
04...	1430	120	50	0.093	0.636	468
04...	1630	100	50	0.148	0.455	182
05...	0330	52	50	--	0.564	80
05...	1615	27	50	--	0.372	26
07...	1002	17	10	--	0.134	10
30...	1220	16	50	--	0.039	48
NOV						
11...	0530	30	50	--	0.185	38
11...	0630	39	50	--	0.287	89
11...	1430	38	50	--	0.185	17
12...	0630	25	50	--	0.208	13
12...	2345	21	50	--	0.108	9
DEC						
13...	1440	15	10	--	0.042	8
18...	1445	19	50	--	0.112	14
18...	1945	26	50	--	0.232	62
19...	0345	21	50	--	0.150	19
JAN 2003						
09...	1314	15	10	--	0.048	10
FEB						
18...	1020	14	10	--	0.036	7
MAR						
14...	1415	17	50	--	0.250	26
14...	1800	32	50	--	0.770	151
14...	1845	44	50	--	0.920	291
15...	0015	31	50	--	0.840	97
15...	0700	19	50	--	0.750	62
15...	1500	23	50	--	0.890	44
15...	2300	28	50	--	0.700	76
16...	0700	20	50	--	0.671	46
18...	0615	18	50	--	0.151	20
26...	1635	15	10	--	0.051	48
28...	0945	19	50	--	0.083	15
28...	1415	26	50	--	0.135	42
29...	0615	22	50	--	0.151	27
APR						
19...	2145	19	50	--	0.097	38
21...	0845	18	50	--	0.074	12
30...	1630	19	50	--	0.087	15
30...	2245	29	50	--	0.251	76
MAY						
01...	0015	47	50	0.053	0.562	347
01...	0115	69	50	0.088	0.821	596
01...	0215	80	50	0.058	0.697	521
01...	0600	64	50	--	0.373	205
01...	1945	37	50	0.078	0.234	62
02...	1230	24	50	0.049	0.116	20
05...	1015	24	50	--	0.103	25
07...	1730	26	50	--	0.105	22
09...	0145	22	50	--	0.111	26
09...	0545	41	50	--	0.230	82
09...	0745	44	50	--	0.230	139
09...	1310	35	50	--	0.143	42
10...	2345	28	50	--	0.191	51
11...	0230	48	50	--	0.279	131
11...	1045	43	50	--	0.225	78
11...	1815	52	50	--	0.349	102
11...	2030	62	50	--	0.308	82
12...	0430	55	50	--	0.249	48
12...	1227	41	50	--	0.255	49
14...	1345	26	50	--	--	28
20...	0315	23	50	--	--	56
JUN						
23...	1045	11	10	--	0.092	42
23...	1046	11	50	--	0.100	13
28...	1715	21	50	--	0.175	44

05427718 YAHARA RIVER AT WINDSOR, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)	Sus- pended sedi- ment concen- tration mg/L (80154)
JUL 2003						
15...	0230	33	50	--	0.322	83
15...	0600	61	50	0.137	0.627	512
15...	0615	73	50	0.132	0.900	655
15...	0645	87	50	0.114	0.866	243
15...	1030	55	50	0.130	0.365	107
16...	0745	19	50	--	0.291	76
28...	1158	9.8	50	--	0.093	21
28...	1159	9.8	10	--	0.091	17
AUG						
29...	0400	33	50	--	0.418	225
29...	0913	13	50	--	0.162	39
29...	0914	13	10	--	0.170	45
SEP						
13...	0215	29	50	--	0.626	345
13...	1900	42	50	--	0.445	169
13...	2030	65	50	0.167	0.629	281
13...	2130	89	50	--	0.727	482
13...	2245	115	50	0.103	0.841	748
14...	0300	99	50	--	0.564	365
14...	0730	123	50	0.199	0.673	495
14...	1745	72	50	0.221	0.458	203
15...	0917	32	50	--	0.315	38
15...	0918	32	10	--	0.311	34
15...	1745	24	50	--	0.232	18
26...	0903	11	10	--	0.053	26

## 05427850 YAHARA RIVER AT STATE HWY 113 AT MADISON, WI

LOCATION.--Lat 43°09'03", long 89°24'07", in SW ¼ SW ¼ sec.23, T.8 N., R.9 E., Dane County, Hydrologic Unit 07090001, at northbound bridge on Hwy 113, 5.3 mi north of the state capitol in Madison.

DRAINAGE AREA.--114 mi<sup>2</sup>, of which 36.6 mi<sup>2</sup> is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 2002 to current year.

GAGE.--Water-stage recorder. Side-looking velocity meter system. Datum of gage is 840.00 ft above NGVD of 1929 (Wisconsin Department of Transportation benchmark).

REMARKS.--Records good (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	41	39	41	39	35	65	188	42	28	47	22
2	69	72	49	41	29	37	76	114	38	24	30	8.9
3	31	41	29	38	28	32	30	73	47	36	42	38
4	48	70	35	43	36	28	51	75	40	29	33	22
5	134	56	38	49	34	31	33	77	43	32	28	11
6	48	59	32	41	36	41	85	104	26	44	29	29
7	69	10	46	47	29	30	32	87	61	47	27	25
8	55	95	36	43	34	45	17	100	45	37	26	18
9	51	48	32	46	34	37	49	102	53	40	25	23
10	43	64	42	31	31	32	54	112	44	32	30	23
11	44	87	40	31	33	38	62	108	47	41	36	25
12	45	73	45	41	40	38	56	209	34	30	17	20
13	48	58	49	39	37	41	39	104	39	24	22	74
14	22	89	44	32	39	47	25	89	36	13	23	140
15	70	57	64	30	35	75	65	84	36	99	25	110
16	39	52	39	40	37	85	110	80	24	49	31	36
17	44	46	47	33	34	73	-1.4	69	31	55	19	37
18	27	53	61	35	38	62	47	69	44	16	11	40
19	75	54	76	29	37	47	27	59	30	31	29	49
20	58	59	53	36	45	49	43	96	34	38	14	33
21	44	59	58	30	63	44	101	65	28	45	43	34
22	64	36	34	28	69	59	38	62	28	30	19	27
23	35	58	47	22	40	41	44	59	33	24	17	34
24	40	58	43	22	37	50	45	61	28	24	21	36
25	47	47	43	26	39	47	44	57	19	10	36	34
26	53	46	41	30	36	47	28	51	50	45	32	29
27	61	42	42	23	33	52	26	48	45	41	20	40
28	59	36	55	28	38	42	53	49	37	23	8.6	37
29	59	60	52	28	---	83	33	50	38	18	63	30
30	45	54	49	31	---	52	69	47	35	24	12	36
31	47	---	52	39	---	41	---	51	---	37	29	---
TOTAL	1,645	1,680	1,412	1,073	1,060	1,461	1,445.6	2,599	1,135	1,066	844.6	1,120.9
MEAN	53.1	56.0	45.5	34.6	37.9	47.1	48.2	83.8	37.8	34.4	27.2	37.4
MAX	134	95	76	49	69	85	110	209	61	99	63	140
MIN	22	10	29	22	28	28	-1.4	47	19	10	8.6	8.9
CFSM	0.69	0.72	0.59	0.45	0.49	0.61	0.62	1.08	0.49	0.44	0.35	0.48
IN.	0.79	0.81	0.68	0.52	0.51	0.70	0.69	1.25	0.55	0.51	0.41	0.54

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

	2002	2003	2003	2002	2002	2002	2002	2003	2002	2002	2002	2002
MEAN	53.1	56.0	45.5	42.5	54.7	60.2	65.1	80.8	58.9	38.7	35.0	38.0
MAX	53.1	56.0	45.5	50.4	71.6	73.3	82.1	83.8	79.9	43.0	42.8	38.6
(WY)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(2002)	(2002)	(2002)
MIN	53.1	56.0	45.5	34.6	37.9	47.1	48.2	77.8	37.8	34.4	27.2	37.4
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)	(2003)	(2003)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 2002 - 2003

ANNUAL TOTAL	21,663		16,542.1									
ANNUAL MEAN	59.4		45.3							45.3		
HIGHEST ANNUAL MEAN										45.3		2003
LOWEST ANNUAL MEAN										45.3		2003
HIGHEST DAILY MEAN	257	Jun 5					209	May 12		257	Jun 5, 2002	
LOWEST DAILY MEAN	10	Nov 7					-1.4	Apr 17		-1.4	Apr 17, 2003	
ANNUAL SEVEN-DAY MINIMUM	33	Sep 24					20	Aug 30		20	Aug 30, 2003	
ANNUAL RUNOFF (CFSM)	0.77						0.59			0.59		
ANNUAL RUNOFF (INCHES)	10.41						7.95			7.96		
10 PERCENT EXCEEDS	88						72			72		
50 PERCENT EXCEEDS	52						41			41		
90 PERCENT EXCEEDS	35						24			24		



05427850 YAHARA RIVER AT STATE HWY 113 AT MADISON, WI—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 2002 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: January 2002 to current year.

SUSPENDED-SEDIMENT DISCHARGE: January 2002 to current year.

TOTAL-PHOSPHORUS DISCHARGE: January 2002 to current year.

INSTRUMENTATION.--Automatic pumping sampler since January 2002.

REMARKS.--Records good. Samples are point samples unless otherwise noted.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum, 31.5°C, July 18, 2002; minimum, 0.0°C, on many days during winter.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 64 mg/L, June 4, 2002 and May 11, 2003; minimum observed, 4.0 mg/L, Feb. 18, 2003.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 39.0 tons, June 4, 2002; minimum daily, -0.11 ton, Apr. 17, 2003.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.392 mg/L, May 9, 2003; minimum observed, 0.013 mg/L, Feb. 18, 2003.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 190 lb, May 1, 2003; minimum daily, -1.36 lb, Apr. 17, 2003.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 30.0°C, July 5; minimum, 0.0°C, on many days during winter.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 64 mg/L, May 11; minimum observed, 4.0 mg/L, Feb. 18.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 20.0 tons, May 12; minimum daily, -0.11 ton, Apr. 17.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.392 mg/L, May 9; minimum observed, 0.013 mg/L, Feb. 18.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 190 lb, May 1; minimum daily, -1.36 lb, Apr. 17.

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	21.0	19.5	20.0	5.0	3.0	4.0	1.5	1.0	1.0	1.0	0.0	0.5
2	20.0	17.0	19.0	4.0	1.5	3.0	1.5	0.5	1.0	0.5	0.0	0.5
3	17.0	15.0	15.5	4.5	2.5	3.0	1.5	0.5	1.0	2.0	0.0	1.0
4	16.5	15.0	15.5	4.0	2.0	3.0	1.0	0.5	1.0	1.5	0.5	1.0
5	16.0	13.5	14.5	3.0	3.0	3.0	1.0	1.0	1.0	0.5	0.0	0.5
6	15.5	13.5	14.5	4.0	3.0	3.5	1.5	0.5	1.0	1.0	0.0	0.5
7	13.5	11.5	12.5	5.5	3.5	4.5	1.0	0.5	1.0	1.0	0.0	0.5
8	12.5	11.5	12.0	7.5	5.5	6.5	1.0	0.5	1.0	2.0	0.0	1.0
9	14.0	11.5	12.5	9.5	7.0	8.0	1.0	0.5	1.0	1.0	0.0	0.5
10	14.0	12.0	13.0	10.5	9.5	10.0	1.0	0.5	0.5	1.0	0.0	0.5
11	15.5	13.0	14.0	9.5	6.5	8.0	1.0	0.5	0.5	1.5	0.0	0.5
12	15.0	13.0	14.5	7.0	5.5	6.0	1.0	0.5	0.5	1.5	0.0	0.5
13	13.0	10.5	11.5	6.0	4.5	5.5	0.5	0.5	0.5	1.0	0.0	0.5
14	11.0	9.0	10.0	6.0	4.0	5.0	2.0	0.5	1.0	1.0	0.0	0.5
15	10.5	9.0	9.5	4.0	2.0	3.0	1.5	0.5	1.0	1.5	0.0	0.5
16	9.5	7.5	8.5	3.0	1.0	2.0	1.0	0.0	0.5	1.0	0.0	0.5
17	9.0	7.5	8.0	3.0	0.5	1.5	1.0	0.5	0.5	1.0	0.0	0.5
18	7.5	7.0	7.5	3.0	2.0	2.5	2.0	0.5	1.0	0.5	0.0	0.0
19	7.5	6.0	7.0	4.0	2.5	3.0	1.5	0.5	1.0	0.5	0.0	0.0
20	8.0	5.0	6.5	4.0	3.0	3.0	0.5	0.0	0.5	0.5	0.0	0.0
21	7.5	6.5	7.0	3.5	2.0	3.0	1.0	0.0	0.0	1.0	0.0	0.0
22	7.0	5.5	6.5	2.5	1.0	2.0	0.5	0.0	0.0	0.5	0.0	0.0
23	6.0	4.5	5.5	3.5	1.0	2.0	1.0	0.0	0.5	0.5	0.0	0.0
24	5.5	4.0	4.5	2.5	0.0	1.5	1.5	0.0	0.5	0.0	0.0	0.0
25	5.5	4.5	5.0	2.0	0.0	1.0	1.0	0.5	1.0	0.5	0.0	0.0
26	7.5	5.0	6.0	3.0	1.5	2.5	2.0	0.5	1.0	0.5	0.0	0.0
27	7.0	6.0	6.5	3.5	2.5	3.0	1.5	0.5	1.0	0.0	0.0	0.0
28	7.0	5.0	6.0	3.5	2.5	3.0	1.0	0.0	0.5	0.0	0.0	0.0
29	7.0	5.5	6.0	3.0	1.5	2.0	1.5	0.5	1.0	0.0	0.0	0.0
30	6.5	4.0	5.5	2.0	1.0	1.5	1.5	1.0	1.5	0.0	0.0	0.0
31	6.5	5.0	5.5	---	---	---	2.0	0.5	1.5	0.0	0.0	0.0
MONTH	21.0	4.0	10.0	10.5	0.0	3.6	2.0	0.0	0.8	2.0	0.0	0.3

## ROCK RIVER BASIN

05427850 YAHARA RIVER AT STATE HWY 113 AT MADISON, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	0.5	0.0	0.0	13.0	7.0	9.5	14.5	11.5	13.0
2	0.0	0.0	0.0	0.5	0.0	0.0	11.0	8.0	9.5	14.5	11.5	13.5
3	0.0	0.0	0.0	0.5	0.0	0.0	8.5	3.5	5.5	16.5	12.0	14.0
4	0.0	0.0	0.0	0.0	0.0	0.0	3.5	1.5	2.5	15.5	12.0	13.5
5	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	2.0	12.5	11.5	12.0
6	0.0	0.0	0.0	0.0	0.0	0.0	5.0	2.5	3.0	16.0	12.0	14.0
7	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	1.0	15.0	13.0	14.0
8	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	1.0	14.0	12.5	13.5
9	0.0	0.0	0.0	0.0	0.0	0.0	7.0	2.0	4.0	17.0	13.0	14.5
10	0.0	0.0	0.0	0.0	0.0	0.0	10.5	4.5	7.0	19.5	15.5	17.0
11	0.0	0.0	0.0	0.0	0.0	0.0	14.0	8.0	11.0	18.0	12.5	15.5
12	0.0	0.0	0.0	0.0	0.0	0.0	14.0	10.0	12.5	15.5	11.5	13.5
13	0.0	0.0	0.0	0.0	0.0	0.0	14.5	10.5	12.0	17.0	13.5	15.5
14	0.0	0.0	0.0	0.5	0.0	0.0	16.5	12.0	14.0	17.0	14.5	15.5
15	0.0	0.0	0.0	1.5	0.0	0.5	19.0	15.0	16.5	16.0	13.5	14.5
16	0.0	0.0	0.0	4.0	0.5	2.0	19.0	9.5	13.5	18.5	14.0	16.5
17	0.0	0.0	0.0	5.0	0.5	2.0	10.5	7.5	9.0	18.5	16.0	17.0
18	0.0	0.0	0.0	4.0	1.5	2.5	8.5	7.5	8.0	19.5	16.5	18.0
19	0.0	0.0	0.0	3.0	1.5	2.0	10.5	7.0	8.5	19.0	18.0	18.5
20	0.0	0.0	0.0	2.0	1.0	1.5	13.0	10.5	12.0	19.5	17.0	18.5
21	0.5	0.0	0.0	2.0	0.5	1.5	12.0	9.5	11.0	19.5	16.0	18.0
22	0.0	0.0	0.0	2.5	0.0	1.5	12.0	8.0	10.0	20.5	16.0	18.0
23	0.5	0.0	0.0	6.5	2.0	4.0	14.5	9.5	11.5	21.0	17.5	19.0
24	0.0	0.0	0.0	9.0	5.0	6.5	13.5	11.0	12.5	21.0	17.5	19.5
25	0.5	0.0	0.0	11.0	5.5	8.0	14.5	10.0	12.5	22.0	18.5	20.5
26	0.5	0.0	0.0	11.0	7.0	8.5	15.5	10.5	13.0	22.5	19.0	21.0
27	0.5	0.0	0.0	9.0	6.5	8.0	17.5	13.5	15.5	23.5	19.5	21.0
28	0.5	0.0	0.0	8.0	4.5	6.5	18.5	15.5	17.0	23.0	21.0	22.0
29	---	---	---	5.0	3.0	4.0	17.0	15.0	16.0	21.0	19.0	20.0
30	---	---	---	7.0	3.0	5.0	16.5	12.5	14.5	21.0	19.0	20.0
31	---	---	---	8.0	4.5	6.0	---	---	---	20.0	17.0	18.0
MONTH	0.5	0.0	0.0	11.0	0.0	2.3	19.0	0.0	9.8	23.5	11.5	16.7
	JUNE			JULY			AUGUST			SEPTEMBER		
1	20.5	16.0	17.5	28.0	24.5	25.5	26.5	24.5	25.0	22.5	19.5	21.5
2	20.0	17.5	19.0	28.5	25.5	27.0	27.5	25.0	26.0	23.0	19.5	22.0
3	19.0	17.5	18.0	29.0	26.5	27.5	26.5	24.5	25.5	23.5	21.0	22.0
4	20.5	17.0	18.5	29.5	26.5	28.0	25.5	24.0	24.5	22.0	20.0	21.0
5	22.0	18.5	20.0	30.0	27.0	28.5	26.5	23.5	24.5	23.0	20.0	21.0
6	21.5	19.0	20.5	29.5	27.0	28.0	28.0	24.5	26.0	24.5	20.5	22.0
7	22.0	18.0	19.5	28.5	25.5	27.0	28.0	25.0	26.5	27.5	22.0	24.0
8	21.5	20.0	20.5	28.0	25.5	26.0	27.0	24.5	25.5	26.5	23.5	24.5
9	23.0	18.5	20.5	25.5	23.0	23.5	26.5	23.5	25.0	26.5	24.0	25.0
10	22.0	20.5	21.5	23.0	21.0	21.5	27.5	24.0	25.5	26.0	23.0	24.5
11	21.5	19.0	20.0	22.5	19.5	21.0	27.0	23.5	25.0	25.0	23.0	24.0
12	21.5	18.0	19.0	24.5	21.0	22.5	24.5	22.0	23.0	24.0	21.0	22.0
13	24.5	19.5	21.5	27.5	23.0	24.5	26.0	22.5	24.0	21.5	20.5	21.0
14	25.0	22.5	24.0	27.5	25.0	26.0	27.0	24.0	25.0	20.5	19.0	19.5
15	26.0	22.0	24.0	26.5	24.0	25.5	28.0	25.5	26.5	20.0	17.5	19.0
16	27.5	23.0	25.0	26.5	24.0	25.0	28.5	26.5	27.5	21.0	18.0	19.0
17	28.5	23.5	25.5	28.0	25.0	26.0	28.5	26.0	27.5	21.5	19.0	20.5
18	29.0	25.5	27.0	26.5	22.5	24.5	27.5	25.5	26.0	22.0	18.5	20.0
19	27.5	24.0	25.0	26.0	23.0	24.0	28.5	26.0	27.0	21.0	17.5	19.0
20	26.0	21.5	23.5	26.0	24.0	25.0	28.5	25.0	26.5	19.0	15.5	17.0
21	27.5	22.5	24.5	26.5	24.5	25.5	29.0	26.0	27.0	19.0	16.5	18.0
22	27.5	23.5	25.5	25.5	23.0	24.5	28.0	25.5	27.0	18.5	17.5	18.0
23	27.5	24.5	26.0	26.0	22.5	24.0	27.5	25.0	26.0	17.5	15.5	16.5
24	28.5	24.0	26.0	25.5	23.5	24.0	27.0	24.5	26.0	18.0	16.0	17.0
25	29.0	26.0	27.5	26.5	24.0	25.0	28.0	25.0	26.5	16.5	14.0	15.0
26	27.0	22.5	25.0	25.5	24.0	24.5	28.0	25.0	26.0	14.5	13.5	14.0
27	24.5	20.5	22.5	28.5	24.5	26.0	28.0	25.0	26.5	13.5	11.5	12.5
28	23.5	21.5	22.5	27.0	24.0	25.5	26.5	23.5	25.0	12.0	11.0	11.5
29	25.0	21.5	23.5	27.0	24.0	25.0	27.0	24.0	25.5	12.5	10.5	11.5
30	26.0	23.0	24.0	27.0	25.0	26.0	25.0	22.5	24.0	12.5	10.5	11.5
31	---	---	---	27.0	24.5	25.5	24.0	22.0	22.5	---	---	---
MONTH	29.0	16.0	22.6	30.0	19.5	25.2	29.0	22.0	25.6	27.5	10.5	19.1

## 05427850 YAHARA RIVER AT STATE HWY 113 AT MADISON, WI—Continued

SUSPENDED SEDIMENT LOAD, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.80	3.80	1.50	0.73	0.50	0.80	6.50	12.0	3.40	2.40	3.80	1.70
2	3.60	7.00	1.80	0.72	0.38	0.91	8.00	8.50	2.80	2.00	2.50	0.65
3	1.20	4.10	1.00	0.66	0.36	0.84	3.50	6.20	3.30	3.00	3.60	2.70
4	1.40	7.40	1.20	0.75	0.44	0.78	6.40	7.10	2.80	2.40	2.80	1.50
5	4.30	6.10	1.30	0.83	0.42	0.93	4.50	8.00	3.00	2.70	2.50	0.71
6	1.90	6.60	1.00	0.69	0.44	1.30	11.0	12.0	1.90	3.80	2.60	1.70
7	3.30	1.10	1.40	0.78	0.35	1.00	3.20	10.0	4.40	4.10	2.40	1.50
8	3.30	9.90	1.10	0.71	0.40	1.70	1.40	12.0	3.60	3.30	2.30	1.10
9	3.70	4.80	0.88	0.75	0.41	1.50	3.10	13.0	4.30	3.50	2.30	1.30
10	3.70	6.10	1.10	0.50	0.37	1.40	3.60	17.0	3.20	2.80	2.70	1.20
11	3.90	8.00	1.00	0.49	0.38	1.70	4.50	15.0	3.00	3.50	3.20	1.30
12	4.10	6.40	1.10	0.65	0.46	1.80	4.40	20.0	2.00	2.50	1.50	1.10
13	4.40	4.90	1.10	0.61	0.42	2.10	3.30	11.0	2.10	1.90	1.90	3.60
14	2.00	7.10	0.98	0.50	0.44	2.50	2.20	11.0	2.00	1.00	2.00	6.70
15	6.40	4.40	1.40	0.46	0.39	4.00	6.40	9.50	2.10	7.40	2.30	6.10
16	3.60	3.80	0.81	0.60	0.41	4.80	11.0	7.70	1.40	3.40	2.70	1.90
17	3.80	3.30	0.96	0.49	0.37	4.20	-0.11	6.40	1.90	3.40	1.70	2.00
18	2.20	3.60	1.30	0.52	0.42	3.80	3.70	6.20	2.70	0.90	1.00	2.20
19	5.80	3.50	1.50	0.42	0.43	3.00	1.90	5.20	1.90	1.60	2.60	2.70
20	4.20	3.70	1.10	0.52	0.56	3.20	2.80	8.20	2.30	1.90	1.30	1.80
21	3.00	3.50	1.20	0.43	0.84	3.00	6.90	5.50	2.00	2.40	3.80	1.90
22	4.20	2.10	0.67	0.40	0.98	4.10	2.70	5.50	2.20	1.60	1.70	1.50
23	2.30	3.20	0.91	0.31	0.61	2.90	3.20	5.50	2.80	1.40	1.50	1.80
24	2.80	3.10	0.83	0.30	0.61	3.80	3.40	5.90	2.50	1.50	1.90	1.90
25	3.40	2.40	0.83	0.36	0.67	3.60	3.40	5.90	1.70	0.66	3.20	1.80
26	4.00	2.20	0.77	0.41	0.67	3.80	2.20	5.40	4.30	3.10	2.90	1.60
27	4.70	1.90	0.79	0.31	0.66	4.30	2.10	5.30	3.80	2.90	1.80	2.20
28	4.80	1.60	1.00	0.38	0.81	3.60	4.10	5.30	3.10	1.60	0.77	2.00
29	4.90	2.50	0.95	0.38	---	7.50	2.00	5.00	3.20	1.30	5.50	1.60
30	3.90	2.20	0.90	0.40	---	4.90	3.90	4.50	2.90	1.80	0.98	1.90
31	4.20	---	0.93	0.51	---	3.90	---	4.50	---	2.90	2.40	---
TOTAL	112.80	130.30	33.31	16.57	14.20	87.66	125.19	264.30	82.60	78.66	74.15	61.66

WATR YEAR 2003 TOTAL 1,081.40

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.4	8.78	6.51	4.86	3.25	2.96	45.5	190	33.8	31.0	75.1	29.5
2	27.3	15.5	8.07	4.79	2.46	3.18	56.6	112	26.1	27.0	49.4	11.5
3	11.2	8.78	4.66	4.40	2.33	2.81	23.0	70.3	30.4	40.7	71.1	47.8
4	16.1	15.2	5.63	4.95	2.90	2.49	39.3	69.9	26.7	33.4	57.0	26.5
5	43.7	12.2	6.04	5.52	2.73	2.79	26.2	68.3	29.0	37.8	50.0	13.2
6	15.5	12.7	5.06	4.57	2.85	3.79	68.1	87.3	18.4	53.2	51.2	32.6
7	22.3	2.25	7.17	5.14	2.32	2.80	26.4	85.8	42.5	58.4	48.0	27.7
8	17.7	20.1	5.57	4.73	2.63	4.35	14.8	159	30.1	48.5	44.7	20.5
9	16.2	10.0	4.78	4.99	2.65	3.60	42.5	192	33.5	53.8	43.8	25.2
10	13.5	13.2	6.26	3.30	2.38	3.18	48.4	159	26.4	44.3	51.8	25.0
11	13.6	17.9	5.89	3.25	2.49	3.79	57.5	114	27.1	56.8	61.6	26.8
12	13.8	14.7	6.54	4.33	3.01	3.94	53.9	185	18.8	41.9	28.3	22.2
13	14.4	11.6	7.04	4.01	2.73	4.62	38.9	92.5	21.3	33.6	36.4	74.6
14	6.62	17.5	6.26	3.30	2.87	5.85	25.1	76.8	20.5	18.7	37.6	121
15	20.3	11.2	9.01	3.01	2.56	10.2	68.1	68.9	21.5	139	41.8	86.9
16	11.2	10.0	5.42	3.96	2.64	12.9	118	61.4	15.3	65.9	49.7	27.3
17	12.0	8.88	6.45	3.26	2.39	12.1	-1.36	50.8	20.2	70.7	30.0	27.8
18	7.08	9.98	8.38	3.42	2.68	11.4	51.8	49.3	29.9	19.4	18.0	30.0
19	18.7	10.1	10.2	2.78	2.68	9.57	29.8	41.0	21.2	35.8	46.7	36.2
20	13.7	11.0	7.13	3.41	3.30	10.8	47.1	64.3	25.9	43.7	22.6	23.7
21	10.0	10.8	7.69	2.82	4.68	10.7	109	43.0	22.9	52.9	67.6	24.6
22	13.8	6.59	4.44	2.61	5.17	15.8	40.0	41.1	24.8	35.5	29.7	19.3
23	7.52	10.5	6.07	2.05	3.06	12.0	44.6	39.7	31.5	29.7	25.9	23.6
24	8.62	10.3	5.54	2.00	2.89	16.3	44.6	40.8	27.6	30.3	31.7	25.0
25	10.1	8.36	5.52	2.36	3.06	16.7	42.1	38.7	19.5	12.9	53.7	23.4
26	11.5	8.04	5.15	2.67	2.89	18.5	25.7	34.0	50.4	59.1	48.2	19.6
27	13.1	7.16	5.24	2.03	2.71	22.4	23.3	30.8	46.1	56.0	30.1	26.8
28	12.7	6.08	6.72	2.48	3.14	20.1	47.3	31.8	38.9	31.8	12.7	24.8
29	12.7	10.1	6.32	2.47	---	43.7	29.8	37.5	40.6	26.2	91.5	19.7
30	9.66	9.05	5.96	2.63	---	30.2	65.5	41.8	37.8	35.4	16.6	23.2
31	10.1	---	6.19	3.32	---	26.0	---	46.5	---	57.0	40.3	---
TOTAL	463.10	328.55	196.91	109.42	81.45	349.52	1,351.54	2,423.3	858.7	1,380.4	1,362.8	966.0

WATER YEAR 2003 TOTAL 9,871.69

## ROCK RIVER BASIN

05427850 YAHARA RIVER AT STATE HWY 113 AT MADISON, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Dis-charge, cfs (00060)	Sam-pling method, code (82398)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)	Chloro- phyll a wat un- trichr. method, uncorr, ug/L (32210)	Sus- pended sed- iment concen- tration mg/L (80154)
OCT 2002							
02...	0940	69	10	--	0.074	--	20
04...	1420	48	10	--	0.061	--	10
10...	1345	43	10	--	0.058	--	33
16...	1000	39	10	--	0.053	--	34
22...	1335	64	10	--	0.040	--	24
NOV							
06...	1220	59	10	--	0.040	--	42
FEB 2003							
18...	1055	38	10	--	0.013	--	4
MAR							
12...	1100	38	10	0.006	0.019	4.33	18
APR							
09...	1040	49	10	--	--	--	23
09...	1045	49	50	--	--	--	12
MAY							
15...	1020	84	10	0.003	0.161	120	44
15...	1025	84	50	0.003	0.155	117	34

05427850 YAHARA RIVER AT STATE HWY 113 AT MADISON, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

## COMPOSITE SAMPLES

Beginning Date	Ending date	Beginning Time	Ending time	Discharge, cfs (00060)	Sampling method, code (82398)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
APR 02-02	20030402	0300	2100	76	50	0.138	38
APR 06-06	20030406	0300	2100	85	50	0.147	53
APR 16-16	20030416	0300	2100	110	50	0.197	38
APR 20-20	20030420	0300	2,00	43	50	0.207	24
APR 28-28	20030428	0300	2100	53	50	0.164	31
APR 30-30	20030430	0300	2100	69	50	0.170	20
MAY 01-01	20030501	0300	2100	188	50	0.189	23
MAY 04-04	20030504	0300	2100	75	50	0.175	34
MAY 07-07	20030507	0300	2100	87	50	0.151	44
MAY 09-09	20030509	0300	2100	102	50	0.392	43
MAY 11-11	20030511	0300	2100	108	50	0.217	64
MAY 12-12	20030512	0300	2100	209	50	0.162	35
MAY 13-13	20030513	0300	2100	104	50	0.166	37
MAY 14-14	20030514	0300	2100	89	50	0.161	44
MAY 16-16	20030516	0300	2100	80	50	0.143	36
MAY 21-21	20030521	0300	1200	65	50	0.122	31
MAY 26-26	20030526	0300	2100	51	50	0.126	39
MAY 28-28	20030528	0300	2100	49	50	0.114	41
MAY 31-31	20030531	0300	2,00	51	50	0.179	34
JUN 03-03	20030603	0300	2100	47	50	0.118	26
JUN 07-07	20030607	0300	2100	61	50	0.131	26
JUN 09-09	20030609	0300	2100	53	50	0.119	31
JUN 13-13	20030613	0300	2100	39	50	0.099	20
JUN 20-20	20030620	0300	2100	34	50	0.137	24
JUN 24-24	20030624	0300	2100	28	50	0.183	33
JUN 28-28	20030628	0300	2100	37	50	0.192	31
JUL 07-07	20030707	0300	2100	47	50	0.227	32
JUL 10-10	20030710	0300	2100	32	50	0.257	33
JUL 15-15	20030715	0300	2100	99	50	0.266	29
JUL 20-20	20030720	0300	2100	38	50	0.210	18
JUL 26-26	20030726	0300	2100	45	50	0.239	25
AUG 05-05	20030805	0300	2100	28	50	0.331	33
AUG 29-29	20030829	0300	2100	63	50	0.272	33
SEP 07-07	20030907	0300	2100	25	50	0.208	22
SEP 13-13	20030913	0300	2100	74	50	0.201	19
SEP 14-14	20030914	0300	2100	140	50	0.165	16
SEP 15-15	20030915	0300	2100	110	50	0.150	21
SEP 16-16	20030916	0300	2100	36	50	0.141	20

## 05427948 PHEASANT BRANCH AT MIDDLETON, WI

LOCATION.--Lat 43°06'12", long 89°30'42", in NE 1/4 NW 1/4 sec.11, T.7 N., R.8 E., Dane County, Hydrologic Unit 07090001, on left bank at bridge on U.S. Highway 12, 2.5 mi upstream from Lake Mendota, at Middleton.

DRAINAGE AREA.--18.3 mi<sup>2</sup>, of which 1.22 mi<sup>2</sup> is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1974 to current year.

GAGE.--Water-stage recorder, crest-stage gage, parshall flume, and concrete control. Datum of gage is 901.5 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges and July 29 to Aug. 7, which are fair (see page 11). Low flows occasionally affected by construction activities upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	2.9	1.9	1.9	1.6	1.4	2.7	54	3.3	2.8	1.3	0.60
2	3.6	2.9	2.0	1.9	1.7	e1.4	2.6	11	2.5	2.0	1.2	0.68
3	5.1	2.9	2.1	1.8	2.0	1.4	2.7	5.6	1.9	1.8	1.2	0.80
4	50	2.9	2.1	1.8	1.8	1.4	3.5	4.2	2.0	2.0	1.2	0.81
5	22	3.1	2.1	1.9	1.7	1.5	3.4	11	2.0	3.6	1.2	0.77
6	7.8	3.3	2.0	1.9	1.7	1.6	3.2	7.9	2.2	13	1.1	0.64
7	5.0	3.2	2.0	1.9	1.7	1.5	2.9	11	2.5	15	1.2	0.66
8	4.2	3.1	1.9	2.1	1.5	1.5	3.0	8.8	2.9	8.5	0.96	0.80
9	3.8	3.1	2.1	2.2	1.5	1.4	3.2	18	3.6	5.3	0.89	0.76
10	3.6	3.1	2.1	1.9	e1.5	1.4	3.4	8.6	2.9	3.7	0.87	0.76
11	3.5	4.1	2.0	1.8	1.5	1.5	3.7	17	2.3	2.8	0.94	0.75
12	3.4	3.4	2.1	1.7	1.5	1.6	3.3	12	2.0	2.0	0.97	1.9
13	3.4	3.1	2.1	1.7	1.5	1.7	3.0	6.5	2.0	1.6	0.98	16
14	3.2	3.1	2.1	1.6	1.4	4.3	2.9	7.1	1.9	1.4	1.0	59
15	3.3	3.0	2.1	1.7	1.4	17	3.4	6.8	1.7	28	0.95	14
16	3.2	2.5	2.2	1.7	1.4	11	3.2	5.2	1.6	11	0.85	6.2
17	3.1	2.4	2.1	1.5	1.4	5.6	3.1	4.3	1.6	4.7	0.73	3.9
18	3.5	2.4	4.8	1.5	1.5	3.8	3.2	3.8	1.5	2.9	0.81	2.7
19	3.4	2.6	6.6	1.5	1.4	3.4	e3.8	4.5	1.2	2.1	0.85	2.2
20	3.3	2.5	4.1	1.6	1.6	3.8	e4.2	6.2	1.6	1.8	0.90	1.6
21	3.1	2.4	3.3	1.6	2.4	3.5	e3.7	4.4	1.4	3.3	1.2	1.2
22	3.1	2.4	2.8	1.5	4.1	3.0	2.5	3.5	1.2	3.8	0.97	1.4
23	3.0	2.3	2.5	1.5	4.0	2.5	2.2	3.1	1.2	2.6	0.68	1.7
24	3.1	2.2	2.2	1.4	2.8	2.2	1.9	2.8	1.9	1.9	0.60	1.6
25	4.1	2.2	2.1	1.4	1.4	2.2	1.8	2.5	1.8	1.5	0.69	1.2
26	3.8	2.2	2.1	1.4	1.4	2.0	1.7	2.1	1.8	1.3	0.81	0.92
27	3.4	2.1	1.9	1.4	1.5	2.1	1.5	2.1	1.5	1.2	0.68	0.83
28	3.3	1.9	2.0	1.4	1.4	4.5	1.5	2.3	5.7	1.2	0.54	0.84
29	3.3	1.9	2.0	1.5	---	4.8	1.5	3.8	7.8	1.5	1.0	0.90
30	3.1	1.9	2.0	1.5	---	3.5	10	4.6	4.1	1.3	0.74	1.0
31	3.1	---	2.0	1.6	---	3.1	---	4.0	---	1.3	0.62	---
TOTAL	178.2	81.1	75.4	51.8	50.3	101.6	92.7	248.7	71.6	136.9	28.63	127.12
MEAN	5.75	2.70	2.43	1.67	1.80	3.28	3.09	8.02	2.39	4.42	0.92	4.24
MAX	50	4.1	6.6	2.2	4.1	17	10	54	7.8	28	1.3	59
MIN	3.0	1.9	1.9	1.4	1.4	1.4	1.5	2.1	1.2	1.2	0.54	0.60
CFSM	0.34	0.16	0.14	0.10	0.11	0.11	0.18	0.47	0.14	0.26	0.05	0.25
IN.	0.39	0.18	0.16	0.11	0.11	0.22	0.20	0.54	0.16	0.30	0.06	0.28

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)
	2.73	6.42	(1987)	0.86	(1977)	3.14	12.3	(1986)	0.67	(1991)	2.35	6.11	(1985)	0.34	(1990)
	2.56	7.75	(1997)	0.36	(1991)	6.30	20.4	(1994)	0.46	(1978)	10.0	34.6	(1993)	1.63	(1981)
	5.57	16.8	(1999)	0.95	(1990)	4.25	18.7	(2000)	0.96	(1977)	7.02	41.7	(2000)	0.92	(1989)
	5.35	32.5	(1993)	0.94	(1976)	4.05	26.5	(2001)	0.92	(2003)	3.81	13.0	(1980)	0.74	(1976)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL TOTAL	1,606.0		1,244.05			
ANNUAL MEAN	4.40		3.41		4.78	
HIGHEST ANNUAL MEAN					11.0	
LOWEST ANNUAL MEAN					2.78	
HIGHEST DAILY MEAN	61	Jun 4	59	Sep 14	566	Aug 2, 2001
LOWEST DAILY MEAN	(a)1.6	Aug 3	(a)0.54	Aug 28	0.17	Dec 25-27, 1989
ANNUAL SEVEN-DAY MINIMUM	1.9	Jul 13	(a)0.69	Aug 27	0.18	Dec 21, 1989
MAXIMUM PEAK FLOW			101	Oct 4	964	Aug 2, 2001
MAXIMUM PEAK STAGE			5.80	Oct 4	9.88	Aug 2, 2001
INSTANTANEOUS LOW FLOW			(a)0.52	Aug 28	0.15	Dec 21, 1989
ANNUAL RUNOFF (CFSM)	0.26		0.20		0.28	
ANNUAL RUNOFF (INCHES)	3.50		2.71		3.80	
10 PERCENT EXCEEDS	6.5		5.1		6.7	
50 PERCENT EXCEEDS	3.0		2.1		2.0	
90 PERCENT EXCEEDS	2.0		0.99		0.84	

(a) Result of construction upstream

(e) Estimated due to ice effect or missing record

## 05427948 PHEASANT BRANCH AT MIDDLETON, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1977 to current year.

TOTAL-PHOSPHORUS DISCHARGE: January 1992 to December 1993, and October 1994 to current year.

TOTAL ORTHO-PHOSPHORUS DISCHARGE: January to September 1992.

INSTRUMENTATION.--Automatic pumping sampler since December 1977.

REMARKS.--Records good. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 15,400 mg/L, Apr. 30, 1984; minimum observed, 4 mg/L, Mar. 12, 1979, May 11, 1995, Mar. 17, 2001, July 3 and Aug. 7, 2002.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 2,870 tons, June 10, 1984; minimum daily, 0.01 ton, on many days in 1990, 1991, and 2003 water years.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 15.1 mg/L, July 4, 1994; minimum observed, 0.03 mg/L, Jan. 28, 1998.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 4,310 lb, May 18, 2000; minimum daily, 0.19 lb, Jan. 14, 31, 1998.

TOTAL ORTHO-PHOSPHORUS CONCENTRATIONS: Maximum observed, 2.40 mg/L, Feb. 29, 1992; minimum observed, 0.02 mg/L, Nov. 13, 2001.

TOTAL ORTHO-PHOSPHORUS DISCHARGE: Maximum daily, 966 lb, Feb. 28, 1992; minimum daily, 0.13 lb, Sept. 13, 1992.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 1,520 mg/L, May 1; minimum observed, 6 mg/L, July 28.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 104 tons, May 1; minimum daily, 0.01 ton, Aug. 23-25, 27, 28, and Aug. 30 to Sept. 11.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 1.79 mg/L, Mar. 15; minimum observed, 0.058 mg/L, Feb. 13.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 214 lb, May 1; minimum daily, 0.24 lb, Aug. 28.

TOTAL ORTHO-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.119 mg/L, Oct. 4; minimum observed, 0.033 mg/L, Apr. 30.

SUSPENDED SEDIMENT LOAD, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.22	0.12	0.08	0.10	0.05	0.07	0.15	104	0.12	0.06	0.02	0.01
2	0.24	0.12	0.08	0.10	0.05	0.07	0.16	2.6	0.09	0.04	0.02	0.01
3	0.31	0.12	0.09	0.09	0.06	0.07	0.19	0.67	0.07	0.04	0.02	0.01
4	85	0.12	0.08	0.09	0.06	0.07	0.28	0.26	0.07	0.04	0.02	0.01
5	4.2	0.13	0.08	0.09	0.06	0.08	0.26	1.3	0.08	0.18	0.02	0.01
6	0.44	0.13	0.08	0.09	0.06	0.08	0.22	0.81	0.12	3.7	0.02	0.01
7	0.22	0.13	0.08	0.08	0.05	0.08	0.18	1.5	0.17	4.7	0.02	0.01
8	0.18	0.13	0.08	0.09	0.05	0.07	0.17	0.72	0.24	0.82	0.02	0.01
9	0.16	0.13	0.08	0.09	0.05	0.07	0.20	3.5	0.25	0.16	0.02	0.01
10	0.15	0.12	0.09	0.08	0.05	0.07	0.25	2.9	0.15	0.11	0.02	0.01
11	0.14	0.16	0.08	0.07	0.05	0.08	0.30	4.7	0.09	0.09	0.02	0.01
12	0.14	0.14	0.09	0.07	0.05	0.08	0.22	1.1	0.06	0.06	0.02	0.03
13	0.14	0.12	0.09	0.07	0.05	0.09	0.16	0.32	0.05	0.05	0.02	8.9
14	0.13	0.12	0.09	0.06	0.05	0.45	0.13	0.58	0.04	0.05	0.02	21
15	0.13	0.12	0.09	0.06	0.04	6.1	0.16	0.33	0.04	21	0.02	1.0
16	0.13	0.10	0.09	0.06	0.04	2.2	0.17	0.16	0.04	2.3	0.02	0.20
17	0.13	0.10	0.09	0.05	0.05	0.73	0.19	0.12	0.03	0.31	0.02	0.12
18	0.14	0.10	1.0	0.05	0.05	0.41	0.23	0.10	0.03	0.13	0.02	0.08
19	0.14	0.11	0.85	0.05	0.05	0.30	0.32	0.15	0.03	0.06	0.02	0.06
20	0.13	0.10	0.41	0.05	0.06	0.29	0.35	0.51	0.03	0.04	0.02	0.04
21	0.13	0.10	0.30	0.05	0.17	0.23	0.27	0.34	0.03	0.21	0.03	0.03
22	0.13	0.10	0.24	0.05	0.59	0.16	0.16	0.22	0.03	0.28	0.02	0.06
23	0.12	0.09	0.19	0.05	0.54	0.12	0.14	0.15	0.03	0.15	0.01	0.13
24	0.13	0.09	0.16	0.04	0.23	0.10	0.10	0.11	0.04	0.08	0.01	0.14
25	0.17	0.09	0.14	0.04	0.08	0.10	0.09	0.09	0.04	0.05	0.01	0.10
26	0.15	0.09	0.13	0.05	0.07	0.09	0.07	0.08	0.04	0.04	0.02	0.08
27	0.14	0.09	0.11	0.04	0.07	0.10	0.06	0.08	0.04	0.02	0.01	0.07
28	0.14	0.08	0.11	0.05	0.07	0.49	0.06	0.09	0.46	0.02	0.01	0.07
29	0.13	0.08	0.11	0.05	---	0.49	0.06	0.19	0.67	0.02	0.02	0.08
30	0.13	0.08	0.11	0.05	---	0.21	20	0.31	0.12	0.02	0.01	0.08
31	0.12	---	0.10	0.05	---	0.15	---	0.23	---	0.02	0.01	---
TOTAL	93.96	3.31	5.40	2.01	2.85	13.70	25.30	128.22	3.30	34.85	0.56	32.38

WATER YEAR 2003 TOTAL 345.84

## 05427948 PHEASANT BRANCH AT MIDDLETON, WI—Continued

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.30	1.67	1.05	0.78	0.51	0.50	1.23	214	2.63	1.10	0.67	0.26
2	1.78	1.66	1.12	0.78	0.54	0.49	1.17	40.1	1.87	0.60	0.62	0.30
3	2.79	1.62	1.16	0.73	0.63	0.51	1.22	16.2	1.31	0.41	0.60	0.35
4	203	1.67	1.15	0.72	0.59	0.48	1.59	7.65	1.27	0.61	0.61	0.35
5	60.2	1.78	1.13	0.74	0.55	0.55	1.51	14.9	1.26	1.80	0.59	0.34
6	29.5	1.85	1.10	0.73	0.55	0.57	1.42	8.38	1.39	14.0	0.54	0.28
7	16.3	1.79	1.09	0.73	0.53	0.54	1.29	14.0	1.54	20.1	0.62	0.29
8	10.9	1.77	1.06	0.80	0.49	0.53	1.36	9.81	1.71	9.16	0.48	0.35
9	7.98	1.74	1.13	0.81	0.47	0.51	1.44	24.9	2.11	4.20	0.44	0.33
10	6.10	1.73	1.16	0.70	0.47	0.51	1.51	13.2	1.71	2.57	0.43	0.33
11	4.95	2.30	1.11	0.67	0.47	0.56	1.64	23.6	1.34	1.67	0.45	0.32
12	4.22	1.89	1.17	0.61	0.48	0.59	1.45	13.3	1.14	1.04	0.47	1.02
13	3.67	1.72	1.17	0.60	0.46	0.64	1.34	7.56	1.09	0.76	0.47	36.8
14	3.09	1.73	1.16	0.58	0.45	6.00	1.28	7.40	1.05	0.77	0.47	136
15	2.72	1.70	1.14	0.59	0.43	139	1.49	6.20	0.92	62.6	0.44	24.5
16	2.34	1.43	1.25	0.58	0.43	79.1	1.43	4.10	0.86	19.5	0.40	10.5
17	2.00	1.32	1.76	0.51	0.46	31.1	1.37	2.93	0.81	6.42	0.34	5.39
18	2.03	1.33	5.52	0.53	0.47	10.9	1.41	2.38	0.76	3.38	0.37	2.99
19	1.95	1.46	6.38	0.52	0.47	5.04	1.68	3.77	0.59	2.05	0.38	1.91
20	1.85	1.39	3.28	0.52	0.53	4.51	1.85	4.51	0.78	1.51	0.40	1.11
21	1.77	1.35	2.23	0.52	0.79	3.47	1.63	2.17	0.69	2.34	0.55	0.79
22	1.76	1.32	1.61	0.49	1.37	2.46	1.08	1.61	0.58	2.56	0.43	0.83
23	1.73	1.29	1.33	0.48	1.35	1.72	0.99	1.33	0.59	1.73	0.30	0.98
24	1.76	1.24	1.13	0.45	0.94	1.30	0.84	1.12	0.87	1.18	0.27	0.88
25	2.36	1.23	1.00	0.45	0.48	1.06	0.79	0.93	0.82	0.96	0.31	0.65
26	2.14	1.20	0.97	0.46	0.48	0.92	0.73	0.74	0.82	0.80	0.36	0.47
27	1.95	1.17	0.85	0.44	0.50	0.96	0.67	0.71	0.84	0.69	0.30	0.41
28	1.90	1.07	0.84	0.47	0.48	2.02	0.67	1.13	4.20	0.68	0.24	0.42
29	1.87	1.04	0.82	0.48	---	2.15	0.67	2.64	4.59	0.78	0.45	0.45
30	1.78	1.05	0.84	0.48	---	1.59	40.3	4.01	2.12	0.72	0.33	0.49
31	1.75	---	0.81	0.51	---	1.38	---	3.55	---	0.71	0.27	---
TOTAL	389.44	45.51	47.52	18.46	16.37	301.66	77.05	458.83	42.26	167.40	13.60	230.09

WATER YEAR 2003 TOTAL 1,808.19



05427948 PHEASANT BRANCH AT MIDDLETON, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
OCT 2002						
02...	2315	6.3	50	--	--	25
04...	0755	7.2	50	--	0.130	18
04...	0845	27	50	0.064	0.496	334
04...	0900	45	50	0.060	0.541	414
04...	0915	67	50	0.044	1.04	843
04...	1230	89	50	0.100	1.12	954
04...	2315	50	50	0.119	0.339	132
05...	1730	14	50	--	0.691	31
06...	1745	6.3	50	--	0.716	17
NOV						
20...	0900	2.5	10	--	0.104	120
DEC						
17...	1215	2.1	10	--	0.157	116
18...	1415	6.3	50	--	0.231	74
19...	1300	6.9	50	--	0.173	40
JAN 2003						
08...	1215	2.2	10	--	0.305	66
22...	1235	1.4	10	--	0.061	12
FEB						
13...	1100	1.4	10	--	0.058	48
MAR						
12...	0630	1.5	10	--	0.070	19
14...	2045	6.3	50	--	0.280	44
14...	2300	13	50	--	0.530	69
15...	0500	19	50	--	1.79	180
15...	2315	16	50	--	1.49	100
17...	0545	6.3	50	--	1.19	49
APR						
30...	1230	6.6	50	--	0.263	38
30...	2105	18	50	--	0.228	47
30...	2130	31	50	--	0.979	1,000
30...	2150	46	50	0.033	1.19	1,320
30...	2325	66	50	0.047	1.03	1,190
MAY						
01...	0130	91	50	0.042	1.22	1,520
01...	0745	74	50	0.072	0.570	543
01...	1330	44	50	0.114	0.460	348
02...	0130	17	50	--	0.697	106
03...	0200	6.6	50	--	0.634	56
05...	0610	7.9	50	--	0.240	14
05...	1215	14	50	--	0.263	62
06...	1845	6.3	50	--	0.171	30
07...	1030	12	50	--	0.302	62
07...	1645	14	50	--	0.224	53
08...	2300	6.6	50	--	0.193	19
09...	0100	13	50	--	0.283	92
09...	0545	22	50	--	0.282	87
09...	1145	22	50	--	0.255	80
09...	1800	16	50	--	0.223	51
10...	1215	6.6	50	--	0.201	20
10...	2200	14	50	--	0.440	344
10...	2245	23	50	--	0.477	415
11...	0445	18	50	--	0.264	156
11...	1100	15	50	--	0.244	65
11...	1700	19	50	--	0.235	62
12...	1115	12	50	--	0.194	30
13...	1245	6.3	50	--	0.220	15
13...	1246	6.3	10	--	0.223	15
14...	1715	9.0	50	--	--	37
15...	1730	6.3	50	--	--	13
30...	1745	7.2	50	--	0.175	13
JUN						
17...	1318	1.6	50	--	0.157	8
17...	1319	1.6	10	--	0.154	8
28...	0950	6.4	50	--	0.167	19
29...	0145	9.6	50	--	0.097	14
29...	1400	7.2	50	--	0.121	16

## ROCK RIVER BASIN

05427948 PHEASANT BRANCH AT MIDDLETON, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
JUL 2003						
06...	0725	11	50	--	0.133	14
06...	0735	15	50	--	0.108	11
06...	1945	18	50	--	0.205	48
09...	0230	6.3	50	--	0.154	11
15...	0210	10	50	--	0.118	12
15...	0235	25	50	--	0.525	381
15...	0845	36	50	--	0.407	268
15...	1445	37	50	--	0.406	246
16...	2115	6.9	50	--	0.275	30
28...	1240	1.2	50	--	0.104	6
28...	1241	1.2	10	--	0.101	6
AUG						
20...	1305	0.87	10	--	0.083	8
SEP						
13...	1505	6.7	50	--	0.157	11
13...	1820	22	50	0.066	0.589	336
13...	2120	52	50	0.049	0.447	221
13...	2300	74	50	0.070	0.495	261
15...	1026	14	50	--	0.295	21
15...	1027	14	10	--	0.292	22
16...	0545	7.2	50	--	0.334	12
26...	1035	0.87	10	--	0.093	31

054279509 PHEASANT BRANCH TRIBUTARY AT MIDDLETON, WI

LOCATION.--Lat 43°07'10", long 89°29'02", in SE ¼ NW ¼ sec.36, T.8 N., r.8 E., Dane County, Hydrologic Unit 07090001, on left bank about 1.0 mi from County Highway M and Q bridge in Middleton, and approximately 1.1 mi from mouth.

PERIOD OF RECORD.--October 2000 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 840.2 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Gage-height telemeter at station. Drainage area is not listed because discharge is primarily from springs. On Jan. 22, the ditch that diverted water from some contributing springs to the flume was filled in and the flow from these springs now bypasses the flume.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	4.5	4.3	4.4	2.5	2.9	2.5	5.2	2.3	2.3	2.2	2.2
2	4.3	4.5	4.3	4.4	2.6	2.9	2.5	2.5	2.3	2.3	2.2	2.2
3	4.3	4.5	4.3	4.4	2.6	2.9	2.5	2.5	2.3	2.3	2.2	2.2
4	5.9	4.4	4.3	4.3	2.6	2.8	2.5	2.4	2.3	2.4	2.2	2.2
5	4.6	4.4	4.3	4.4	2.6	2.8	2.4	2.6	2.4	2.4	2.2	2.2
6	4.4	4.4	4.3	4.4	2.6	2.9	2.4	2.4	2.4	2.5	2.1	2.1
7	4.3	4.4	4.3	4.4	2.6	3.0	2.4	2.6	2.4	2.4	2.1	2.2
8	4.4	4.4	4.2	4.4	2.6	3.0	2.4	2.4	2.3	2.4	2.1	2.2
9	4.4	4.4	4.2	4.4	2.6	2.8	2.5	2.7	2.3	2.4	2.1	2.2
10	4.4	4.4	4.3	4.4	2.6	2.6	2.5	2.5	2.3	2.3	2.1	2.3
11	4.4	4.5	4.3	4.3	2.6	2.5	2.4	2.8	2.2	2.2	2.0	2.3
12	4.4	4.4	4.3	4.4	2.6	2.5	2.4	2.5	2.2	2.2	2.1	2.3
13	4.3	4.4	4.3	4.3	e2.6	2.5	2.4	2.4	2.2	2.2	2.0	2.5
14	4.3	4.4	4.3	4.3	e2.5	2.5	2.4	2.4	2.2	2.1	2.1	3.5
15	4.3	4.4	4.4	4.3	e2.4	2.5	2.4	2.4	2.2	3.0	2.1	2.3
16	4.3	4.4	4.3	4.4	e2.4	2.6	2.3	2.4	2.3	2.3	2.1	2.3
17	4.4	4.4	4.4	4.4	e2.4	2.6	2.4	2.3	2.3	2.2	2.1	2.2
18	4.4	4.4	4.5	4.4	e2.5	2.5	2.5	2.4	2.3	2.1	2.1	2.3
19	4.4	4.5	4.4	4.4	2.6	2.6	2.5	2.4	2.3	2.0	2.1	2.3
20	4.3	4.5	4.4	4.4	2.7	2.5	2.5	2.4	2.3	2.0	2.1	2.2
21	4.4	4.5	4.3	4.4	2.7	2.5	2.4	2.3	2.3	2.1	2.1	2.2
22	4.4	4.5	4.3	e3.4	2.7	2.5	2.4	2.3	2.2	2.1	2.1	2.2
23	4.4	4.5	4.3	e2.8	2.7	2.5	2.3	2.3	2.3	2.1	2.1	2.2
24	4.4	4.5	4.3	e2.6	e2.7	2.5	2.3	2.3	2.4	2.0	2.1	2.2
25	4.5	4.4	4.3	2.6	e2.7	2.6	2.3	2.4	2.4	2.0	2.1	2.2
26	4.4	4.4	4.3	2.5	e2.7	2.6	2.3	2.3	2.4	2.1	2.1	2.2
27	4.4	4.4	4.3	2.5	2.8	2.6	2.3	2.3	2.4	2.1	2.1	2.2
28	4.4	4.4	4.3	2.5	2.9	2.7	2.5	2.3	2.5	2.1	2.1	2.2
29	4.5	4.1	4.3	2.5	---	2.6	2.6	2.2	2.4	2.1	2.1	2.2
30	4.5	3.9	4.4	2.5	---	2.4	3.0	2.3	2.3	2.1	2.1	2.2
31	4.5	---	4.4	2.5	---	2.4	---	2.3	---	2.1	2.2	---
TOTAL	137.5	132.2	133.9	118.3	73.1	81.8	73.2	77.5	69.4	68.9	65.5	68.2
MEAN	4.44	4.41	4.32	3.82	2.61	2.64	2.44	2.50	2.31	2.22	2.11	2.27
MAX	5.9	4.5	4.5	4.4	2.9	3.0	3.0	5.2	2.5	3.0	2.2	3.5
MIN	4.2	3.9	4.2	2.5	2.4	2.4	2.3	2.2	2.2	2.0	2.0	2.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

	2001	2002	2003	2001	2002	2003	2001	2002	2003	2001	2002	2003
MEAN	4.51	4.44	4.32	4.03	3.83	3.94	3.84	3.81	3.79	3.84	3.36	3.31
MAX	4.73	4.71	4.65	4.34	4.74	4.70	4.72	4.70	5.27	4.81	4.61	4.35
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)
MIN	4.36	4.22	3.99	3.82	2.61	2.64	2.44	2.50	2.31	2.22	2.11	2.27
(WY)	(2001)	(2001)	(2001)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 2001 - 2003

ANNUAL TOTAL	1,684.3	1,099.5	
ANNUAL MEAN	4.61	3.01	3.85
HIGHEST ANNUAL MEAN			4.69
LOWEST ANNUAL MEAN			3.01
HIGHEST DAILY MEAN	10	Jun 3	5.9
LOWEST DAILY MEAN	3.9	Nov 30	2.0
ANNUAL SEVEN-DAY MINIMUM	4.2	Jan 1	2.0
MAXIMUM PEAK FLOW			7.7
MAXIMUM PEAK STAGE			10.98
INSTANTANEOUS LOW FLOW			1.9
10 PERCENT EXCEEDS	4.9		4.4
50 PERCENT EXCEEDS	4.6		2.5
90 PERCENT EXCEEDS	4.3		2.1

- (a) Also occurred July 20, 24, 25, and Aug. 11, 13, 2003
- (b) Discharge unknown
- (c) Also occurred May 1
- (d) Also occurred Aug. 11, 14, 2003
- (e) Estimated due to ice effect or missing record

05427965 SPRING HARBOR STORM SEWER AT MADISON, WI

LOCATION.--Lat 43°04'45", long 89°28'15", in NW ¼ SE ¼ sec.18, T.7 N., R.9 E., Dane County, Hydrologic Unit 07090001, in city park near the junction of Spring Harbor Drive and University Avenue in Madison.

DRAINAGE AREA.--3.29 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1976 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 855.3 ft above NGVD of 1929.

REMARKS.--Records good except those for periods of flow between 0.00 ft<sup>3</sup>/s and 0.3 ft<sup>3</sup>/s and flow greater than 100 ft<sup>3</sup>/s, which are poor (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.38	0.13	0.00	0.00	0.19	0.10	0.27	19	0.35	0.19	0.06	0.04
2	1.4	0.10	0.00	0.00	0.28	0.07	0.07	1.0	0.18	0.12	0.30	0.05
3	2.5	0.03	0.00	0.00	0.44	0.15	0.35	0.32	0.17	0.17	0.05	0.05
4	26	0.00	0.00	0.00	0.10	0.15	0.78	0.77	0.18	3.7	0.04	0.05
5	2.9	0.08	0.00	0.04	0.08	0.10	1.7	11	0.12	6.3	0.86	0.09
6	0.42	0.10	0.00	0.00	0.00	0.09	0.72	0.82	0.49	8.0	0.07	0.07
7	0.21	0.07	0.00	0.00	0.00	0.08	0.35	12	0.58	5.2	0.05	0.07
8	0.21	0.07	0.00	0.00	0.00	0.05	0.89	1.4	1.5	2.9	0.05	0.10
9	0.08	0.02	0.00	0.00	0.00	0.12	0.80	12	1.3	1.0	0.04	0.13
10	0.02	0.03	0.00	0.00	0.00	0.13	0.51	6.2	0.49	0.42	0.03	0.13
11	0.00	1.4	0.02	0.00	0.00	0.18	0.35	9.1	0.22	0.22	0.06	0.10
12	0.00	0.35	0.09	0.00	0.00	0.23	0.21	1.8	0.16	0.09	0.04	7.1
13	0.00	0.10	0.00	0.00	0.00	0.76	0.14	0.29	0.15	0.02	0.03	41
14	0.00	0.06	0.00	0.00	0.11	4.7	0.12	4.0	0.15	0.00	0.01	34
15	0.00	0.02	0.00	0.00	0.00	4.1	0.10	1.2	0.15	30	0.00	2.3
16	0.15	0.00	0.00	0.00	0.00	2.0	0.10	0.26	0.15	1.4	0.00	0.29
17	0.16	0.00	0.09	0.00	0.00	0.82	0.56	0.12	0.15	0.23	0.00	0.10
18	0.45	0.18	10	0.00	0.10	0.37	2.4	0.10	0.16	0.11	0.02	0.69
19	0.13	0.37	2.0	0.00	0.10	1.9	2.2	4.4	0.19	0.02	0.00	0.70
20	0.06	0.17	0.36	0.00	1.3	1.5	3.1	4.0	0.19	0.03	0.06	0.03
21	0.05	0.24	0.26	0.00	0.99	0.46	0.69	0.43	0.15	5.8	0.09	0.02
22	0.00	0.20	0.21	0.00	0.31	0.23	0.39	0.16	0.16	0.58	0.05	0.18
23	0.00	0.12	0.10	0.00	0.17	0.14	0.32	0.11	0.19	0.17	0.05	0.14
24	0.05	0.02	0.14	0.04	0.10	0.10	0.20	0.10	2.5	0.06	0.03	0.08
25	3.1	0.00	0.13	0.00	0.12	0.10	0.15	0.10	4.0	0.01	0.11	0.05
26	1.0	0.07	0.03	0.00	0.08	0.10	0.06	0.09	1.8	0.00	0.07	0.02
27	0.31	0.01	0.00	0.00	0.10	0.17	0.07	0.09	0.50	0.00	0.06	0.00
28	0.42	0.00	0.00	0.01	0.11	6.4	0.15	0.72	16	0.00	0.12	0.04
29	0.28	0.00	0.00	0.09	---	0.94	0.07	0.42	2.3	0.00	0.66	0.08
30	0.21	0.00	0.00	0.00	---	0.20	22	2.8	0.42	0.00	0.23	0.06
31	0.17	---	0.02	0.14	---	0.09	---	2.3	---	0.07	0.08	---
TOTAL	40.66	3.94	13.45	0.32	4.68	26.53	39.82	97.10	35.05	66.81	3.32	87.76
MEAN	1.31	0.13	0.43	0.010	0.17	0.86	1.33	3.13	1.17	2.16	0.11	2.93
MAX	26	1.4	10	0.14	1.3	6.4	22	19	16	30	0.86	41
MIN	0.00	0.00	0.00	0.00	0.00	0.05	0.06	0.09	0.12	0.00	0.00	0.00
CFSM	0.40	0.04	0.13	0.00	0.05	0.26	0.40	0.95	0.36	0.66	0.03	0.89
IN.	0.46	0.04	0.15	0.00	0.05	0.30	0.45	1.10	0.40	0.76	0.04	0.99

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2003, BY WATER YEAR (WY)

	1985	1993	1985	1990	1994	1993	1999	2000	2000	1993	2001	1980
MEAN	1.09	1.15	0.51	0.52	1.36	1.98	1.94	1.69	2.60	2.07	1.95	1.78
MAX	3.19	3.64	1.99	1.73	3.60	6.97	6.26	6.57	7.20	6.51	5.01	4.97
(WY)	(1985)	(1993)	(1985)	(1990)	(1994)	(1993)	(1999)	(2000)	(2000)	(1993)	(2001)	(1980)
MIN	0.11	0.027	0.000	0.000	0.050	0.19	0.54	0.25	0.33	0.24	0.11	0.11
(WY)	(2001)	(1977)	(1990)	(1977)	(1978)	(1999)	(1985)	(1994)	(1987)	(2001)	(2003)	(1976)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1976 - 2003
ANNUAL TOTAL	453.21	419.44	
ANNUAL MEAN	1.24	1.15	1.56
HIGHEST ANNUAL MEAN			3.09
LOWEST ANNUAL MEAN			0.97
HIGHEST DAILY MEAN	32	41	79
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
MAXIMUM PEAK FLOW		310	754
MAXIMUM PEAK STAGE		2.88	4.16
ANNUAL RUNOFF (CFSM)	0.38	0.35	0.47
ANNUAL RUNOFF (INCHES)	5.12	4.74	6.45
10 PERCENT EXCEEDS	3.4	2.3	3.5
50 PERCENT EXCEEDS	0.14	0.10	0.14
90 PERCENT EXCEEDS	0.00	0.00	0.00

(a) Also occurred Nov. 28, May 16, and July 1  
 (b) Also occurred Jan. 6 and Feb 6  
 (c) Annual seven-day minimum flows are 0.00 for most years

## 05427965 SPRING HARBOR STORM SEWER AT MADISON, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1976 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1991 to current year.

INSTRUMENTATION.--Automatic pumping sampler.

REMARKS.--Records good. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 3,870 mg/L, July 4, 1994; minimum observed, 1 mg/L, Aug. 6, 1993, Sept. 15, 1998, and July 26, 1999.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 137 tons, June 17, 1996; minimum daily, 0.00 ton, on many days.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 1,360 mg/L, Apr. 30; minimum observed, 6 mg/L, May 20.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 34 tons, Sept. 13; minimum daily, 0.00 ton, on many days.

SUSPENDED SEDIMENT LOAD, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN 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	4.7	0.00	0.00	0.00	0.00
2	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00
3	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
4	5.9	0.00	0.00	0.00	0.00	0.00	0.02	0.19	0.00	0.80	0.00	0.00
5	0.08	0.00	0.00	0.00	0.00	0.00	0.04	3.7	0.00	0.75	1.1	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.01	2.1	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.2	0.02	0.59	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.07	0.07	0.12	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.02	2.2	0.04	0.03	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.01	7.0	0.01	0.01	0.00	0.00
11	0.00	0.04	0.00	0.00	0.00	0.00	0.00	1.3	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	3.6
13	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	34
14	0.00	0.00	0.00	0.00	0.00	1.2	0.00	0.26	0.00	0.00	0.00	8.3
15	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.04	0.00	29	0.00	0.09
16	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.06	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.08	0.05	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	1.8	0.00	0.00	0.03	0.64	0.00	0.00	0.00	0.00	0.10
19	0.00	0.00	0.18	0.00	0.00	0.64	0.49	1.5	0.00	0.00	0.00	0.10
20	0.00	0.00	0.01	0.00	0.15	0.22	0.35	0.38	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.12	0.03	0.04	0.00	0.00	2.4	0.00	0.00
22	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.00	0.00	0.01	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.00	0.00	0.00
25	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00
26	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	1.1	0.00	0.09	4.4	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.04	0.00	0.01	0.06	0.00	0.02	0.00
30	0.00	0.00	0.00	0.00	---	0.00	32	0.68	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.06	---	0.00	0.00	---
TOTAL	6.28	0.04	1.99	0.00	0.28	4.32	33.74	25.55	6.17	35.87	1.12	46.19

WATER YEAR 2003 TOTAL 161.55

## ROCK RIVER BASIN

05427965 SPRING HARBOR STORM SEWER AT MADISON, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Suspended sediment concentration mg/L (80154)
OCT 2002				
03...	0420	5.2	50	26
04...	0735	30	50	143
04...	0910	144	50	129
04...	1026	75	10	142
04...	1027	75	50	558
04...	1120	55	50	72
04...	2035	15	50	18
05...	0550	4.1	50	8
25...	0855	4.7	50	12
25...	1700	3.8	50	16
DEC				
19...	1026	1.5	50	23
FEB 2003				
21...	1530	3.6	50	80
MAR				
14...	1420	21	50	206
14...	2030	4.4	50	25
15...	1340	12	50	82
16...	1425	4.4	50	62
19...	1910	5.5	50	216
28...	0815	16	50	124
28...	1425	7.2	50	46
28...	2035	4.1	50	20
APR				
18...	0035	19	50	165
20...	0900	6.1	50	120
30...	0735	4.7	50	167
30...	1150	24	50	788
30...	1415	26	50	193
30...	2025	7.7	50	27
30...	2100	47	50	952
30...	2150	107	50	1,360
30...	2235	105	50	455
MAY				
01...	0305	37	50	70
01...	0915	18	50	48
01...	1830	5.2	50	27
05...	0000	26	50	320
05...	1041	13	50	29
05...	1810	5.8	50	19
07...	0445	17	50	67
07...	0820	41	50	279
07...	0850	69	50	218
07...	0950	38	50	114
07...	2135	5.5	50	18
09...	0035	28	50	139
09...	0110	55	50	132
09...	0620	13	50	22
09...	1535	4.7	50	416
10...	2055	34	50	880
10...	2200	85	50	567
11...	0000	20	50	152
11...	1220	5.8	50	18
11...	1525	11	50	30
12...	0040	5.2	50	12
14...	0840	7.7	50	36
14...	1755	5.5	50	11
19...	1335	5.5	50	61
19...	2210	42	50	223
19...	2335	19	50	138
20...	0850	4.4	50	6
30...	1745	24	50	254
30...	2110	7.2	50	28
31...	0320	4.1	50	9
JUN				
24...	0755	21	50	292
24...	0940	4.1	50	62
25...	1535	24	50	175
26...	0020	4.7	50	11
28...	0715	12	50	25
28...	1000	105	50	158
28...	1230	30	50	68
28...	1840	18	50	71
29...	0355	4.1	50	8

## 05427965 SPRING HARBOR STORM SEWER AT MADISON, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Suspended sediment concentration mg/L (80154)
JUL 2003				
04...	0555	25	50	194
05...	0440	34	50	67
05...	0635	11	50	40
05...	1245	5.5	50	11
06...	0730	85	50	294
06...	0750	86	50	226
06...	1205	8.2	50	17
07...	0625	25	50	80
07...	1235	5.2	50	7
08...	1110	14	50	34
15...	0150	107	50	541
15...	0215	278	50	683
15...	0230	300	50	534
15...	0305	156	50	949
15...	0400	70	50	267
15...	0925	21	50	41
15...	2145	5.8	50	30
21...	0300	31	50	191
21...	0310	63	50	446
21...	0535	8.7	50	56
21...	1145	4.1	50	16
AUG				
05...	1740	25	50	864
05...	1845	3.2	50	243
SEP				
12...	1420	31	50	328
12...	1630	8.2	50	183
12...	1900	41	50	152
13...	0230	7.2	50	25
13...	0840	12	50	65
13...	1400	35	50	53
13...	1800	186	50	614
14...	0015	50	50	43
14...	0225	96	50	70
14...	0655	30	50	21
14...	0810	58	50	36
14...	2030	13	50	23
18...	2355	15	50	102

## 05428000 LAKE MENDOTA AT MADISON, WI

LOCATION.--Lat 43°05'42", long 89°22'12", in SE ¼ sec.12, T.7 N., R.9 E., Dane County, Hydrologic Unit 07090001, in county boat house at dam at outlet, in Madison.

DRAINAGE AREA.--233 mi<sup>2</sup>. Area of Lake Mendota, 15.2 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1916 to current year (incomplete).

REVISED RECORDS.--WDR WI-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above NGVD of 1929, or 5.60 ft below City of Madison datum. Prior to Oct. 1, 1979, at datum 7.82 ft higher; prior to Nov. 15, 1971, nonrecording gage at same site at the higher datum.

REMARKS.--Lake level regulated by concrete dam with two 12-foot gates and 20-foot lock at outlet. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 12.75 ft, June 5, 2000; minimum observed, 8.02 ft, Feb. 24 to Mar. 10, 1920, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 10.58 ft, May 10; minimum recorded, 8.35 ft, Jan. 7 and 17.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.90	9.56	8.84	8.44	8.45	8.67	9.34	10.14	9.82	9.83	9.99	9.68
2	9.92	9.51	8.83	8.43	8.47	8.68	9.37	10.19	9.81	9.83	10.00	9.68
3	9.93	9.46	8.81	8.41	8.48	8.69	9.37	10.17	9.80	9.83	9.99	9.64
4	10.03	9.42	8.79	8.40	8.48	8.71	9.41	10.13	9.79	9.85	9.98	9.64
5	10.07	9.40	8.78	8.40	8.49	8.74	9.44	10.18	9.77	9.87	9.98	9.61
6	10.08	9.37	8.74	8.38	8.50	8.75	9.44	10.19	9.75	9.93	9.99	9.63
7	10.05	9.33	8.73	8.37	8.50	8.76	9.48	10.21	9.76	9.98	9.97	9.60
8	10.02	9.29	8.70	8.38	8.50	8.78	9.51	10.21	9.77	9.99	9.95	9.59
9	10.02	9.26	8.68	8.39	8.51	8.79	9.52	10.24	9.77	9.98	9.94	9.64
10	10.00	9.23	8.66	8.39	8.51	8.80	9.54	10.24	9.76	10.00	9.94	9.62
11	9.99	9.24	8.64	8.39	8.52	8.81	9.57	10.33	9.74	9.99	9.93	9.62
12	9.99	9.21	8.63	8.39	8.53	8.82	9.59	10.33	9.73	9.97	9.91	9.64
13	9.96	9.17	8.62	8.39	8.54	8.83	9.60	10.30	9.72	9.96	9.91	9.75
14	9.90	9.15	8.61	8.39	8.55	8.84	9.62	10.28	9.73	9.95	9.90	10.02
15	9.89	9.12	8.60	8.39	8.55	8.86	9.64	10.28	9.73	10.08	9.90	10.05
16	9.85	9.09	8.57	8.39	8.56	8.90	9.66	10.25	9.73	10.11	9.90	10.04
17	9.84	9.06	8.54	8.40	8.56	8.93	9.66	10.22	9.73	10.11	9.88	10.04
18	9.83	9.03	8.58	8.40	8.57	8.96	9.67	10.18	9.74	10.09	9.88	10.03
19	9.82	9.04	8.63	8.40	8.57	8.99	9.70	10.16	9.73	10.08	9.86	10.03
20	9.79	9.02	8.64	8.40	8.58	9.03	9.77	10.17	9.72	10.07	9.85	9.98
21	9.77	9.05	8.63	8.40	8.60	9.06	9.81	10.11	9.71	10.10	9.85	9.95
22	9.75	9.02	8.62	8.40	8.61	9.08	9.81	10.07	9.70	10.08	9.83	9.96
23	9.73	8.99	8.61	8.40	8.62	9.10	9.82	10.03	9.70	10.06	9.81	9.92
24	9.72	8.98	8.56	8.41	8.63	9.12	9.82	9.99	9.70	10.05	9.79	9.90
25	9.73	8.95	8.55	8.41	8.63	9.14	9.84	9.95	9.73	10.03	9.79	9.87
26	9.73	8.93	8.52	8.41	8.64	9.16	9.84	9.90	9.77	e10.02	9.78	9.84
27	9.70	8.91	8.51	8.41	8.65	9.19	9.85	9.87	9.72	e10.01	9.77	9.84
28	9.68	8.89	8.50	8.42	8.66	9.25	9.87	9.87	9.78	10.00	9.73	9.80
29	9.65	8.89	8.49	8.42	---	9.28	9.87	9.86	9.83	10.00	9.74	9.77
30	9.62	8.91	8.48	8.43	---	9.30	9.94	9.84	9.83	9.99	9.71	9.75
31	9.60	---	8.47	8.44	---	9.31	---	9.85	---	9.99	9.69	---
MEAN	9.86	9.15	8.63	8.40	8.55	8.95	9.65	10.12	9.75	9.99	9.88	9.80
MAX	10.08	9.56	8.84	8.44	8.66	9.31	9.94	10.33	9.83	10.11	10.00	10.05
MIN	9.60	8.89	8.47	8.37	8.45	8.67	9.34	9.84	9.70	9.83	9.69	9.59

e Estimated



## 05429000 LAKE MONONA AT MADISON, WI

LOCATION.--Lat 43°03'48", long 89°23'49', in SE 1/4 SW 1/4 sec.23, T.7 N., R.9 E., Dane County, Hydrologic Unit 07090001, in Brittingham Park, in Madison.

DRAINAGE AREA.--279 mi<sup>2</sup>. Area of Lake Monona, 5.3 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1915 to current year (fragmentary) in reports of the Geological Survey. For 1856 to March 1917 in reports of Wisconsin Railroad Commission, volume 19.

REVISED RECORDS.--WSP 1338: Lake area. WDR WI-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above NGVD of 1929, or 5.60 ft below City of Madison datum. Prior to Oct. 1, 1979, datum 3.61 ft higher; prior to Nov. 15, 1971, nonrecording gage at same site at the higher datum.

REMARKS.--Lake level regulated by concrete dam with four 12-foot stop-log sections and 12-foot lock at outlet of Lake Waubesa. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 7.48 ft, June 14, 15, 2000; minimum observed, 3.22 ft, Jan. 20, 1965, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 5.61 ft, May 15; minimum recorded, 3.44 ft, Mar. 2 and 3.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.02	4.90	4.42	4.27	3.70	3.45	3.87	4.51	5.19	4.84	5.02	4.71
2	5.03	4.90	4.43	4.26	3.69	3.44	3.88	4.59	5.16	4.84	5.01	4.70
3	5.05	4.91	4.41	4.26	3.69	3.45	3.90	4.69	5.13	4.84	5.02	4.67
4	5.10	4.92	4.41	4.26	3.68	3.46	3.91	4.81	5.09	4.87	5.01	4.64
5	5.14	4.92	4.40	4.26	3.68	3.47	3.90	4.95	5.06	4.91	5.00	4.64
6	5.13	4.92	4.39	4.26	3.66	3.48	3.95	5.03	5.05	4.98	4.99	4.63
7	5.11	4.92	4.38	4.25	3.65	3.48	3.98	5.15	5.04	5.03	4.99	4.62
8	5.11	4.93	4.37	4.20	3.64	3.49	3.98	5.25	5.04	5.04	4.98	4.62
9	5.12	4.95	4.36	4.15	3.63	3.49	3.99	5.41	5.04	5.07	4.97	4.62
10	5.13	4.96	4.36	4.10	3.62	3.50	4.00	5.46	5.03	5.06	4.96	4.61
11	5.14	5.02	4.36	4.07	3.62	3.51	4.01	5.52	5.02	5.03	4.95	4.60
12	5.12	5.01	4.35	4.04	3.62	3.51	4.03	5.54	5.00	5.04	4.93	4.61
13	5.06	5.01	4.35	4.01	3.62	3.51	4.04	5.54	4.98	5.05	4.92	4.74
14	5.03	4.98	4.34	3.98	3.61	3.52	4.05	5.58	4.94	5.06	4.92	5.05
15	5.00	4.94	4.34	3.95	3.59	3.54	4.06	5.60	4.89	5.27	4.91	5.09
16	4.98	4.91	4.34	3.93	3.58	3.57	4.10	5.60	4.84	5.29	4.91	5.11
17	4.97	4.88	4.34	3.90	3.57	3.58	4.09	5.59	4.80	5.29	4.92	5.13
18	4.97	4.87	4.39	3.88	3.56	3.59	4.08	5.58	4.77	5.27	4.91	5.14
19	4.94	4.84	4.43	3.86	3.55	3.61	4.10	5.57	4.76	5.24	4.90	5.11
20	4.93	4.80	4.42	3.84	3.54	3.65	4.12	5.55	4.73	5.21	4.88	5.11
21	4.93	4.76	4.39	3.82	3.53	3.66	4.12	5.53	4.72	5.20	4.85	5.11
22	4.90	4.71	4.37	3.80	3.52	3.67	4.12	5.50	4.71	5.18	4.84	5.09
23	e4.88	4.68	4.31	3.78	3.50	3.69	4.15	5.47	4.70	5.15	4.83	5.07
24	e4.89	4.64	4.30	3.77	3.49	3.70	4.16	5.44	4.72	5.13	4.81	5.05
25	4.91	4.60	4.30	3.76	3.48	3.70	4.16	5.42	4.73	5.10	4.80	5.02
26	4.93	4.58	4.30	3.75	3.47	3.71	4.15	5.39	4.72	5.08	4.78	5.00
27	4.93	4.54	4.30	3.74	3.46	3.74	4.15	5.36	4.71	5.07	4.78	4.96
28	4.94	4.51	4.29	3.73	3.45	3.79	4.15	5.30	4.79	5.05	4.76	4.92
29	4.95	4.48	4.30	3.72	---	3.81	4.16	5.26	4.84	5.04	4.75	4.90
30	4.93	4.44	4.29	3.71	---	3.84	4.24	5.24	4.84	5.02	4.74	4.87
31	4.91	---	4.28	3.71	---	3.85	---	5.23	---	5.02	4.72	---
MEAN	5.01	4.81	4.36	3.97	3.59	3.60	4.05	5.31	4.90	5.07	4.90	4.87
MAX	5.14	5.02	4.43	4.27	3.70	3.85	4.24	5.60	5.19	5.29	5.02	5.14
MIN	4.88	4.44	4.28	3.71	3.45	3.44	3.87	4.51	4.70	4.84	4.72	4.60

e Estimated

430140089281000 KRONCKE DRIVE STORM SEWER AT MADISON, WI

LOCATION.--Lat 43°01'40", long 89°28'10", in NW ¼ NE ¼ sec.6, T.6 N., R.9 E., Dane County, Hydrologic Unit 07090001, 100 ft east of Teal Drive and 50 ft west of Tawhee Drive, at Madison.

DRAINAGE AREA.--0.08 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and area-velocity flow meter in a 42-inch circular, concrete pipe. Elevation of gage is 1,030 ft above NGVD of 1929.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.06	0.00	0.00	0.00	0.00
2	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.01	0.00	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00
4	e0.33	0.00	0.00	0.00	0.01	0.00	0.03	0.07	0.00	0.03	0.00	0.00
5	e0.00	0.01	0.00	0.01	0.00	0.00	0.04	0.11	0.00	0.08	0.34	0.00
6	e0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.14	0.00	0.00
7	e0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.17	0.00	0.04	0.00	0.00
8	e0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.02	0.04	0.00	0.00
9	e0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.11	0.00	0.01	0.00	0.00
10	e0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
11	e0.00	0.04	0.00	0.00	0.00	0.01	e0.00	0.06	0.00	0.00	0.00	0.00
12	e0.00	0.00	0.00	0.00	0.00	0.03	e0.00	0.00	0.00	0.00	0.00	0.07
13	e0.00	0.00	0.00	0.00	0.00	0.04	e0.00	0.00	0.00	0.00	0.00	0.73
14	e0.00	0.00	0.00	0.00	0.00	0.13	e0.10	0.07	0.00	0.00	0.00	0.24
15	e0.00	0.00	0.00	0.00	0.00	0.11	e0.00	0.00	0.00	0.77	0.00	0.12
16	e0.00	0.00	0.00	0.00	0.00	0.04	e0.00	0.00	0.00	0.00	0.00	0.00
17	e0.00	0.00	0.03	0.00	0.00	0.01	e0.00	0.00	0.00	0.00	0.00	0.00
18	e0.01	0.03	0.19	0.00	0.02	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
19	e0.00	0.00	0.00	0.00	0.03	0.04	e0.12	0.18	0.00	0.00	0.00	0.00
20	e0.00	0.00	0.01	0.00	0.08	0.02	e0.03	0.01	0.00	0.00	0.00	0.00
21	e0.00	0.01	0.00	0.00	0.04	0.00	e0.00	0.00	0.00	0.23	0.00	0.00
22	e0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
23	e0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
24	e0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.08	0.00	0.00	0.00
25	e0.09	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.09	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.01	e0.00	0.00	0.00	0.00	0.00	0.00
28	0.01	0.00	0.00	0.00	0.00	0.12	e0.00	0.02	0.31	0.00	0.03	0.00
29	0.00	0.00	0.00	0.00	---	0.00	e0.00	0.00	0.00	0.00	0.03	0.00
30	0.00	0.00	0.00	0.00	---	0.00	e0.73	0.17	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.01	---	0.00	---	0.01	---	e0.09	0.00	---
TOTAL	0.48	0.09	0.23	0.03	0.27	0.58	1.13	1.16	0.52	1.43	0.40	1.16
MEAN	0.015	0.003	0.007	0.001	0.010	0.019	0.038	0.037	0.017	0.046	0.013	0.039
MAX	0.33	0.04	0.19	0.01	0.08	0.13	0.73	0.18	0.31	0.77	0.34	0.73
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFSM	0.19	0.04	0.09	0.01	0.12	0.23	0.47	0.47	0.22	0.58	0.16	0.48
IN.	0.22	0.04	0.11	0.01	0.13	0.27	0.53	0.54	0.24	0.66	0.19	0.54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	0.020	0.011	0.011	0.002	0.023	0.021	0.041	0.034	0.027	0.026	0.016	0.040
MAX	0.024	0.020	0.014	0.002	0.036	0.023	0.044	0.037	0.036	0.046	0.020	0.057
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(2003)	(2002)	(2001)
MIN	0.015	0.003	0.007	0.001	0.010	0.019	0.038	0.031	0.017	0.006	0.013	0.024
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2003)	(2002)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 2001 - 2003

ANNUAL TOTAL	7.49	7.48	
ANNUAL MEAN	0.021	0.020	0.022
HIGHEST ANNUAL MEAN			0.023
LOWEST ANNUAL MEAN			0.020
HIGHEST DAILY MEAN	0.40	0.77	0.85
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
ANNUAL RUNOFF (CFSM)	0.26	0.26	0.27
ANNUAL RUNOFF (INCHES)	3.48	3.48	3.71
10 PERCENT EXCEEDS	0.05	0.04	0.05
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

430140089281000 KRONCKE DRIVE STORM SEWER AT MADISON, WI—Continued

## PRECIPITATION QUANTITY

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

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

REMARKS.--Gage established October 2001.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 2.74 in., Sept. 13, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.74 in., Sept. 13.

PRECIPITATION, TOTAL, INCHES WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.12	0.1	0.00	0.00	0.00	0.00	0.00	0.1	0.00	0.00	0.00	0.00
2	0.30	0.0	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00
3	0.1	0.00	0.00	0.00	0.04	0.00	0.11	0.0	0.00	0.03	0.11	0.00
4	1.36	0.00	0.00	0.00	0.00	0.00	0.04	0.35	0.00	0.19	0.00	0.01
5	0.0	0.09	0.00	0.04	0.00	0.03	0.00	0.39	0.00	0.40	0.41	0.00
6	0.1	0.00	0.00	0.00	0.00	0.00	0.14	0.0	0.15	0.58	0.01	0.00
7	0.0	0.00	0.00	0.00	0.00	0.03	0.00	0.66	0.00	0.20	0.00	0.00
8	0.0	0.00	0.00	0.00	0.00	0.00	0.22	0.19	0.14	0.29	0.00	0.00
9	0.0	0.00	0.00	0.00	0.00	0.00	0.11	0.38	0.00	0.07	0.00	0.00
10	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.07	0.00	0.00
11	0.00	0.25	0.00	0.16	0.00	0.06	0.00	0.11	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.59
13	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	2.74
14	0.00	0.00	0.00	0.21	0.02	0.00	0.00	0.38	0.00	0.00	0.00	0.82
15	0.00	0.00	0.00	0.08	0.02	0.00	0.00	0.00	0.00	1.81	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00
17	0.09	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00
18	0.17	0.16	0.67	0.00	0.00	0.00	0.00	0.00	0.03	0.0	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.20	0.48	0.50	0.03	0.0	0.00	0.04
20	0.00	0.00	0.00	0.00	0.00	0.09	0.11	0.03	0.00	0.0	0.02	0.00
21	0.00	0.07	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.40	0.00	0.03
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
24	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00
25	0.45	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.45	0.00	0.02	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.02
27	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.02
28	0.09	0.00	0.00	0.00	0.00	0.53	0.00	0.10	1.13	0.02	0.00	0.00
29	0.00	0.00	0.02	0.00	---	0.02	0.00	0.00	0.00	0.00	0.29	0.00
30	0.00	0.00	0.00	0.00	---	0.00	1.51	0.58	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.13	---	0.00	---	0.07	---	0.26	0.00	---
TOTAL	2.90	0.72	0.69	0.81	0.09	1.05	2.82	4.36	2.27	4.32	0.86	4.32

## 430209089274900 KNOX LANE STORM SEWER AT MADISON, WI

LOCATION.--Lat 43°02'09", long 89°27'49", in NE ¼ SE ¼ sec.31, T.7 N., R.9 E., Dane County, Hydrologic Unit 07090001, 0.1 mi west of Reetz Road and 50 ft east of Widklow Way, at Madison.

DRAINAGE AREA.--0.14 mi<sup>2</sup>.

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

REVISED RECORDS.--Records have been revised for the period Apr. 1 to Sept. 30, 2002, and are published below.

GAGE.--Water-stage recorder and area-velocity flow meter in a 42-inch circular, concrete pipe. Elevation of gage is 1,025 ft above NGVD of 1929.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.00	0.00	0.00	0.00	0.01	0.00	0.00	e0.05	e0.00	e0.00	e0.00	e0.00
2	e0.07	0.00	0.00	0.00	0.03	0.00	0.00	e0.00	e0.00	e0.00	e0.00	e0.00
3	e0.03	0.00	0.00	0.00	0.07	0.00	0.03	e0.00	e0.00	e0.00	e0.01	e0.00
4	e0.30	0.00	0.00	0.00	0.00	0.00	0.06	e0.09	e0.00	e0.06	e0.00	e0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.10	e0.20	e0.00	e0.14	e0.12	e0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	e0.02	e0.17	e0.00	e0.00
7	0.00	0.00	0.00	0.01	0.00	0.00	0.01	e0.29	e0.00	e0.04	e0.00	e0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.11	e0.04	e0.03	e0.06	e0.00	e0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.03	e0.17	e0.00	e0.01	e0.00	e0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.14	e0.00	e0.00	e0.00	e0.00
11	0.00	0.07	0.00	0.00	0.00	0.01	0.00	e0.13	e0.00	e0.00	e0.00	e0.00
12	0.00	0.00	0.00	0.02	0.00	0.04	0.00	e0.00	e0.00	e0.00	e0.00	e0.08
13	0.00	0.00	0.00	0.00	0.00	0.06	0.00	e0.00	e0.00	e0.00	e0.00	e0.79
14	0.00	0.00	0.00	0.00	0.00	0.38	0.00	e0.14	e0.00	e0.00	e0.00	e0.25
15	0.00	0.00	0.00	0.00	0.00	0.32	e0.08	e0.00	e0.00	e0.47	e0.00	e0.00
16	0.00	0.00	0.00	0.00	0.00	0.08	e0.00	e0.00	e0.00	e0.00	e0.00	e0.00
17	0.01	0.00	0.03	0.00	0.00	0.01	e0.00	e0.00	e0.00	e0.00	e0.00	e0.00
18	0.03	0.04	0.37	0.00	0.03	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	e0.00
19	0.00	0.00	0.00	0.00	0.04	0.10	e0.17	e0.20	e0.00	e0.00	e0.00	e0.00
20	0.00	0.00	0.00	0.00	0.19	0.04	e0.05	e0.01	e0.00	e0.00	e0.00	e0.00
21	0.00	0.01	0.00	0.00	0.10	0.00	e0.00	e0.00	e0.00	e0.16	e0.00	e0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	e0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	e0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	e0.00	e0.08	e0.00	e0.00	e0.00
25	0.19	0.00	0.00	0.00	0.00	0.00	e0.00	e0.00	e0.09	e0.00	e0.00	e0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	e0.00
27	0.00	0.00	0.00	0.00	0.00	0.02	e0.00	e0.00	e0.00	e0.00	e0.00	e0.00
28	0.01	0.00	0.00	0.00	0.00	0.32	e0.00	e0.02	e0.35	e0.00	e0.03	e0.00
29	0.00	0.00	0.00	0.00	---	0.00	e0.00	e0.00	e0.00	e0.00	e0.01	e0.00
30	0.00	0.00	0.00	0.00	---	0.00	e0.90	e0.11	e0.00	e0.00	e0.00	e0.00
31	0.00	---	0.00	0.01	---	0.00	---	e0.01	---	e0.02	e0.00	---
TOTAL	0.64	0.12	0.40	0.04	0.47	1.38	1.54	1.60	0.57	1.13	0.17	1.12
MEAN	0.021	0.004	0.013	0.001	0.017	0.045	0.051	0.052	0.019	0.036	0.005	0.037
MAX	0.30	0.07	0.37	0.02	0.19	0.38	0.90	0.29	0.35	0.47	0.12	0.79
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFSM	0.15	0.03	0.09	0.01	0.12	0.32	0.37	0.37	0.14	0.26	0.04	0.27
IN.	0.17	0.03	0.11	0.01	0.12	0.37	0.41	0.43	0.15	0.30	0.05	0.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	0.026	0.014	0.014	0.001	0.036	0.037	0.068	0.052	0.051	0.027	0.019	0.044
MAX	0.031	0.024	0.016	0.001	0.054	0.045	0.085	0.052	0.083	0.036	0.032	0.050
(WY)	(2002)	(2002)	(2002)	(2003)	(2002)	(2003)	(2002)	(2002)	(2002)	(2003)	(2002)	(2002)
MIN	0.021	0.004	0.013	0.001	0.017	0.029	0.051	0.052	0.019	0.017	0.005	0.037
(WY)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 2001 - 2003

ANNUAL TOTAL	13.27	9.18	
ANNUAL MEAN	0.036	0.025	0.032
HIGHEST ANNUAL MEAN			0.039
LOWEST ANNUAL MEAN			0.025
HIGHEST DAILY MEAN	1.1	0.90	1.1
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
ANNUAL RUNOFF (CFSM)	0.26	0.18	0.23
ANNUAL RUNOFF (INCHES)	3.53	2.44	3.12
10 PERCENT EXCEEDS	0.09	0.07	0.09
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

(e) Estimated

## ROCK RIVER BASIN

430209089274900 KNOX LANE STORM SEWER AT MADISON, WI--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR APRIL TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	APR	MAY	JUN	JUL	AUG	SEP
1	0.07	0.12	e0.00	e0.00	e0.00	e0.00
2	0.04	0.05	e0.06	e0.00	e0.00	e0.55
3	0.00	0.00	e0.68	e0.00	e0.00	e0.00
4	0.00	0.00	e1.1	e0.00	e0.14	e0.00
5	0.00	0.00	e0.00	e0.00	e0.00	e0.00
6	0.00	0.06	e0.00	e0.00	e0.00	e0.00
7	0.42	0.00	e0.00	e0.00	e0.00	e0.00
8	0.63	0.00	e0.00	e0.00	e0.00	e0.00
9	0.03	0.09	e0.00	e0.00	e0.00	e0.00
10	0.00	0.00	e0.20	e0.00	e0.00	e0.03
11	0.04	0.20	e0.00	e0.00	e0.00	e0.00
12	0.09	0.14	e0.00	e0.00	e0.00	e0.00
13	0.00	0.00	e0.12	e0.00	e0.28	e0.00
14	0.09	0.00	e0.06	e0.00	e0.00	e0.00
15	0.00	0.00	e0.00	e0.00	e0.00	e0.00
16	0.11	0.00	e0.00	e0.00	e0.00	e0.00
17	0.00	0.00	e0.00	e0.00	e0.13	e0.09
18	0.58	0.00	e0.00	e0.00	e0.00	e0.00
19	0.02	0.00	e0.00	e0.00	e0.00	e0.39
20	0.00	0.00	e0.00	e0.05	e0.00	e0.16
21	0.12	0.02	e0.00	e0.00	e0.17	e0.00
22	e0.00	0.21	e0.00	e0.37	e0.26	e0.00
23	e0.00	0.04	e0.00	e0.00	e0.00	e0.00
24	0.12	0.00	e0.00	e0.00	e0.00	e0.00
25	0.00	0.29	e0.00	e0.00	e0.00	e0.00
26	0.00	0.00	e0.26	e0.00	e0.00	e0.00
27	0.10	0.00	e0.00	e0.04	e0.00	e0.00
28	0.08	0.38	e0.00	e0.00	e0.00	e0.00
29	0.00	0.02	e0.00	e0.08	e0.00	e0.27
30	0.00	0.00	e0.00	e0.00	e0.00	e0.00
31	---	0.00	---	e0.00	e0.00	---
TOTAL	2.54	1.62	2.48	0.54	0.98	1.49
MEAN	0.085	0.052	0.083	0.017	0.032	0.050
MAX	0.63	0.38	1.1	0.37	0.28	0.55
MIN	0.00	0.00	0.00	0.00	0.00	0.00
CFSM	0.60	0.37	0.59	0.12	0.23	0.35
IN.	0.67	0.43	0.66	0.14	0.26	0.40



430230089284300 PIPING ROCK ROAD STORM SEWER AT MADISON, WI

LOCATION.--Lat 43°02'30", long 89°28'43", in SW 1/4 NW 1/4 sec31, T.7 N., R.9 E., Dane County, Hydrologic Unit 07090001, 200 ft west of South Whitney Way at Madison.

DRAINAGE AREA.--0.09 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2002 to September 2003.

GAGE.--Water-stage recorder and area-velocity flow meter in a 38 x 60-inch elliptical, concrete pipe. Elevation of gage is 995 ft above NGVD of 1929.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN 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	0.01	0.00	0.07	0.00	0.00	0.00	0.00
2	0.02	0.00	0.00	0.00	0.01	0.02	0.00	0.04	0.00	0.00	0.00	0.00
3	0.02	0.00	0.00	0.00	0.03	0.01	0.02	0.00	0.00	0.01	0.00	0.00
4	0.27	0.00	0.00	0.00	0.01	0.00	0.04	0.05	0.00	0.04	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.09	0.00	0.08	0.00	0.00
6	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.08	0.00	0.00
7	0.00	0.00	0.00	0.02	0.00	0.01	0.01	0.14	0.00	0.04	0.00	0.00
8	0.00	0.00	0.00	0.01	0.00	0.00	0.04	0.01	0.02	0.03	0.00	0.00
9	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.11	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.01	e0.12	0.00	0.00	0.00	0.00
11	0.00	0.03	0.00	0.00	0.00	0.01	0.01	e0.12	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.05	0.00	0.00	0.00	0.09
13	0.00	0.00	0.00	0.00	0.01	0.04	0.01	0.04	0.00	0.00	0.00	0.65
14	0.00	0.00	0.00	0.00	0.01	0.17	0.00	e0.07	0.00	0.00	0.00	0.16
15	0.00	0.00	0.00	0.00	0.00	0.16	0.02	0.01	0.00	0.42	0.00	0.01
16	0.00	0.00	0.00	0.00	0.00	0.07	0.01	0.02	0.00	0.00	0.00	0.02
17	0.00	0.00	e0.03	0.00	0.00	0.02	0.01	0.01	0.00	0.00	0.00	0.01
18	0.01	0.01	e0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.02	0.04	0.13	e0.13	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.07	0.02	0.06	0.02	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.01	0.04	0.01	0.02	0.00	0.00	0.06	0.00	0.00
22	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.04	0.00	0.00	0.00
25	0.04	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.07	0.00	0.00	0.00
26	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
27	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
28	0.01	0.00	0.00	0.01	0.00	0.12	0.00	0.02	0.25	0.00	0.04	0.00
29	0.01	0.00	0.00	0.00	---	0.01	0.00	0.02	0.00	0.00	0.03	0.00
30	0.00	0.00	0.00	0.00	---	0.01	0.38	0.08	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.03	0.00	---
TOTAL	0.41	0.04	0.03	0.07	0.22	0.83	0.86	1.23	0.39	0.79	0.07	0.94
MEAN	0.013	0.001	0.001	0.002	0.008	0.027	0.029	0.040	0.013	0.025	0.002	0.031
MAX	0.27	0.03	0.03	0.02	0.07	0.17	0.38	0.14	0.25	0.42	0.04	0.65
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFSM	0.15	0.01	0.01	0.03	0.09	0.30	0.32	0.44	0.14	0.28	0.03	0.35
IN.	0.17	0.02	0.01	0.03	0.09	0.34	0.36	0.51	0.16	0.33	0.03	0.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003
MEAN	0.013	0.001	0.001	0.002	0.008	0.027	0.029	0.040	0.013	0.016	0.008	0.030
MAX	0.013	0.001	0.001	0.002	0.008	0.027	0.029	0.040	0.013	0.025	0.014	0.031
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)
MIN	0.013	0.001	0.001	0.002	0.008	0.027	0.029	0.040	0.013	0.007	0.002	0.029
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR  
(OCTOBER-DECEMBER)

FOR 2003 WATER YEAR

WATER YEARS 2002 - 2003

ANNUAL TOTAL		5.88	
ANNUAL MEAN		0.016	
HIGHEST ANNUAL MEAN			0.016 2003
LOWEST ANNUAL MEAN			0.016 2003
HIGHEST DAILY MEAN	0.27	Oct 4	0.65 Sep 13, 2003
LOWEST DAILY MEAN	0.00	Jul 1	0.00 Oct 1, 2002
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 23	0.00 Aug 23, 2002
ANNUAL RUNOFF (CFSM)		0.18	
ANNUAL RUNOFF (INCHES)		2.43	
10 PERCENT EXCEEDS		0.04	
50 PERCENT EXCEEDS		0.00	
90 PERCENT EXCEEDS		0.00	

e Estimated

## 430230089284300 PIPING ROCK ROAD STORM SEWER AT MADISON, WI—Continued

## PRECIPITATION QUANTITY

PERIOD OF RECORD.--October 2002 to September 2003.

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

REMARKS.--Gage established October 2002.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 3.64 in., Sept. 13.

PRECIPITATION, TOTAL, INCHES WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.12	0.05	0.00	0.0	0.0	0.00	0.00	0.08	0.00	0.00	0.00	0.00
2	0.30	0.00	0.02	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.06	0.00
3	0.09	0.00	0.00	0.0	0.0	0.00	0.16	0.00	0.04	0.05	0.17	0.00
4	1.36	0.00	0.00	0.0	0.0	0.00	0.05	0.35	0.00	0.28	0.00	0.00
5	0.00	0.11	0.09	0.0	0.0	0.06	0.04	0.39	0.00	0.52	0.11	0.00
6	0.05	0.05	0.00	0.0	0.0	0.03	0.14	0.00	0.21	0.58	0.04	0.00
7	0.01	0.03	0.00	0.0	0.0	0.07	0.00	0.66	0.00	0.26	0.00	0.00
8	0.02	0.00	0.00	0.0	0.0	0.00	0.10	0.19	0.26	0.27	0.00	0.00
9	0.00	0.01	0.00	0.0	0.0	0.00	0.01	0.38	0.01	0.09	0.00	0.00
10	0.01	0.08	0.00	0.0	0.0	0.00	0.00	0.46	0.01	0.06	0.00	0.00
11	0.00	0.28	0.00	0.16	0.0	0.00	0.00	0.11	0.00	0.00	0.00	0.00
12	0.02	0.01	0.00	0.14	0.0	0.01	0.00	0.00	0.00	0.00	0.00	0.86
13	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.64
14	0.00	0.00	0.32	0.21	0.00	0.00	0.00	0.43	0.00	0.00	0.00	1.01
15	0.00	0.03	0.08	0.1	0.00	0.00	0.00	0.01	0.00	1.81	0.00	0.00
16	0.00	0.00	0.02	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.12	0.00	0.13	0.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.18	0.17	0.61	0.0	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
19	0.00	0.00	0.03	0.0	0.00	0.21	0.64	0.69	0.01	0.00	0.00	0.04
20	0.00	0.00	0.03	0.0	0.00	0.10	0.15	0.03	0.00	0.00	0.06	0.00
21	0.00	0.08	0.0	0.0	0.00	0.00	0.03	0.00	0.00	0.40	0.00	0.06
22	0.00	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
23	0.00	0.04	0.0	0.0	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
24	0.09	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00
25	0.50	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.53	0.00	0.04	0.00
26	0.01	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
27	0.01	0.03	0.0	0.0	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
28	0.09	0.00	0.0	0.0	0.00	0.56	0.00	0.20	1.45	0.02	0.39	0.02
29	0.00	0.02	0.0	0.0	---	0.00	0.00	0.00	0.00	0.00	0.02	0.00
30	0.00	0.19	0.0	0.0	---	0.00	1.96	0.60	0.00	0.00	0.00	0.00
31	0.00	---	0.0	0.13	---	0.01	---	0.05	---	0.22	0.00	---
TOTAL	2.98	1.18	1.33	0.84	0.00	1.13	3.28	4.67	2.93	4.56	0.89	5.74





## 05430150 BADFISH CREEK NEAR COOKSVILLE, WI

LOCATION.--Lat 42°50'00", long 89°11'48", in SW ¼ SE ¼ sec.4, T.4 N., R.11 E., Rock County, Hydrologic Unit 07090001, on right bank, 20 ft upstream from bridge on State Highway 59, 2.2 mi east of Cooksville, and 2.2 mi above the mouth.

DRAINAGE AREA.--82.6 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 807.06 ft above NGVD of 1929.

REMARKS.--Records good (see page 11). Approximately 64 percent of flow is effluent from Nine Springs treatment plant (data provided by Madison Metropolitan Sewerage District). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	92	84	86	79	77	94	204	78	80	e82	64
2	109	92	91	83	80	77	94	136	80	79	e80	69
3	116	91	90	86	85	78	94	113	80	78	e81	69
4	158	94	88	84	83	80	100	105	79	79	e83	69
5	138	95	90	84	83	79	101	140	79	80	80	70
6	108	96	90	86	84	78	99	123	78	80	80	69
7	103	94	88	86	82	80	98	137	80	90	95	68
8	100	95	87	86	80	80	96	135	83	102	80	69
9	98	91	89	86	80	79	95	167	85	102	81	69
10	96	91	89	85	84	e80	99	131	85	107	78	68
11	95	95	89	81	85	81	99	130	88	101	78	69
12	91	95	89	81	e85	83	95	127	87	89	82	70
13	88	93	89	85	81	86	92	112	84	82	84	85
14	91	94	89	84	82	94	92	109	83	81	78	127
15	93	94	89	e84	80	95	93	110	79	159	81	89
16	92	91	91	83	79	92	95	102	79	105	80	78
17	92	91	91	83	82	93	94	97	79	92	76	74
18	95	94	106	79	81	92	93	91	82	88	75	73
19	91	96	115	e82	81	89	94	93	84	81	77	73
20	90	95	102	83	81	94	110	105	80	92	75	70
21	92	96	95	e85	82	93	103	92	77	e140	77	69
22	93	95	91	e85	79	88	100	88	74	e120	e76	72
23	93	91	89	e88	77	87	96	87	75	e100	e72	71
24	92	90	90	e86	80	90	95	81	84	e94	e70	72
25	99	93	83	e84	e80	90	94	79	88	e90	e75	70
26	98	92	79	80	80	88	91	75	101	e87	76	71
27	91	91	86	e82	79	88	90	80	82	e86	74	71
28	96	89	86	e81	79	116	93	85	84	e85	73	70
29	96	85	84	80	---	111	92	85	84	e86	73	72
30	95	85	86	81	---	97	104	82	78	e87	69	73
31	94	---	88	83	---	95	---	83	---	e86	66	---
TOTAL	3,079	2,776	2,793	2,592	2,273	2,730	2,885	3,384	2,459	2,908	2,407	2,203
MEAN	99.3	92.5	90.1	83.6	81.2	88.1	96.2	109	82.0	93.8	77.6	73.4
MAX	158	96	115	88	85	116	110	204	101	159	95	127
MIN	88	85	79	79	77	77	90	75	74	78	66	64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

MEAN	97.0	101	95.7	91.1	107	124	124	111	120	104	96.7	97.5
MAX	139	162	129	122	163	190	193	205	252	171	133	146
(WY)	(1987)	(1986)	(1983)	(1988)	(1994)	(1993)	(1993)	(1999)	(1996)	(1993)	(1996)	(2001)
MIN	66.9	69.5	69.7	65.3	73.1	80.4	88.7	78.3	76.4	70.4	59.2	67.6
(WY)	(1978)	(1978)	(1979)	(1991)	(1979)	(1981)	(1990)	(1981)	(1991)	(1977)	(1977)	(1991)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1977 - 2003

ANNUAL TOTAL	37,876	32,489	
ANNUAL MEAN	104	89.0	106
HIGHEST ANNUAL MEAN			136
LOWEST ANNUAL MEAN			80.4
HIGHEST DAILY MEAN	307	Apr 9	204
LOWEST DAILY MEAN	78	(a)Aug 11	64
ANNUAL SEVEN-DAY MINIMUM	81	Aug 6	68
MAXIMUM PEAK FLOW			(b)282
MAXIMUM PEAK STAGE			(c)5.99
10 PERCENT EXCEEDS	125		102
50 PERCENT EXCEEDS	98		86
90 PERCENT EXCEEDS	86		75

(a) Also occurred Sept. 1

(b) Gage height, 5.73 ft

(c) Discharge, 253 ft<sup>3</sup>/s

(e) Estimated due to ice effect or missing record

05430175 YAHARA RIVER NEAR FULTON, WI

LOCATION.--Lat 42°49'35", long 89°10'19", in SE ¼ NE ¼ sec.10, T.4 N., R.11 E., Rock County, Hydrologic Unit 07090001, on left bank, 20 ft upstream from bridge on State Highway 59, 0.5 mi downstream from Badfish Creek, and 2.6 mi northwest of Fulton.

DRAINAGE AREA.--518 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1977 to current year.

REVISED RECORDS.--WDR WI-96-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 789.85 ft above NGVD of 1929. July 1977 to April 1996, recording gage at site about 2,000 ft upstream at datum 2.85 ft higher.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	207	387	e370	322	e240	e130	186	322	399	122	164	130
2	242	386	e340	320	e240	e120	201	217	399	128	162	120
3	266	387	e330	e300	e240	e120	192	188	397	136	173	116
4	379	386	e320	e300	e240	e110	196	176	394	145	166	119
5	486	392	e310	310	e240	e110	198	234	389	140	164	121
6	450	401	e310	312	e240	e120	189	216	284	138	162	122
7	409	400	e310	315	e240	133	176	238	133	150	173	122
8	387	404	e300	314	e240	131	170	244	138	165	158	117
9	367	419	e300	313	e230	e120	169	446	199	171	157	109
10	369	412	e300	313	e230	e130	173	554	286	174	137	122
11	347	415	305	e310	e230	e120	172	538	327	181	151	118
12	334	418	307	e300	e230	130	167	557	315	153	159	120
13	422	418	307	e290	e230	136	163	689	340	139	156	166
14	426	418	313	e290	e220	151	156	709	341	140	149	267
15	435	421	326	e280	e220	154	155	708	330	275	149	200
16	429	421	e330	e270	e220	152	154	666	318	215	138	128
17	420	421	345	e260	e220	151	153	630	315	222	129	135
18	425	427	368	e260	e220	150	158	622	270	309	138	123
19	416	440	389	e260	e220	149	169	617	277	235	135	111
20	408	439	392	e250	e220	159	193	635	253	249	131	115
21	392	436	381	e250	e210	158	175	615	148	368	132	112
22	372	436	370	e250	e130	152	167	601	130	400	130	114
23	370	433	e350	e250	e130	150	160	589	138	377	125	115
24	327	429	e350	e250	e130	151	156	540	150	344	119	114
25	282	430	e340	e250	e130	152	156	547	156	317	121	112
26	304	429	e330	e240	e130	150	152	536	170	269	128	113
27	304	419	e340	e240	e130	150	150	534	152	165	128	113
28	331	411	349	e240	e130	191	148	468	146	146	128	111
29	349	406	345	e240	---	197	139	383	143	164	129	113
30	359	e390	341	e240	---	178	157	399	126	167	125	117
31	355	---	325	e240	---	172	---	404	---	162	122	---
TOTAL	11,369	12,431	10,393	8,579	5,730	4,477	5,050	14,822	7,563	6,466	4,438	3,815
MEAN	367	414	335	277	205	144	168	478	252	209	143	127
MAX	486	440	392	322	240	197	201	709	399	400	173	267
MIN	207	386	300	240	130	110	139	176	126	122	119	109
CFSM	0.71	0.80	0.65	0.53	0.40	0.28	0.32	0.92	0.49	0.40	0.28	0.25
IN.	0.82	0.89	0.75	0.62	0.41	0.32	0.36	1.06	0.54	0.46	0.32	0.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

MEAN	363	415	384	339	370	445	455	414	384	333	302	320
MAX	623	711	558	542	585	760	1,043	858	1,002	862	760	696
(WY)	(2002)	(1986)	(1983)	(1986)	(1986)	(1994)	(1993)	(1993)	(2000)	(1993)	(1993)	(1993)
MIN	171	181	167	192	168	144	168	155	136	121	117	109
(WY)	(1991)	(1990)	(1990)	(1978)	(1991)	(2003)	(2003)	(1981)	(1988)	(1988)	(1988)	(1988)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1977 - 2003
ANNUAL TOTAL	131,416	95,133	
ANNUAL MEAN	360	261	378
HIGHEST ANNUAL MEAN			629
LOWEST ANNUAL MEAN			261
HIGHEST DAILY MEAN	771	709	2,880
LOWEST DAILY MEAN	150	109	60
ANNUAL SEVEN-DAY MINIMUM	158	113	104
MAXIMUM PEAK FLOW		740	3,230
MAXIMUM PEAK STAGE		(a)6.49	11.16
ANNUAL RUNOFF (CFSM)	0.70	0.50	0.73
ANNUAL RUNOFF (INCHES)	9.44	6.83	9.92
10 PERCENT EXCEEDS	502	421	602
50 PERCENT EXCEEDS	379	238	351
90 PERCENT EXCEEDS	181	125	160

(a) Backwater from ice

(e) Estimated due to ice effect or missing record

## 05430500 ROCK RIVER AT AFTON, WI

LOCATION.--Lat 42°36'33", long 89°04'14", in NE ¼ sec.28, T.2 N., R.12 E., Rock County, Hydrologic Unit 07090001, on right bank in Afton, 0.3 mi downstream from highway bridge and 1.1 mi upstream from Bass Creek.

DRAINAGE AREA.--3,340 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1914 to current year. Monthly discharge for January 1914 published in WSP 1308. Unpublished daily discharges for January and February 1914 in District files.

REVISED RECORDS.--WSP 1238: 1916(M), 1919(M), 1933, 1937-38, 1943. WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 742.36 ft above NGVD of 1929. Prior to Aug. 23, 1932, a nonrecording gage 20 ft upstream, and Aug. 23, 1932, to Sept. 30, 1933, water-stage recorder, at same site at datum 1 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair, and periods of discharge below 800 ft<sup>3</sup>/s, which are poor (see page 11). Diurnal fluctuation caused by powerplants above station. Gage-height telemeter and data-collection platform at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,020	1,540	1,090	1,090	e790	e630	1,530	1,370	2,410	840	637	449
2	1,370	1,520	e1,100	1,100	e760	e610	1,570	1,930	2,170	862	630	450
3	1,480	1,470	e1,100	e960	e740	e610	1,590	2,300	1,860	806	683	396
4	1,740	1,480	e1,100	e960	e730	e610	1,590	2,150	1,940	795	682	368
5	1,840	1,470	e1,000	e980	e730	e610	1,560	2,520	1,780	858	595	384
6	1,830	1,370	e1,000	e1,000	e730	e640	1,470	2,520	1,590	903	601	336
7	1,690	1,000	e1,000	1,040	e730	e650	1,570	2,630	1,500	791	688	352
8	1,940	1,060	e1,000	1,090	e730	e650	1,530	2,600	1,450	995	726	478
9	1,870	1,420	e900	1,380	e730	e640	1,450	3,060	1,500	990	679	559
10	1,800	1,430	e900	e1,200	e730	e640	1,470	3,060	1,470	1,250	626	498
11	1,530	1,410	e900	e1,100	e730	733	1,430	2,840	1,190	1,110	610	467
12	1,290	1,380	e900	e1,000	e720	726	1,400	2,940	1,310	1,020	677	430
13	1,310	1,330	e870	e950	e700	721	1,430	3,230	1,320	1,030	714	543
14	1,350	1,350	e870	e940	e700	745	1,360	3,600	1,390	938	723	759
15	1,350	1,440	e870	e920	e700	788	914	3,630	1,410	1,110	646	561
16	1,370	1,390	e880	e900	e700	767	968	3,600	1,400	1,010	528	409
17	1,340	1,400	e900	e860	e700	751	1,020	3,520	1,600	946	538	604
18	1,420	1,400	e950	e860	e700	795	509	3,480	1,580	1,110	544	529
19	1,370	1,320	e1,000	e850	e700	1,070	626	3,400	1,640	1,070	534	489
20	1,360	1,320	e1,000	e840	e710	1,060	851	3,480	1,300	852	465	444
21	1,360	1,320	e1,000	e840	e680	1,320	936	3,370	1,040	1,060	382	667
22	1,430	1,280	e1,000	e830	e590	1,340	1,000	3,330	1,060	1,220	657	626
23	1,440	1,260	e1,000	e830	e560	1,390	1,180	3,420	968	1,150	510	449
24	1,630	1,240	e970	e830	e530	1,340	1,490	3,280	686	1,090	366	515
25	1,330	1,260	e970	e830	e540	1,700	1,480	3,170	844	929	494	558
26	1,220	1,170	e990	e830	e570	1,650	1,700	3,030	764	790	439	474
27	1,350	e1,200	e1,000	e830	e600	1,610	1,580	2,960	684	744	335	444
28	1,220	e1,100	e1,000	e820	e630	1,670	1,410	2,750	855	761	430	586
29	1,590	e1,100	e1,100	e820	---	1,610	1,070	2,560	853	715	481	487
30	1,590	e1,100	1,160	e800	---	1,580	1,190	2,640	822	668	351	466
31	1,560	---	1,120	e790	---	1,540	---	2,610	---	633	384	---
TOTAL	45,990	39,530	30,640	29,070	19,160	31,196	38,874	90,980	40,386	29,046	17,355	14,777
MEAN	1,484	1,318	988	938	684	1,006	1,296	2,935	1,346	937	560	493
MAX	1,940	1,540	1,160	1,380	790	1,700	1,700	3,630	2,410	1,250	726	759
MIN	1,020	1,000	870	790	530	610	509	1,370	684	633	335	336
CFSM	0.44	0.39	0.30	0.28	0.20	0.30	0.39	0.88	0.40	0.28	0.17	0.15
IN.	0.51	0.44	0.34	0.32	0.21	0.35	0.43	1.01	0.45	0.32	0.19	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

MEAN	1,400	1,579	1,473	1,311	1,560	3,315	4,076	2,606	1,848	1,434	1,135	1,194
MAX	8,219	5,884	4,395	3,558	5,647	8,958	10,010	7,911	7,452	5,443	5,376	5,088
(WY)	(1987)	(1986)	(1986)	(1960)	(1938)	(1918)	(1979)	(1973)	(2000)	(1993)	(1924)	(1938)
MIN	254	397	383	275	327	610	1,002	389	314	247	183	212
(WY)	(1940)	(1964)	(1940)	(1959)	(1959)	(1940)	(1931)	(1958)	(1934)	(1934)	(1934)	(1939)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1914 - 2003	
ANNUAL TOTAL	711,448		427,004			
ANNUAL MEAN	1,949		1,170		1,914	
HIGHEST ANNUAL MEAN					3,925	
LOWEST ANNUAL MEAN					557	
HIGHEST DAILY MEAN	4,270	Mar 18	3,630	May 15	13,000	Mar 23, 24, 1929
LOWEST DAILY MEAN	603	Aug 10	335	Aug 27	42	Aug 25, 26, 1934
ANNUAL SEVEN-DAY MINIMUM	720	Sep 12	391	Sep 1	115	Aug 24, 1934
MAXIMUM PEAK FLOW			3,680	May 14	(a)13,000	Mar 23, 1929
MAXIMUM PEAK STAGE			6.52	May 14	(b)13.05	Feb 5, 1916
ANNUAL RUNOFF (CFSM)	0.58		0.35		0.57	
ANNUAL RUNOFF (INCHES)	7.92		4.76		7.79	
10 PERCENT EXCEEDS	3,630		1,850		4,040	
50 PERCENT EXCEEDS	1,600		1,000		1,350	
90 PERCENT EXCEEDS	784		536		482	

(a) Gage height, 11.81 ft, present datum

(b) Present datum, backwater from ice

(c) Estimated due to ice effect or missing record

054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI

LOCATION.--Lat 42°39'03", long 88°33'03", in NW ¼ NE ¼ sec.12, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, on left bank 20 ft downstream from Interstate Highway 43, 1.1 mi upstream from Delavan Lake inlet at Mound Road, and 1.5 mi south of Elkhorn.

DRAINAGE AREA.--4.34 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

REVISED RECORDS.--WDR WI-89-1: 1988.

GAGE.--Water-stage recorder. Datum of gage is 924.70 ft above NGVD of 1929 (Wisconsin Department of Transportation bench mark). Prior to Dec. 4, 1992, at site 180 ft downstream at same datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	0.80	e0.70	0.48	0.50	0.54	0.99	6.9	1.7	0.27	0.73	0.20
2	5.6	0.72	e0.66	e0.45	0.46	e0.50	0.83	1.7	1.4	0.26	0.51	0.25
3	1.4	0.63	e0.64	e0.43	0.64	e0.48	0.77	1.2	1.4	0.27	1.6	0.30
4	10	0.70	e0.60	e0.40	0.61	e0.46	1.9	2.7	1.2	1.2	1.0	0.41
5	2.2	0.84	e0.56	e0.40	0.49	e0.50	1.4	7.7	1.0	9.4	0.66	0.26
6	1.4	0.80	e0.52	e0.42	e0.44	e0.48	1.0	2.3	1.1	8.7	0.57	0.16
7	1.1	0.79	e0.54	e0.50	e0.42	e0.52	1.5	5.0	0.90	3.2	0.60	0.11
8	0.96	0.73	e0.50	e0.70	e0.39	e0.48	1.3	3.0	5.9	10	0.80	0.21
9	0.89	0.66	e0.50	0.92	e0.37	e0.44	1.5	18	1.7	6.6	0.69	0.23
10	0.97	0.61	e0.54	e0.92	e0.36	e0.42	1.5	3.8	1.3	2.5	0.44	0.22
11	0.85	0.77	e0.60	0.52	e0.35	e0.42	1.4	11	1.1	2.0	0.54	0.20
12	0.85	0.82	0.68	0.49	e0.35	e0.50	0.99	5.6	1.00	1.4	0.54	2.4
13	0.79	0.91	0.65	e0.48	e0.34	0.98	0.86	2.9	0.96	0.97	0.54	1.2
14	0.99	0.89	0.41	e0.46	e0.34	3.0	0.92	5.1	0.73	0.84	0.48	3.4
15	1.1	0.82	0.52	e0.43	e0.36	2.5	0.96	3.2	0.60	48	0.65	0.63
16	1.0	0.64	0.58	e0.42	e0.35	1.8	0.96	2.4	0.56	6.2	0.37	0.42
17	1.3	0.59	0.67	e0.42	e0.40	1.5	1.0	2.0	0.54	3.0	0.32	0.37
18	1.4	0.84	5.0	e0.40	e0.44	1.2	1.3	1.7	1.7	2.3	0.42	0.33
19	1.0	0.97	1.8	e0.39	0.52	1.5	1.5	1.5	1.0	1.7	0.43	0.49
20	0.79	0.96	1.0	e0.39	0.60	1.6	1.5	2.3	0.64	1.5	0.44	0.27
21	0.93	1.0	0.69	e0.38	0.72	1.4	1.1	1.4	0.46	3.1	0.44	0.20
22	0.92	0.83	0.60	e0.37	0.56	1.0	0.92	1.5	0.39	1.5	0.56	1.0
23	0.95	0.76	0.55	e0.36	e0.48	0.94	0.84	1.4	0.38	1.2	0.27	0.46
24	1.0	0.71	e0.46	e0.36	e0.44	1.3	0.89	1.3	0.37	1.1	0.22	0.33
25	2.4	0.85	e0.44	e0.36	e0.40	1.4	1.0	1.3	2.9	1.1	0.45	0.32
26	1.0	e0.80	e0.42	e0.34	e0.38	1.2	0.80	1.2	1.4	0.80	0.45	0.89
27	0.83	e0.74	e0.43	e0.34	e0.40	1.4	0.85	1.2	0.51	0.69	0.31	0.46
28	0.83	e0.70	e0.46	e0.40	0.65	2.7	0.84	6.2	0.76	0.78	0.41	0.32
29	0.89	0.95	e0.49	e0.46	---	1.4	0.78	2.3	0.36	0.71	1.6	0.33
30	0.78	0.81	0.70	e0.42	---	0.92	2.9	4.6	0.27	0.92	0.22	0.33
31	0.76	---	0.56	0.61	---	0.95	---	3.5	---	0.65	0.19	---
TOTAL	48.08	23.64	23.47	14.37	12.76	34.43	35.00	115.9	34.23	122.86	17.45	16.70
MEAN	1.55	0.79	0.76	0.46	0.46	1.11	1.17	3.74	1.14	3.96	0.56	0.56
MAX	10	1.0	5.0	0.92	0.72	3.0	2.9	18	5.9	48	1.6	3.4
MIN	0.76	0.59	0.41	0.34	0.34	0.42	0.77	1.2	0.27	0.26	0.19	0.11
CFSM	0.36	0.18	0.17	0.11	0.11	0.26	0.27	0.86	0.26	0.91	0.13	0.13
IN.	0.41	0.20	0.20	0.12	0.11	0.30	0.30	0.99	0.29	1.05	0.15	0.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	2.37	3.47	2.33	1.87	3.73	4.52	4.86	3.59	3.65	2.18	1.55	2.64
MAX	8.38	13.3	6.55	4.62	9.42	10.7	14.4	8.00	9.42	5.39	5.59	10.8
(WY)	(2002)	(1986)	(1985)	(1999)	(2001)	(1986)	(1993)	(2000)	(1996)	(1992)	(1995)	(1986)
MIN	0.30	0.58	0.49	0.45	0.33	1.11	1.17	0.79	0.54	0.44	0.30	0.27
(WY)	(1995)	(1990)	(1990)	(1994)	(1989)	(2003)	(2003)	(1989)	(1988)	(1988)	(1988)	(1987)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	852.26		498.89			
ANNUAL MEAN	2.33		1.37		3.05	
HIGHEST ANNUAL MEAN					5.74	
LOWEST ANNUAL MEAN					1.37	
HIGHEST DAILY MEAN	64	Jun 4	48	Jul 15	113	Feb 19, 1994
LOWEST DAILY MEAN	0.26	Aug 3	0.11	Sep 7	0.03	Sep 14, 1997
ANNUAL SEVEN-DAY MINIMUM	0.34	Aug 5	0.20	Sep 5	0.07	Sep 8, 1997
MAXIMUM PEAK FLOW			160		210	Apr 19, 1993
MAXIMUM PEAK STAGE			9.73		10.00	Apr 19, 1993
ANNUAL RUNOFF (CFSM)	0.54		0.31		0.70	
ANNUAL RUNOFF (INCHES)	7.31		4.28		9.55	
10 PERCENT EXCEEDS	3.7		2.4		6.3	
50 PERCENT EXCEEDS	1.2		0.77		1.3	
90 PERCENT EXCEEDS	0.42		0.36		0.40	

(e) Estimated due to ice effect or missing record

## 054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1983 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1983 to current year.

DISSOLVED AMMONIA NITROGEN DISCHARGE: February 1993 to September 1995.

TOTAL AMMONIA PLUS ORGANIC NITROGEN DISCHARGE: Water years 1984-85 and February 1993 to September 1995.

DISSOLVED NITRITE PLUS NITRATE DISCHARGE: February 1993 to September 1995.

TOTAL NITRITE PLUS NITRATE DISCHARGE: Water years 1984-85.

TOTAL-PHOSPHORUS DISCHARGE: October 1983 to current year.

DISSOLVED ORTHO-PHOSPHORUS DISCHARGE: February 1993 to September 1995.

INSTRUMENTATION.--Automatic pumping sampler since October 1983.

REMARKS.--Records good.

COOPERATION.--Observer furnished by Delavan Lake Sanitary District.

EXTREMES FOR PERIOD OF RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 5,520 mg/L, Aug. 7, 1984; minimum observed, 1 mg/L, on several days during 1984, May 12, 1990, and May 11, 1995.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 136 tons, June 17, 1996; minimum daily, 0.00 ton, on several days in 1994, 1995, 1997 and 2000 water years, Aug. 3, 2002, and June 29 to July 2, 2003.

DISSOLVED AMMONIA NITROGEN CONCENTRATIONS: Maximum observed, 1.00 mg/L, Jan. 24, 1994; minimum observed, <0.015 mg/L, on many days in 1995 water year.

DISSOLVED AMMONIA NITROGEN DISCHARGE: Maximum daily, 298 lb, Mar. 23, 1993; minimum daily, 0.02 lb, Jan. 8-11 and July 1-2, 1995.

TOTAL AMMONIA PLUS ORGANIC NITROGEN CONCENTRATIONS: Maximum observed, 16 mg/L, Nov. 19, 1983; minimum observed, 0.10 mg/L, Oct. 12, 1984.

TOTAL AMMONIA PLUS ORGANIC NITROGEN DISCHARGE: Maximum daily, 1,710 lb, Feb. 19, 1994; minimum daily, 0.09 lb, Jan. 9-11, 1995.

DISSOLVED NITRITE PLUS NITRATE CONCENTRATIONS: Maximum observed, 7.6 mg/L, Apr. 28, 1995; minimum observed, 0.30 mg/L, Aug. 7, 1995.

DISSOLVED NITRITE PLUS NITRATE DISCHARGE: Maximum daily, 1,080 lb, June 8, 1993; minimum daily, 0.43 lb, Aug. 6, 1995.

TOTAL NITRITE PLUS NITRATE CONCENTRATIONS: Maximum observed, 6.10 mg/L, Oct. 19, 1984; minimum observed, <0.10 mg/L, Oct. 12 and July 23, 1985.

TOTAL NITRITE PLUS NITRATE DISCHARGE: Maximum daily, 1,489 lb, May 28, 1984; minimum daily, 0.17 lb, July 23, 1985.

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 8.20 mg/L, Aug. 7, 1984; minimum observed, 0.01 mg/L, Jan. 16, Mar. 14, 1990, and Dec. 27, 1994.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 584 lb, Feb. 19, 1994; minimum daily, 0.01 lb, Aug. 2, 1994.

DISSOLVED ORTHO-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.81 mg/L, Mar. 4, 1993; minimum observed, <0.01 mg/L, on many days during 1995.

DISSOLVED ORTHO-PHOSPHORUS DISCHARGE: Maximum daily, 126 lb, Mar. 23, 1993; minimum daily, 0.00 lb, Aug. 2, 1994, and Jan. 8-11, Aug. 6, 1995.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 1,560 mg/L, May 28; minimum observed, 7 mg/L, May 10, 12, 29 and June 26.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 18 tons, July 15; minimum daily, 0.00 ton, June 29 to July 2.

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 2.33 mg/L, Mar. 14; minimum observed, 0.03 mg/L, Feb. 3.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 81 lb, July 15; minimum daily, 0.05 lb, Feb. 13, 14.

SUSPENDED SEDIMENT LOAD, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.35	0.11	e0.13	0.05	0.02	0.02	0.16	2.6	0.24	0.00	0.03	0.03
2	0.61	0.10	e0.12	e0.04	0.01	e0.01	0.14	0.09	0.16	0.00	0.02	0.04
3	0.09	0.08	e0.11	e0.04	0.02	e0.01	0.14	0.05	0.14	0.00	e0.66	0.05
4	2.8	0.09	e0.10	e0.04	0.02	e0.01	0.35	1.3	0.10	e0.49	0.04	0.06
5	0.23	0.11	e0.09	e0.04	0.02	e0.01	0.27	0.92	0.08	4.0	0.03	0.04
6	0.20	0.11	e0.08	e0.04	e0.01	e0.01	0.20	0.06	0.07	5.1	0.03	0.02
7	0.20	0.11	e0.08	e0.05	e0.01	e0.01	0.27	0.84	0.05	0.27	0.03	0.01
8	0.18	0.10	e0.07	e0.07	e0.01	e0.01	0.18	0.09	2.1	2.2	0.05	0.03
9	0.16	0.09	e0.07	0.08	e0.01	e0.01	0.14	9.7	0.07	0.33	0.05	0.03
10	0.17	0.09	e0.07	0.07	e0.01	e0.01	0.10	0.08	0.05	0.08	0.04	0.03
11	0.15	0.11	e0.07	0.04	e0.01	e0.01	0.07	4.6	0.06	0.06	0.05	0.02
12	0.15	0.12	0.08	0.04	e0.01	0.02	0.05	0.11	0.06	0.04	0.06	0.51
13	0.14	0.14	0.07	e0.03	e0.01	0.03	0.04	0.05	0.06	0.03	0.07	0.15
14	0.17	0.13	0.04	e0.03	e0.01	1.6	0.04	0.64	0.06	0.02	0.07	0.92
15	0.19	0.12	0.05	e0.03	e0.01	0.30	0.04	0.17	0.05	e18	0.11	0.06
16	0.17	0.10	0.06	e0.03	e0.01	0.19	0.04	0.12	0.05	0.26	0.07	0.04
17	0.21	0.09	0.07	e0.02	e0.01	0.16	0.04	0.10	0.04	0.11	0.07	0.04
18	0.22	0.13	2.2	e0.02	e0.01	0.12	0.05	0.09	0.58	0.08	0.10	0.03
19	0.17	0.15	0.17	e0.02	0.02	e0.60	0.06	0.08	0.25	0.05	0.10	0.05
20	0.13	0.15	0.07	e0.02	0.02	e0.64	0.05	e0.95	0.13	0.04	0.10	0.03
21	0.15	0.17	0.05	e0.02	0.02	0.16	0.04	0.08	0.08	e1.3	0.09	0.02
22	0.14	0.14	0.05	e0.01	0.02	0.12	0.03	0.08	0.06	0.07	0.11	e0.41
23	0.15	0.13	0.04	e0.01	e0.01	0.11	0.03	0.08	0.05	0.06	0.05	0.05
24	0.16	0.12	e0.04	e0.01	e0.01	0.16	0.03	0.07	0.05	0.05	0.04	0.04
25	e0.28	0.15	e0.04	e0.01	e0.01	0.18	0.03	0.07	1.5	0.05	0.07	0.04
26	0.15	e0.14	e0.04	e0.01	e0.01	0.17	0.02	0.07	0.07	0.04	0.07	e0.37
27	0.12	e0.13	e0.04	e0.01	e0.01	0.19	0.03	0.07	0.01	0.03	0.04	0.06
28	0.12	e0.12	e0.04	e0.01	0.02	0.40	0.02	5.1	0.02	0.03	0.06	0.04
29	0.13	0.17	e0.04	e0.01	---	0.20	0.02	0.06	0.00	0.03	0.44	0.04
30	0.11	0.15	0.06	e0.01	---	0.14	0.85	2.1	0.00	e0.38	0.04	0.04
31	0.11	---	0.05	e0.01	---	0.15	---	0.65	---	0.03	0.03	---
TOTAL	8.31	3.65	4.29	0.92	0.37	5.76	3.53	31.07	6.24	33.23	2.82	3.30

WATER YEAR 2003 TOTAL 103.49

e Estimated

## 054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI—Continued

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.54	0.24	e0.15	0.16	0.11	0.09	0.59	11.8	0.52	0.17	0.29	0.12
2	5.70	0.21	e0.14	e0.15	0.09	e0.08	0.50	0.80	0.32	0.15	0.23	0.14
3	0.76	0.17	e0.14	e0.14	0.10	e0.08	0.47	0.44	0.29	0.15	e2.70	0.16
4	17.7	0.19	e0.13	e0.13	0.10	e0.07	e3.20	4.41	0.23	e2.00	e1.70	0.22
5	1.66	0.23	e0.12	e0.13	0.08	e0.08	e2.30	6.69	0.19	20.0	0.38	0.14
6	0.92	0.21	e0.11	e0.14	e0.07	e0.08	0.65	0.76	0.19	20.8	0.31	0.09
7	0.72	0.21	e0.12	e0.16	e0.07	e0.08	0.90	5.21	0.15	2.44	0.31	0.06
8	0.61	0.19	e0.11	e0.23	e0.06	e0.08	0.68	1.15	8.29	13.0	0.40	0.11
9	0.55	0.17	e0.10	0.30	e0.06	e0.07	0.59	35.9	0.77	5.56	0.33	0.13
10	0.58	0.16	e0.12	0.29	e0.06	e0.07	0.50	1.59	0.54	1.72	0.20	0.12
11	0.49	0.20	e0.13	0.18	e0.06	e0.07	0.38	19.1	0.44	1.30	0.23	0.11
12	0.48	0.21	0.15	0.16	e0.06	e0.08	0.27	2.90	0.37	0.89	0.23	3.70
13	0.43	0.23	0.14	e0.16	e0.05	e1.60	0.23	1.06	0.34	0.58	0.22	e2.00
14	0.52	0.22	0.09	e0.16	e0.05	11.9	0.25	3.80	0.25	0.47	0.18	5.94
15	0.57	0.20	0.11	e0.15	e0.06	e4.20	0.26	1.01	0.19	e81.0	0.24	0.51
16	0.50	0.16	0.13	e0.15	e0.06	e3.00	0.26	0.64	0.17	3.90	0.13	0.31
17	0.61	0.14	0.15	e0.15	e0.06	0.77	0.28	0.53	0.16	1.53	0.11	0.27
18	0.63	0.20	11.4	e0.14	e0.07	0.58	0.34	0.45	3.25	0.99	0.14	0.24
19	0.47	0.23	0.95	e0.14	0.08	0.74	e2.50	0.41	0.63	0.62	0.14	0.34
20	0.34	0.23	0.38	e0.14	0.10	0.82	e1.20	e3.90	0.30	0.46	0.14	0.18
21	0.39	0.24	0.26	e0.14	0.12	0.71	0.29	0.38	0.20	e5.20	0.13	0.13
22	0.37	0.19	0.22	e0.13	0.09	0.52	0.25	0.40	0.15	0.39	0.16	e1.70
23	0.37	0.18	0.20	e0.13	e0.08	0.49	0.23	0.38	0.13	0.31	0.08	0.29
24	0.40	0.16	e0.17	e0.13	e0.07	0.69	0.24	0.36	0.11	0.26	0.06	0.20
25	e4.00	0.19	e0.16	e0.13	e0.06	0.75	0.27	0.34	7.56	0.26	0.32	0.19
26	0.37	e0.18	e0.15	e0.13	e0.06	0.67	0.22	0.33	1.44	0.18	0.31	e1.50
27	0.29	e0.17	e0.15	e0.13	e0.06	0.75	0.23	0.33	0.37	0.15	0.19	0.27
28	0.28	e0.15	e0.16	e0.15	0.11	e4.50	0.23	17.7	0.53	0.17	e0.70	0.18
29	0.29	0.21	e0.17	e0.17	---	e2.30	0.21	1.08	0.24	0.18	2.43	0.18
30	0.25	0.18	0.24	e0.13	---	0.53	e4.90	8.31	0.18	0.27	0.16	0.18
31	0.23	---	0.19	0.16	---	0.56	---	1.70	---	0.22	0.13	---
TOTAL	44.02	5.85	16.94	4.89	2.10	37.01	23.42	133.86	28.50	165.32	13.28	19.71

WATER YEAR 2003 TOTAL 494.90

e Estimated

## ROCK RIVER BASIN

054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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)
OCT 2002						
01...	2030	--	8.3	50	0.37	124
01...	2230	--	8.3	50	0.23	45
02...	0200	--	9.9	50	0.29	80
02...	0300	--	15	50	0.30	76
02...	0700	--	8.7	50	0.19	26
04...	1015	--	12	50	1.25	941
04...	1100	--	29	50	0.55	280
04...	1130	--	38	50	0.42	171
04...	1330	--	31	50	0.27	47
04...	1730	--	13	50	0.22	24
05...	0705	--	2.4	10	0.13	38
07...	0800	--	1.1	10	--	69
NOV						
04...	0730	--	0.69	10	0.05	49
DEC						
02...	0730	0.66	--	10	0.04	69
13...	1100	--	0.69	10	E.04	40
18...	0515	--	7.9	50	1.09	370
18...	1645	--	11	50	0.74	365
18...	1845	--	11	50	0.39	114
19...	0730	--	1.9	10	0.07	26
JAN 2003						
06...	0735	0.42	--	10	0.06	40
29...	1130	0.46	--	10	0.07	11
FEB						
03...	0805	--	0.56	10	E.03	12
MAR						
14...	1545	--	7.7	50	2.33	791
14...	1800	--	8.3	50	0.66	127
18...	1150	--	1.2	10	0.09	38
APR						
07...	0800	--	1.0	10	0.12	75
11...	1015	--	1.6	10	0.05	18
30...	1600	--	7.2	50	0.37	107
MAY						
01...	0100	--	13	50	0.67	398
01...	0145	--	20	50	0.94	595
01...	0400	--	17	50	0.25	68
01...	0615	--	9.9	50	0.14	25
01...	0730	--	7.5	10	0.11	20
04...	2230	--	15	50	0.60	397
04...	2345	--	22	50	0.42	241
05...	0200	--	20	50	0.22	57
05...	0415	--	13	50	0.14	22
05...	0630	--	8.9	50	0.11	13
05...	0740	--	7.5	10	0.08	11
07...	1445	--	10	50	0.27	121
07...	1700	--	10	50	0.18	40
08...	0725	--	3.1	10	0.07	9
09...	0115	--	10	50	0.36	137
09...	0315	--	29	50	0.80	552
09...	0400	--	54	50	1.04	883
09...	0615	--	37	50	0.27	109
09...	1045	--	18	50	0.18	18
09...	1730	--	8.7	50	0.10	9
10...	0625	--	4.2	10	0.09	7
11...	0045	--	17	50	1.60	1,370
11...	0100	--	27	10	1.66	1,270
11...	0315	--	15	50	0.24	90
11...	0640	--	8.2	10	0.15	25
11...	1645	--	9.1	50	0.182	38
11...	1830	--	15	50	0.21	50
11...	2300	--	12	50	0.15	16
12...	0330	--	7.9	50	0.10	7
14...	1345	--	11	50	0.20	47
14...	1600	--	7.9	50	0.12	19
15...	1045	--	3.3	10	0.05	19
28...	1430	--	25	50	2.15	1,560
28...	1645	--	18	50	0.37	181
28...	2115	--	7.7	50	0.16	33
29...	0745	--	2.4	10	0.08	7
30...	1945	--	19	50	1.51	1,110
30...	2015	--	21	50	0.53	277
30...	2230	--	14	50	0.24	77



## 054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
JUN 2003					
02...	0740	1.4	10	<0.04	42
08...	0345	17	50	1.25	485
08...	0500	23	50	0.19	42
08...	0630	12	50	0.44	752
08...	0900	5.6	10	--	22
09...	1015	1.9	10	0.08	13
16...	0745	0.56	10	--	38
18...	2100	9.3	50	0.77	301
18...	2315	6.5	50	0.35	96
23...	0915	0.40	10	--	50
25...	2015	16	50	1.09	595
25...	2230	13	50	0.31	59
26...	0915	1.0	10	0.14	7
JUL					
05...	0545	25	50	1.24	752
05...	0600	33	50	0.69	389
05...	0630	48	50	0.73	410
05...	0815	32	50	0.28	65
05...	1145	11	50	0.18	19
06...	1600	18	50	1.05	784
06...	1615	27	50	0.61	366
06...	1700	44	50	0.69	366
06...	1845	29	50	0.47	240
06...	2245	11	50	0.20	43
07...	0835	5.2	10	0.13	47
08...	1130	10	50	E.22	56
08...	1345	15	50	E.17	34
08...	1600	8.9	50	E.14	17
08...	2000	19	50	E.42	232
08...	2030	27	50	E.30	138
08...	2100	39	50	E.37	183
09...	0130	17	50	E.17	22
09...	0600	9.1	50	E.14	13
15...	0945	66	50	0.48	181
15...	1300	36	50	0.27	47
15...	1945	18	50	0.14	17
16...	0445	8.7	50	0.12	16
21...	0730	5.4	10	0.11	19
28...	1035	0.85	10	0.04	188
AUG					
04...	0930	1.0	10	0.11	14
18...	1000	0.45	10	0.06	94
25...	0800	0.40	10	0.14	59
29...	0145	7.4	50	0.55	174
SEP					
02...	1005	0.31	10	0.10	60
12...	1815	9.7	50	0.48	108
14...	1100	15	50	0.59	266
14...	1315	11	50	0.29	58
15...	0815	0.62	10	0.14	36

05431016 JACKSON CREEK AT MOUND ROAD NEAR ELKHORN, WI

LOCATION.--Lat 42°38'27", long 88°33'39", in SE ¼ SE ¼ sec.11, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, on left bank at bridge on Mound Road, 2.3 mi south of Elkhorn.

DRAINAGE AREA.--16.8 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 920.00 ft above NGVD of 1929 (Wisconsin Department of Transportation benchmark).

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	1.5	e1.5	e2.0	e1.3	e1.2	3.3	16	8.2	1.6	1.6	0.78
2	13	1.4	e1.4	e1.8	e1.1	e1.1	3.5	8.9	6.4	1.4	1.5	0.83
3	6.4	1.4	e1.3	e1.7	e1.0	e0.90	3.1	5.5	5.8	1.0	1.3	0.83
4	14	1.4	e1.2	e1.5	e0.95	e0.84	3.5	4.5	4.9	1.2	2.1	0.83
5	11	1.4	e1.2	e1.5	e0.90	e0.80	4.4	21	4.2	9.9	2.1	0.71
6	4.5	1.6	e1.1	e1.5	e0.88	e0.76	4.2	12	3.8	10	1.6	0.65
7	3.2	1.5	e1.1	e1.5	e0.86	e0.74	3.7	12	3.8	16	1.4	0.55
8	2.6	1.4	e1.1	e1.6	e0.84	e0.72	3.7	15	9.9	12	1.2	0.50
9	2.3	1.4	e1.0	e1.8	e0.82	e0.72	3.8	47	10	32	1.4	0.45
10	2.2	1.4	e1.0	e1.7	e0.82	e0.70	4.2	26	6.7	17	1.4	0.43
11	2.2	1.4	e1.1	e1.4	e0.80	e0.80	4.6	27	5.9	12	1.1	0.36
12	2.1	1.4	e1.2	e1.2	e0.78	e1.2	4.7	26	4.7	8.7	1.1	0.34
13	1.7	1.4	e1.3	e1.1	e0.76	e2.0	4.0	14	4.2	6.3	1.1	0.69
14	1.5	1.4	e1.2	e1.0	e0.75	4.9	3.4	14	3.8	4.7	1.1	1.6
15	1.6	1.4	e1.1	e0.90	e0.73	4.8	3.1	16	3.3	103	1.1	2.8
16	1.6	1.3	e1.5	e0.85	e0.72	4.9	3.2	12	2.8	45	1.1	1.6
17	1.6	1.2	2.2	e0.80	e0.70	4.8	2.9	9.5	2.6	19	1.0	0.98
18	1.6	1.2	3.2	e0.79	e0.68	4.5	2.7	7.9	2.5	12	0.79	0.78
19	1.9	1.2	8.8	e0.78	e0.74	3.7	2.8	7.0	3.6	8.2	0.72	0.67
20	1.7	1.4	5.2	e0.77	e1.0	4.1	3.3	8.4	2.9	6.5	0.72	0.65
21	1.4	1.4	3.6	e0.76	e1.5	4.4	3.4	6.5	2.5	8.5	0.83	0.61
22	1.4	1.5	3.3	e0.75	e1.2	4.0	3.0	5.4	2.0	6.2	0.77	0.65
23	1.4	1.6	2.7	e0.74	e1.0	3.5	2.6	4.7	1.9	4.6	0.72	0.82
24	1.4	1.6	e2.3	e0.73	e0.90	3.4	2.6	4.5	1.8	3.9	0.71	0.80
25	1.7	1.5	e2.1	e0.72	e0.80	3.4	2.4	4.1	1.7	3.2	0.66	0.68
26	2.6	1.4	e1.9	e0.70	e0.74	3.4	2.2	3.5	4.9	2.8	0.65	0.64
27	2.4	e1.3	e1.7	e0.70	e0.70	3.4	1.6	3.4	2.5	2.5	0.70	0.84
28	2.0	e1.3	e1.6	e0.72	e0.80	3.8	1.6	6.5	2.1	2.1	0.65	0.93
29	2.0	e1.4	e1.6	e0.80	---	4.5	1.6	10	2.1	2.0	0.70	0.78
30	1.8	1.6	e1.7	e0.95	---	4.0	3.8	6.2	1.7	1.9	0.83	0.68
31	1.6	---	2.4	e1.2	---	3.4	---	14	---	1.9	0.83	---
TOTAL	99.6	42.3	63.6	34.96	24.77	85.38	96.9	378.5	123.2	367.1	33.48	24.46
MEAN	3.21	1.41	2.05	1.13	0.88	2.75	3.23	12.2	4.11	11.8	1.08	0.82
MAX	14	1.6	8.8	2.0	1.5	4.9	4.7	47	10	103	2.1	2.8
MIN	1.4	1.2	1.0	0.70	0.68	0.70	1.6	3.4	1.7	1.0	0.65	0.34
CFSM	0.19	0.08	0.12	0.07	0.05	0.16	0.19	0.73	0.24	0.70	0.06	0.05
IN.	0.22	0.09	0.14	0.08	0.05	0.19	0.21	0.84	0.27	0.81	0.07	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

MEAN	6.41	7.60	5.02	7.11	17.8	15.6	23.0	14.9	26.2	6.94	4.64	5.18
MAX	22.4	22.4	10.5	21.6	53.5	48.2	77.4	28.5	66.2	22.6	23.8	14.7
(WY)	(2002)	(1996)	(1996)	(1999)	(2001)	(1993)	(1993)	(2000)	(1996)	(1993)	(1995)	(2001)
MIN	1.45	1.41	2.05	1.13	0.88	2.75	3.23	4.18	3.78	1.23	0.82	0.82
(WY)	(1998)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(1994)	(1994)	(2002)	(1999)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1993 - 2003

ANNUAL TOTAL	2,966.31	1,374.25	
ANNUAL MEAN	8.13	3.77	10.8
HIGHEST ANNUAL MEAN			15.8
LOWEST ANNUAL MEAN			3.77
HIGHEST DAILY MEAN	169	Apr 9	578
LOWEST DAILY MEAN	0.49	Aug 12	0.28
ANNUAL SEVEN-DAY MINIMUM	0.54	Jul 29	0.35
MAXIMUM PEAK FLOW			201
MAXIMUM PEAK STAGE			9.72
ANNUAL RUNOFF (CFSM)	0.48		0.22
ANNUAL RUNOFF (INCHES)	6.57		3.04
10 PERCENT EXCEEDS	14		8.4
50 PERCENT EXCEEDS	4.0		1.6
90 PERCENT EXCEEDS	0.88		0.73

(e) Estimated due to ice effect or missing record

05431016 JACKSON CREEK AT MOUND ROAD NEAR ELKHORN, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1983 to September 1985, February 1993 to current year.

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1999 to current year.  
SUSPENDED-SEDIMENT DISCHARGE: February 1993 to current year.  
DISSOLVED AMMONIA NITROGEN DISCHARGE: February 1993 to September 1995.  
TOTAL AMMONIA PLUS ORGANIC NITROGEN DISCHARGE: February 1993 to September 1995.  
DISSOLVED NITRITE PLUS NITRATE DISCHARGE: February 1993 to September 1995.  
TOTAL PHOSPHORUS DISCHARGE: February 1993 to current year.  
DISSOLVED ORTHO-PHOSPHORUS DISCHARGE: February 1993 to current year.

INSTRUMENTATION.--Automatic pumping sampler since February 1993. Continuous water temperature recorder since October 1999.

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

COOPERATION.--Observer furnished by Delavan Lake Sanitary District.

## EXTREMES OUTSIDE PERIOD OF DAILY RECORD.--

TOTAL AMMONIA PLUS ORGANIC NITROGEN CONCENTRATIONS: Maximum observed, 2.1 mg/L, July 10, 1985; minimum observed, 0.30 mg/L, Jan. 24, 1985.  
TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.55 mg/L, July 10, 1985; minimum observed, 0.03 mg/L, Apr. 2, 1985.  
DISSOLVED ORTHO-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.20 mg/L, Nov. 20, 1984 and May 22, 1985; minimum observed, <0.01 mg/L, July 10, 23, 1985.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 35.0°C, July 24, 2001 and July 4, 2002; minimum, 0.0°C on many days.  
SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 1,420 mg/L, June 17, 1996; minimum observed, 2 mg/L, Sept. 16, 1993, July 25, 1995, July 18, 1996, and June 4, 2000.  
SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 1,030 tons, June 17, 1996; minimum daily, 0.01 ton, Aug. 25-28 and Sept. 11, 1993, July 19, 22, 1995, and many days in 1994, 1996, 1997, 1998, and 1999 water years.  
DISSOLVED AMMONIA NITROGEN CONCENTRATIONS: Maximum observed, 1.70 mg/L, Mar. 5, 1993; minimum observed, 0.01 mg/L, Aug. 1, 29, and Sept. 25, 1994.  
DISSOLVED AMMONIA NITROGEN DISCHARGE: Maximum daily, 1,410 lb, Feb. 20, 1994; minimum daily, 0.07 lb, July 31, 1995.  
TOTAL AMMONIA PLUS ORGANIC NITROGEN CONCENTRATIONS: Maximum observed, 4.6 mg/L, Mar. 5, 1993; minimum observed, 0.40 mg/L, Oct. 6 and Dec. 15, 1993, and Jan. 14, Mar. 28-29, 1995.  
TOTAL AMMONIA PLUS ORGANIC NITROGEN DISCHARGE: Maximum daily, 4,900 lb, Apr. 20, 1993; minimum daily, 1.5 lb, June 19, 1994.  
DISSOLVED NITRITE PLUS NITRATE CONCENTRATIONS: Maximum observed, 13.0 mg/L, Apr. 30, 1995; minimum observed, <0.05 mg/L, Sept. 2, 1993, and many days in 1994 and 1995 water years.  
DISSOLVED NITRITE PLUS NITRATE DISCHARGE: Maximum daily, 5,310 lb, Apr. 20, 1993; minimum daily, 0.16 lb, July 19, 1995.  
TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 1.6 mg/L, June 17, 1996; minimum observed, <0.01 mg/L, Mar. 19, 1997.  
TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 2,630 lb, Apr. 20, 1993; minimum daily, 0.11 lb, Jan. 26-28, 2003.  
DISSOLVED ORTHO-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.63 mg/L, Feb. 19, 1997; minimum observed, 0.009 mg/L, June 2, 2001.  
DISSOLVED ORTHO-PHOSPHORUS DISCHARGE: Maximum daily, 700 lb, Feb. 9, 2001; minimum daily, 0.02 lb, Sept. 11-12, 2003.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 31.0°C, Aug. 16; minimum, 0.0°C on many days.  
SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 175 mg/L, Oct. 5; minimum observed, 9 mg/L, July 9.  
SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 16 tons, July 15; minimum daily, 0.03 ton, Sept. 7-11.  
TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.40 mg/L, July 15; minimum observed, 0.03 mg/L, Jan. 29.  
TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 171 lb, July 15; minimum daily, 0.11 lb, Jan. 26-28.  
DISSOLVED ORTHO-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.180 mg/L, July 15; minimum observed, 0.01 mg/L, several days.  
DISSOLVED ORTHO-PHOSPHORUS DISCHARGE: Maximum daily, 64.1 lb, July 15; minimum daily, 0.02 lb, Sept. 11-12.

## 05431016 JACKSON CREEK AT MOUND ROAD NEAR ELKHORN, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Dis-charge, cfs (00060)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)	Sus- pended sedi- ment concen- tration mg/L (80154)
OCT							
02...	0545	--	16	50	0.02	0.28	76
02...	0805	--	18	10	--	--	62
02...	0845	--	18	50	0.03	0.23	62
02...	1445	--	15	50	0.04	0.23	61
02...	2045	--	11	50	0.05	0.20	59
03...	0800	--	7.0	10	<0.02	0.26	87
04...	1315	--	16	50	0.02	0.22	51
04...	1615	--	26	50	0.07	0.27	61
04...	1915	--	28	50	0.07	0.27	62
05...	0115	--	20	50	0.05	0.28	77
05...	0720	--	13	10	--	--	175
05...	1015	--	10	50	0.03	0.29	80
07...	0810	--	3.4	10	<0.02	0.19	72
NOV							
04...	0750	--	1.4	10	<0.02	0.10	91
DEC							
02...	0745	1.4	--	10	<0.02	E.04	43
13...	1245	1.3	--	10	E.01	0.05	56
JAN							
29...	1430	0.80	--	70	0.02	E.03	24
MAR							
18...	1115	--	4.5	70	0.04	0.23	37
APR							
07...	0815	--	3.6	10	<0.02	0.10	55
11...	0945	--	4.5	70	<0.02	0.10	66
MAY							
01...	0315	--	13	50	<0.02	0.17	50
01...	0615	--	22	50	<0.02	0.18	51
01...	1215	--	20	50	<0.02	0.16	39
01...	1815	--	16	50	<0.02	0.15	28
02...	0740	--	9.4	10	<0.02	0.14	29
05...	0245	--	19	50	<0.02	0.17	143
05...	0800	--	26	10	<0.02	0.10	27
05...	0845	--	27	50	<0.02	0.13	24
05...	1445	--	22	50	<0.02	0.10	30
05...	2045	--	18	50	<0.02	0.14	28
06...	0740	--	13	10	<0.02	0.13	56
07...	1815	--	16	50	<0.02	0.07	19
08...	0015	--	19	50	<0.02	0.09	31
08...	0745	--	16	10	<0.02	0.08	38
09...	0030	--	13	50	<0.02	0.07	21
09...	0330	--	22	50	<0.02	0.10	36
09...	0755	--	58	10	0.05	0.15	128
09...	1215	--	67	50	0.04	0.19	38
09...	1815	--	51	50	0.07	0.20	66
10...	0640	--	30	10	0.06	0.13	27
11...	0015	--	18	50	0.02	0.12	25
11...	0655	--	31	10	0.03	0.15	78
11...	1515	--	24	50	<0.02	0.16	55
12...	0015	--	34	50	E.01	0.15	54
12...	0840	--	29	10	<0.02	0.09	33
14...	0215	--	11	50	<0.02	0.06	11
14...	1445	--	16	50	<0.02	0.11	58
14...	2045	--	18	50	<0.02	0.09	31
15...	0940	--	16	10	E.02	0.07	67
16...	0850	--	12	10	<0.02	0.06	81
28...	2200	--	15	50	<0.02	0.13	60
29...	0400	--	16	50	<0.02	0.15	30
29...	0805	--	12	10	<0.02	0.16	61
31...	0045	--	13	50	<0.02	0.11	29
31...	0645	--	18	50	<0.02	0.15	46
31...	1245	--	15	50	<0.02	0.12	32
JUN							
02...	0800	--	6.6	10	<0.02	E.04	22
08...	0915	--	10	10	<0.02	0.09	33
08...	1445	--	13	50	<0.02	0.14	64
08...	2045	--	14	50	<0.02	0.18	77
09...	0245	--	13	50	<0.02	0.16	48
09...	1030	--	10	10	E.01	0.15	61
16...	0750	--	2.9	10	0.03	0.20	28
23...	0935	--	2.0	10	0.11	0.34	45
26...	0940	--	6.6	10	<0.02	0.30	32

05431016 JACKSON CREEK AT MOUND ROAD NEAR ELKHORN, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
JUL						
05...	1245	17	50	0.05	0.26	46
05...	1545	18	50	0.07	0.24	29
05...	2145	13	50	0.06	0.26	32
06...	2100	18	50	0.05	0.28	84
07...	0300	22	50	0.07	0.22	26
07...	0900	16	50	E.10	E.24	24
07...	0901	16	10	0.10	0.22	26
07...	1800	12	50	E.06	E.25	43
08...	1630	14	50	E.03	E.21	49
08...	2230	22	50	E.04	E.19	46
09...	0430	37	50	E.04	E.14	9
09...	0820	38	10	E.09	E.17	48
09...	1330	33	50	0.07	0.23	32
09...	2230	22	50	0.06	0.21	43
10...	0820	18	10	0.06	0.19	46
11...	0755	13	10	0.04	0.12	66
14...	0815	5.5	10	<0.02	0.10	49
15...	1035	199	10	0.11	0.40	124
15...	1700	136	50	0.12	0.28	20
15...	2300	89	50	0.18	0.32	22
16...	0800	50	50	0.15	0.26	11
16...	1100	43	50	--	0.24	18
17...	0500	22	50	--	0.16	36
17...	2000	16	50	--	0.12	42
18...	1100	13	50	--	0.09	18
21...	0745	10	10	<0.02	0.09	83
28...	1050	2.2	10	0.06	0.17	64
AUG						
04...	0950	2.2	10	<0.02	0.16	15
11...	0755	1.1	10	<0.18	0.25	35
18...	1020	0.83	10	E.17	0.33	19
25...	0820	0.65	10	<0.18	0.35	55
SEP						
02...	1015	0.83	10	<0.18	0.32	42
08...	1010	0.51	10	0.02	0.23	19
15...	0830	2.9	10	E.01	0.26	66
22...	0810	0.65	10	E.01	0.19	37
29...	0955	0.83	10	<0.02	0.12	29

## 05431016 JACKSON CREEK AT MOUND ROAD NEAR ELKHORN, WI—Continued

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.5	17.5	20.5	4.5	0.0	2.0	2.0	1.0	1.5	2.5	1.5	2.0
2	20.0	16.0	19.0	5.0	0.0	2.5	1.0	0.5	0.5	2.0	1.5	1.5
3	16.5	14.5	15.5	5.0	3.0	4.0	1.0	0.5	0.5	2.5	1.0	1.5
4	19.5	15.0	17.0	6.0	2.0	4.0	1.0	0.5	0.5	2.0	1.0	1.5
5	20.0	12.5	16.0	5.5	3.0	4.0	1.0	0.5	0.5	1.5	1.0	1.5
6	18.5	11.5	14.5	5.5	3.0	4.0	1.0	0.5	0.5	2.0	1.5	1.5
7	16.5	8.0	12.0	8.5	3.5	5.5	1.0	0.5	0.5	1.5	1.0	1.5
8	17.0	10.0	13.5	10.5	5.0	7.5	1.0	0.5	0.5	2.5	1.0	1.5
9	19.5	12.0	15.0	13.0	7.5	10.0	0.5	0.5	0.5	3.0	1.5	2.0
10	17.0	13.0	15.0	13.0	10.5	12.0	0.5	0.0	0.5	3.5	1.5	2.5
11	20.0	12.5	16.0	10.5	6.0	7.5	0.5	0.0	0.5	4.0	1.5	2.0
12	17.0	14.0	15.5	7.0	4.0	5.5	0.5	0.0	0.5	4.0	1.5	2.0
13	14.0	8.0	10.5	8.5	2.5	5.5	1.0	0.0	0.5	3.0	1.5	2.0
14	12.5	5.5	9.0	7.5	5.0	6.0	2.0	0.5	1.0	2.0	1.0	1.5
15	13.0	6.5	9.5	5.0	2.0	3.0	1.5	0.5	1.0	2.0	1.0	1.5
16	11.0	5.5	8.0	4.0	1.0	2.5	2.5	1.0	1.0	2.0	1.0	1.5
17	9.0	6.0	7.0	4.5	1.5	3.0	1.5	0.5	1.0	2.0	1.0	1.5
18	9.5	4.5	6.5	4.0	2.5	3.5	3.0	0.0	1.0	1.5	1.0	1.0
19	9.0	5.5	7.5	5.5	2.5	4.0	4.0	2.0	3.0	1.0	1.0	1.0
20	11.0	5.0	7.5	6.0	3.0	4.5	2.0	0.0	0.5	1.0	1.0	1.0
21	9.5	6.5	8.5	6.0	1.5	3.5	3.0	0.0	1.0	1.5	1.0	1.0
22	9.0	5.5	7.0	3.0	0.0	1.5	2.5	1.0	1.5	1.0	1.0	1.0
23	7.0	3.0	5.5	4.5	1.5	3.0	3.5	1.0	2.0	1.0	0.5	0.5
24	6.5	4.5	5.5	2.5	1.0	1.5	2.5	1.5	2.0	0.5	0.5	0.5
25	8.0	5.5	7.0	3.5	1.0	2.0	2.0	1.0	1.5	0.5	0.5	0.5
26	9.5	7.0	8.0	3.0	1.5	2.0	2.5	0.5	1.5	0.5	0.5	0.5
27	8.5	4.5	7.0	3.5	1.0	2.0	3.0	1.5	2.0	0.5	0.5	0.5
28	7.5	4.0	6.0	3.5	1.0	2.0	2.5	1.5	1.5	0.5	0.5	0.5
29	7.5	5.0	6.0	3.0	1.0	2.0	3.0	1.5	2.0	0.5	0.5	0.5
30	10.0	3.5	6.5	2.0	1.0	1.5	1.5	1.0	1.5	0.5	0.5	0.5
31	7.5	3.5	5.5	---	---	---	4.0	1.5	2.5	1.0	0.5	0.5
MONTH	23.5	3.0	10.6	13.0	0.0	4.0	4.0	0.0	1.1	4.0	0.5	1.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1.0	0.5	0.5	0.5	0.5	0.5	18.0	6.5	11.0	13.5	11.0	12.0
2	1.0	0.5	1.0	1.0	0.5	0.5	17.0	6.5	11.0	18.5	9.0	13.0
3	1.0	0.5	1.0	0.5	0.0	0.5	9.0	4.0	5.5	21.0	9.0	14.5
4	1.0	0.5	1.0	0.5	0.5	0.5	4.0	1.0	2.5	16.5	10.0	12.5
5	0.5	0.5	0.5	0.5	0.5	0.5	4.5	0.0	2.0	13.5	11.0	12.0
6	1.0	0.5	0.5	0.5	0.5	0.5	7.5	1.5	4.0	21.5	11.5	16.0
7	0.5	0.5	0.5	0.5	0.5	0.5	3.5	0.0	1.0	16.5	12.5	13.0
8	0.5	0.5	0.5	0.5	0.5	0.5	3.0	0.0	1.5	15.0	11.5	13.0
9	0.5	0.5	0.5	0.5	0.5	0.5	11.0	1.5	6.0	18.5	12.5	15.0
10	0.5	0.5	0.5	0.5	0.0	0.5	16.5	5.5	10.0	20.0	14.5	16.5
11	0.5	0.0	0.5	0.5	0.5	0.5	18.5	6.5	12.0	16.5	11.0	13.0
12	0.5	0.5	0.5	0.5	0.5	0.5	18.0	7.0	12.0	18.0	10.0	13.5
13	0.5	0.5	0.5	1.0	0.5	0.5	18.0	6.5	12.0	22.5	12.5	17.0
14	0.5	0.5	0.5	1.0	0.5	1.0	20.0	9.0	14.5	17.0	13.0	14.5
15	0.5	0.5	0.5	1.0	0.5	1.0	22.0	12.5	17.0	18.0	12.0	14.0
16	0.5	0.5	0.5	1.0	1.0	1.0	18.5	7.0	12.5	20.0	12.5	16.0
17	0.5	0.5	0.5	1.5	1.0	1.0	7.0	4.0	5.5	23.0	14.0	18.0
18	1.0	0.5	0.5	6.5	1.0	3.5	9.5	5.0	7.0	23.5	15.0	19.0
19	1.0	0.5	0.5	5.0	1.5	3.0	14.5	6.0	9.5	20.5	17.0	19.0
20	1.0	0.5	1.0	8.5	3.5	5.5	17.5	13.0	15.0	23.5	16.5	19.5
21	1.0	0.5	1.0	8.0	4.5	6.0	13.0	7.5	10.5	23.0	14.0	18.0
22	1.0	1.0	1.0	7.5	3.5	5.5	16.0	4.0	10.0	24.5	12.5	18.0
23	1.0	0.5	1.0	15.0	5.0	9.5	18.5	8.0	13.0	24.0	15.5	19.0
24	0.5	0.5	0.5	16.0	7.5	11.5	15.0	8.0	11.0	22.5	15.5	19.0
25	0.5	0.5	0.5	15.5	9.0	12.0	18.0	7.0	12.0	23.5	16.0	19.5
26	0.5	0.5	0.5	16.0	6.5	11.0	18.0	6.5	12.0	22.5	17.0	20.0
27	0.5	0.5	0.5	11.0	6.5	9.0	19.5	11.5	16.0	24.5	17.5	21.0
28	0.5	0.5	0.5	9.5	5.0	8.0	19.0	15.0	17.0	24.0	17.5	20.0
29	---	---	---	5.5	2.0	4.0	18.5	12.5	15.5	24.0	15.5	19.0
30	---	---	---	9.0	2.0	5.0	16.5	11.5	13.0	22.0	16.0	18.5
31	---	---	---	12.0	3.5	7.5	---	---	---	19.5	15.5	17.5
MONTH	1.0	0.0	0.6	16.0	0.0	3.6	22.0	0.0	10.1	24.5	9.0	16.5

## 05431016 JACKSON CREEK AT MOUND ROAD NEAR ELKHORN, WI—Continued

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	24.5	12.5	18.0	29.0	23.5	26.0	29.0	24.5	27.0	20.5	18.5	19.5
2	22.5	15.5	19.0	29.0	24.0	26.5	29.0	24.5	27.5	23.5	17.5	20.5
3	21.0	16.5	18.5	29.0	25.0	27.5	28.0	25.0	26.5	24.0	20.5	22.0
4	23.0	17.0	19.5	30.5	25.5	28.0	27.0	22.5	24.5	23.0	19.0	21.0
5	25.5	18.0	21.0	29.5	24.0	27.0	30.0	23.0	26.0	22.5	18.0	20.5
6	23.5	18.0	19.5	27.5	24.0	25.5	30.5	26.0	28.5	24.0	20.0	21.5
7	25.5	17.0	20.5	26.5	22.5	24.5	29.5	25.0	27.5	26.0	21.5	23.5
8	24.0	19.0	20.5	25.5	21.5	23.0	28.5	25.0	26.5	26.0	23.0	24.5
9	25.0	16.5	20.5	21.5	20.0	21.0	27.0	23.0	25.0	27.5	24.0	25.5
10	22.5	18.5	20.5	22.5	19.5	21.0	28.5	22.5	25.5	27.5	23.5	25.0
11	21.0	19.0	19.5	23.5	19.0	21.0	28.0	23.5	25.0	27.0	23.5	25.0
12	23.5	17.0	19.5	26.5	19.5	22.5	25.5	21.5	23.0	23.5	20.0	21.5
13	27.0	19.5	22.5	28.5	20.5	24.0	28.5	22.5	25.5	23.0	20.0	21.0
14	27.0	21.0	24.0	28.5	22.0	25.0	29.5	24.5	27.0	22.0	18.5	20.5
15	28.5	20.5	24.0	26.5	21.5	23.0	30.0	26.0	28.0	21.5	15.5	18.5
16	28.0	21.5	24.5	24.0	20.0	22.0	31.0	27.0	29.0	23.5	15.5	19.5
17	29.0	20.0	24.0	25.0	20.0	22.5	30.5	26.0	28.5	23.5	18.0	20.5
18	28.0	22.0	25.0	25.5	19.5	22.5	28.5	24.5	26.5	25.5	17.5	21.0
19	26.0	18.5	22.0	28.0	19.0	23.0	28.0	24.5	26.5	21.0	16.5	18.5
20	28.0	16.5	21.5	27.5	21.5	24.0	29.0	25.0	27.0	20.5	12.5	16.5
21	29.0	19.5	24.0	27.0	22.5	24.5	30.0	26.0	28.0	20.5	14.5	17.5
22	28.5	21.0	25.0	25.0	21.5	23.5	29.0	25.5	27.5	19.5	16.5	18.0
23	28.0	22.5	25.5	26.0	19.5	22.5	28.5	24.0	26.5	19.0	12.5	16.0
24	29.5	23.0	26.0	28.0	19.5	23.5	27.5	24.0	26.0	20.5	15.0	17.0
25	29.5	24.5	27.0	27.5	22.0	25.0	28.0	25.0	26.0	17.0	11.5	14.5
26	26.0	22.5	24.0	26.5	22.5	24.5	29.0	25.0	27.0	14.5	12.5	13.5
27	26.0	18.5	22.0	28.5	24.5	26.0	29.5	26.0	27.5	13.0	9.5	11.5
28	25.0	20.5	23.0	27.5	23.0	25.0	27.0	22.5	24.5	13.0	10.0	11.5
29	27.5	22.0	24.5	29.0	22.0	25.5	27.5	23.5	25.5	14.0	9.0	11.5
30	27.5	22.5	25.0	28.5	24.0	26.5	26.5	22.5	24.5	12.5	9.0	11.0
31	---	---	---	29.5	24.0	26.5	24.5	20.5	22.0	---	---	---
MONTH	29.5	12.5	22.3	30.5	19.0	24.3	31.0	20.5	26.3	27.5	9.0	18.9

SUSPENDED SEDIMENT LOAD, TONS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.37	0.36	e0.18	e0.22	e0.09	e0.11	0.45	1.9	0.60	0.11	0.12	0.09
2	2.4	0.34	e0.16	e0.19	e0.08	e0.10	0.47	0.68	0.39	0.09	0.09	0.09
3	1.3	0.35	e0.15	e0.18	e0.07	e0.08	0.44	0.38	0.34	0.06	0.06	0.08
4	2.4	0.34	e0.15	e0.16	e0.07	e0.08	0.49	0.30	0.29	0.07	0.09	0.07
5	3.1	0.34	e0.15	e0.15	e0.07	e0.07	0.64	2.5	0.24	0.91	0.10	0.05
6	0.94	0.37	e0.14	e0.15	e0.06	e0.07	0.61	1.4	0.22	1.2	0.08	0.04
7	0.62	0.33	e0.15	e0.15	e0.06	e0.07	0.55	0.70	0.22	1.4	0.08	0.03
8	0.50	0.31	e0.15	e0.16	e0.06	e0.07	0.59	1.2	1.5	1.4	0.08	0.03
9	0.46	0.30	e0.14	e0.17	e0.06	e0.07	0.64	8.0	1.5	3.7	0.11	0.03
10	0.44	0.29	e0.14	e0.16	e0.06	e0.07	0.74	2.1	0.93	2.3	0.12	0.03
11	0.44	0.29	e0.16	e0.13	e0.06	e0.08	0.85	4.1	0.69	2.0	0.10	0.03
12	0.42	0.28	e0.18	e0.11	e0.06	e0.12	0.85	2.5	0.47	1.4	0.10	0.04
13	0.34	0.27	e0.20	e0.10	e0.06	e0.20	0.71	0.65	0.38	0.91	0.09	0.09
14	0.31	0.26	e0.18	e0.09	e0.06	0.50	0.59	1.1	0.33	0.61	0.08	e0.32
15	0.33	0.26	e0.16	e0.08	e0.06	0.49	0.52	2.7	0.26	16	0.08	e0.57
16	0.33	0.23	e0.21	e0.07	e0.06	0.50	0.53	2.5	0.22	2.3	0.07	e0.32
17	0.33	0.22	0.31	e0.07	e0.06	0.50	0.46	1.9	0.21	2.0	0.06	0.15
18	0.35	0.20	e0.65	e0.06	e0.06	0.47	0.42	1.5	0.22	0.79	0.04	0.11
19	0.41	0.20	e1.8	e0.06	e0.06	0.40	0.43	1.2	0.33	0.71	0.04	0.08
20	0.36	0.22	e1.0	e0.06	e0.08	0.45	0.48	1.3	0.29	0.95	0.05	0.08
21	0.31	0.22	0.48	e0.06	e0.12	0.49	0.48	0.96	0.26	1.9	0.07	0.07
22	0.31	0.22	0.42	e0.06	e0.10	0.45	0.42	0.73	0.23	1.3	0.07	0.06
23	0.31	0.24	0.35	e0.06	e0.09	0.40	0.35	0.59	0.23	0.95	0.08	0.08
24	0.32	0.23	e0.29	e0.05	e0.08	0.39	0.34	0.52	0.19	0.78	0.09	0.07
25	e0.35	0.21	e0.26	e0.05	e0.07	0.40	0.31	0.44	0.17	0.61	0.10	0.06
26	e0.53	0.20	e0.23	e0.05	e0.06	0.41	0.28	0.35	e0.58	0.52	0.09	0.06
27	e0.49	e0.17	e0.20	e0.05	e0.06	0.42	0.19	0.31	e0.30	0.45	0.10	0.07
28	0.46	e0.17	e0.19	e0.05	e0.07	0.48	0.19	0.79	0.16	0.36	0.09	0.08
29	0.46	e0.17	e0.18	e0.05	---	0.57	0.18	1.3	0.16	0.28	0.09	0.06
30	0.42	0.19	e0.19	e0.06	---	0.52	0.48	0.47	0.12	0.22	0.10	0.05
31	0.38	---	0.27	e0.08	---	0.45	---	1.4	---	0.18	0.10	---
TOTAL	20.49	7.78	9.42	3.14	1.95	9.48	14.68	46.47	12.03	46.46	2.62	2.99

WATER YEAR 2003 TOTAL 177.51

e Estimated

## 05431016 JACKSON CREEK AT MOUND ROAD NEAR ELKHORN, WI—Continued

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.37	0.87	e0.33	e0.43	e0.22	e0.45	2.28	13.9	2.97	e1.70	1.44	1.36
2	16.3	0.80	e0.30	e0.39	e0.19	e0.43	2.26	6.55	1.42	1.67	1.28	1.43
3	7.75	0.79	e0.29	e0.36	e0.18	e0.36	1.97	3.54	1.18	1.18	1.15	1.36
4	18.3	0.75	e0.27	e0.32	e0.17	e0.34	2.11	2.50	0.95	1.25	1.84	1.28
5	16.4	0.74	e0.28	e0.31	e0.17	e0.34	2.58	13.7	0.76	12.6	1.93	1.03
6	5.49	0.80	e0.26	e0.31	e0.17	e0.33	2.32	7.32	0.64	12.7	1.54	0.89
7	3.29	0.71	e0.26	e0.30	e0.17	e0.33	1.99	4.18	0.62	19.6	1.44	0.72
8	2.55	0.66	e0.27	e0.32	e0.17	e0.33	2.00	5.65	6.70	13.0	1.40	0.62
9	2.27	0.64	e0.25	e0.35	e0.17	e0.33	2.02	42.0	8.23	31.3	1.70	0.53
10	2.10	0.62	e0.25	e0.33	e0.18	e0.34	2.18	18.7	5.66	16.4	1.82	0.49
11	2.05	0.60	e0.28	e0.27	e0.18	e0.40	2.38	21.4	5.17	7.72	1.47	0.39
12	1.89	0.58	e0.32	e0.23	e0.18	e0.62	2.41	13.7	4.31	5.25	1.57	0.36
13	1.50	0.56	e0.35	e0.21	e0.18	e2.50	2.07	5.16	3.99	3.59	1.61	0.78
14	1.30	0.54	e0.32	e0.18	e0.18	e6.10	1.78	5.69	3.79	2.54	1.67	e2.10
15	1.35	0.53	e0.29	e0.17	e0.19	e6.00	1.61	6.10	3.41	171	1.82	e3.70
16	1.32	0.48	e0.39	e0.16	e0.19	e6.10	1.67	3.87	3.09	58.5	1.81	e2.10
17	1.27	0.44	0.57	e0.14	e0.19	e6.00	1.50	3.03	3.01	14.6	1.78	1.12
18	1.30	0.41	e4.20	e0.14	e0.19	5.25	1.39	2.47	3.15	5.82	1.41	0.82
19	1.48	0.41	e11.6	e0.13	e0.21	4.27	1.46	2.16	4.90	3.07	1.30	0.69
20	1.27	0.44	e6.80	e0.13	e0.29	4.51	1.71	e5.90	4.30	1.92	1.31	0.67
21	1.06	0.43	0.89	e0.13	e0.45	4.67	1.74	e4.60	3.93	3.59	1.52	0.62
22	1.03	0.44	0.79	e0.13	e0.37	4.07	1.54	1.55	3.41	2.36	1.42	0.66
23	1.00	0.46	0.66	e0.12	e0.32	3.40	1.33	1.34	3.45	1.94	1.34	0.78
24	0.97	0.44	e0.55	e0.12	e0.29	3.15	1.33	1.25	3.11	1.92	1.34	0.72
25	e2.20	0.40	e0.49	e0.12	e0.27	3.03	1.26	1.11	2.91	1.84	1.24	0.57
26	e3.40	0.38	e0.44	e0.11	e0.26	2.91	1.14	0.94	e5.10	1.91	1.22	0.50
27	e3.20	e0.33	e0.39	e0.11	e0.25	2.86	0.82	0.89	e2.60	1.99	1.29	0.61
28	1.26	e0.32	e0.36	e0.11	e0.29	3.05	0.82	2.95	e2.20	1.92	1.19	0.64
29	1.22	e0.33	e0.35	e0.13	---	3.47	0.82	8.04	e2.00	1.80	1.26	0.51
30	1.07	0.36	e0.38	e0.16	---	2.99	2.51	3.65	e1.80	1.72	1.49	0.44
31	0.94	---	0.53	e0.19	---	2.42	---	8.87	---	1.72	1.47	---
TOTAL	109.90	16.26	33.71	6.61	6.27	81.35	53.00	222.71	98.76	408.12	46.07	28.49

WATER YEAR 2003 TOTAL 1,111.25

ORTHOPHOSPHATE, WATER, FILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.33	0.16	e0.16	e0.14	e0.14	e0.13	0.44	1.78	0.88	0.17	0.28	0.76
2	2.45	0.15	e0.15	e0.13	e0.12	e0.12	0.44	0.96	0.69	0.15	0.21	0.76
3	0.81	0.16	e0.13	e0.13	e0.11	e0.10	0.39	0.60	0.63	0.11	0.16	0.55
4	3.96	0.15	e0.11	e0.11	e0.10	e0.09	0.42	0.48	0.53	0.13	0.24	0.38
5	2.23	0.15	e0.10	e0.11	e0.10	e0.09	0.51	2.27	0.45	2.94	0.32	0.23
6	0.58	0.17	e0.09	e0.11	e0.10	e0.08	0.46	1.29	0.40	2.49	0.33	0.14
7	0.35	0.16	e0.09	e0.11	e0.09	e0.08	0.40	1.27	0.40	6.26	0.39	0.08
8	0.28	0.15	e0.08	e0.13	e0.09	e0.08	0.40	1.59	1.07	2.10	0.49	0.05
9	0.25	0.15	e0.07	e0.15	e0.09	e0.08	0.41	12.7	0.72	10.7	0.78	0.04
10	0.24	0.15	e0.06	e0.14	e0.09	e0.08	0.45	6.69	0.43	5.15	1.05	0.03
11	0.24	0.15	e0.07	e0.11	e0.09	e0.09	0.50	3.07	0.44	2.49	1.04	0.02
12	0.22	0.15	e0.07	e0.10	e0.08	e0.13	0.50	2.41	0.41	1.45	1.07	0.02
13	0.18	0.15	e0.07	e0.10	e0.08	e0.22	0.43	1.52	0.43	0.84	1.05	0.04
14	0.16	0.15	e0.06	e0.09	e0.08	e0.93	0.37	1.50	0.46	0.52	1.04	0.09
15	0.17	0.15	e0.06	e0.08	e0.08	e0.92	0.33	1.72	0.46	64.1	1.07	0.15
16	0.17	0.14	e0.08	e0.07	e0.08	e0.94	0.35	1.28	0.47	34.3	1.02	0.09
17	0.17	0.13	0.13	e0.07	e0.08	e0.92	0.31	1.03	0.51	7.80	0.96	0.05
18	0.18	0.13	e0.61	e0.07	e0.07	0.95	0.29	0.85	0.60	3.29	0.73	0.04
19	0.21	0.13	e1.70	e0.07	e0.08	0.78	0.30	0.76	1.04	1.57	0.67	0.04
20	0.18	0.15	e0.99	e0.07	e0.11	0.83	0.36	e0.89	1.01	0.87	0.67	0.03
21	0.15	0.15	0.22	e0.07	e0.16	0.86	0.36	e0.69	1.03	0.92	0.78	0.03
22	0.15	0.16	0.20	e0.07	e0.13	0.75	0.32	0.57	1.00	0.68	0.73	0.04
23	0.15	0.17	0.17	e0.07	e0.11	0.63	0.28	0.50	1.02	0.59	0.69	0.05
24	0.15	0.17	e0.15	e0.07	e0.10	0.59	0.28	0.48	0.57	0.61	0.69	0.05
25	e0.32	0.16	e0.13	e0.07	e0.09	0.57	0.26	0.43	0.32	0.60	0.64	0.05
26	e0.50	0.16	e0.12	e0.07	e0.08	0.55	0.24	0.37	0.56	0.64	0.63	0.05
27	e0.46	e0.14	e0.11	e0.07	e0.08	0.54	0.17	0.36	0.27	0.68	0.68	0.08
28	0.22	e0.14	e0.10	e0.08	e0.09	0.58	0.17	0.69	0.22	0.66	0.63	0.09
29	0.21	e0.15	e0.11	e0.09	---	0.66	0.17	1.12	0.23	0.54	0.68	0.08
30	0.19	0.17	e0.12	e0.10	---	0.57	0.41	0.67	0.18	0.45	0.81	0.05
31	0.17	---	e0.17	e0.13	---	0.47	---	1.52	---	0.39	0.81	---
TOTAL	16.03	4.55	6.48	2.98	2.70	14.41	10.72	52.06	17.43	154.19	21.34	4.16

WATER YEAR 2003 TOTAL 307.05

e Estimated



05431016 JACKSON CREEK AT MOUND ROAD NEAR ELKHORN, WI--Continued

## PRECIPITATION QUANTITY

PERIOD OF RECORD.--June 1999 to current year (non-frozen precipitation).

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

REMARKS.--Rain gage covered Dec. 13, 2002 to Mar. 18, 2003.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 2.65 in., June 13, 1999.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.93 in., July 15.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.58	0.00	0.00	---	---	---	0.00	0.33	0.00	0.00	0.00	0.00
2	0.51	0.00	0.00	---	---	---	0.00	0.00	0.00	0.00	0.01	0.00
3	0.00	0.00	0.00	---	---	---	0.06	0.00	0.07	0.00	0.58	0.00
4	0.85	0.00	0.00	---	---	---	0.19	0.72	0.00	0.35	0.00	0.00
5	0.00	0.10	0.00	---	---	---	0.00	0.05	0.00	0.96	0.00	0.00
6	0.01	0.00	0.00	---	---	---	0.03	0.00	0.05	0.76	0.02	0.00
7	0.01	0.00	0.00	---	---	---	0.00	0.46	0.00	0.14	0.01	0.00
8	0.00	0.00	0.00	---	---	---	0.01	0.19	0.72	1.19	0.01	0.00
9	0.01	0.00	0.00	---	---	---	0.00	0.59	0.00	0.08	0.00	0.00
10	0.00	0.00	0.00	---	---	---	0.00	0.12	0.00	0.09	0.00	0.00
11	0.00	0.05	0.00	---	---	---	0.00	0.57	0.00	0.12	0.00	0.00
12	0.01	0.00	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.64
13	0.00	0.00	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.23
14	0.00	0.00	---	---	---	---	0.00	0.44	0.00	0.00	0.00	0.54
15	0.00	0.00	---	---	---	---	0.00	0.00	0.00	1.93	0.00	0.00
16	0.00	0.00	---	---	---	---	0.00	0.00	0.00	0.00	0.02	0.00
17	0.18	0.00	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00
18	0.13	0.13	---	---	---	0.00	0.00	0.00	0.25	0.00	0.00	0.00
19	0.00	0.00	---	---	---	0.14	0.23	0.14	0.00	0.00	0.00	0.02
20	0.00	0.00	---	---	---	0.03	0.07	0.12	0.00	0.00	0.00	0.00
21	0.00	0.02	---	---	---	0.01	0.03	0.00	0.00	0.41	0.00	0.06
22	0.00	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.27
23	0.00	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.01
24	0.07	0.00	---	---	---	0.01	0.00	0.00	0.00	0.00	0.00	0.00
25	0.37	0.02	---	---	---	0.01	0.00	0.00	0.77	0.00	0.00	0.00
26	0.01	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.03	0.25
27	0.00	0.00	---	---	---	0.05	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	---	---	---	0.36	0.00	0.79	0.13	0.02	0.00	0.01
29	0.00	0.00	---	---	---	0.00	0.00	0.00	0.01	0.00	0.05	0.01
30	0.00	0.00	---	---	---	0.00	0.80	0.56	0.00	0.00	0.00	0.01
31	0.00	---	---	---	---	0.04	---	0.02	---	0.00	0.02	---
TOTAL	2.74	0.32	---	---	---	---	1.42	5.10	2.00	6.05	0.75	2.05

05431017 DELAVAN LAKE INLET AT STATE HIGHWAY 50 AT LAKE LAWN, WI

LOCATION.--Lat 42°37'16", long 88°34'57", in SE ¼ NE ¼ sec.22, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, on downstream headwall of State Highway 50 bridge, and 1.0 mi east of Lake Lawn.

DRAINAGE AREA.--21.8 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1984 and 1985 water years (unpublished) to current year. Published as "at U.S. Highway 50" prior to October 1988.

GAGE.--Nonrecording gage. Datum of gage is 922.94 ft above NGVD of 1929 (Wisconsin Department of Transportation bench mark). Previously published datum of 914.48 ft in 1989-91 annual data reports was in error.

REMARKS.--Daily mean discharges were estimated based on discharges upstream at Jackson Creek near Elkhorn (05431014) and Jackson Creek Tributary near Elkhorn (054310157) for Oct. 1, 1983 to Jan. 31, 1993. Also during this period, an acoustical velocity meter was used to measure discharges equal to or greater than 20 ft<sup>3</sup>/s from Oct. 1, 1985 to May 7, 1987. Daily mean discharges were estimated based on discharges upstream at Jackson Creek at Mound Road near Elkhorn (05431016) from Feb. 1, 1993 to present. Records poor (see page 11).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	1.9	1.9	2.6	1.7	1.6	4.3	21	11	2.1	2.1	1.0
2	17	1.8	1.8	2.3	1.4	1.4	4.5	12	8.3	1.8	1.9	1.1
3	8.3	1.8	1.7	2.2	1.3	1.2	4.0	7.2	7.5	1.3	1.7	1.1
4	18	1.8	1.6	1.9	1.2	1.1	4.5	5.8	6.4	1.6	2.7	1.1
5	14	1.8	1.6	1.9	1.2	1.0	5.7	27	5.5	13	2.7	0.92
6	5.8	2.1	1.4	1.9	1.1	0.99	5.5	16	4.9	13	2.1	0.84
7	4.2	1.9	1.4	1.9	1.1	0.96	4.8	16	4.9	21	1.8	0.71
8	3.4	1.8	1.4	2.1	1.1	0.94	4.8	20	13	16	1.6	0.65
9	3.0	1.8	1.3	2.3	1.1	0.94	4.9	61	13	42	1.8	0.58
10	2.9	1.8	1.3	2.2	1.1	0.91	5.5	34	8.7	22	1.8	0.56
11	2.9	1.8	1.4	1.8	1.0	1.0	6.0	35	7.7	16	1.4	0.47
12	2.7	1.8	1.6	1.6	1.0	1.6	6.1	34	6.1	11	1.4	0.44
13	2.2	1.8	1.7	1.4	0.99	2.6	5.2	18	5.5	8.2	1.4	0.90
14	1.9	1.8	1.6	1.3	0.97	6.4	4.4	18	4.9	6.1	1.4	2.1
15	2.1	1.8	1.4	1.2	0.95	6.2	4.0	21	4.3	134	1.4	3.6
16	2.1	1.7	1.9	1.1	0.94	6.4	4.2	16	3.6	58	1.4	2.1
17	2.1	1.6	2.9	1.0	0.91	6.2	3.8	12	3.4	25	1.3	1.3
18	2.1	1.6	4.2	1.0	0.88	5.8	3.5	10	3.2	16	1.0	1.0
19	2.5	1.6	11	1.0	0.96	4.8	3.6	9.1	4.7	11	0.94	0.87
20	2.2	1.8	6.8	1.0	1.3	5.3	4.3	11	3.8	8.4	0.94	0.84
21	1.8	1.8	4.7	0.99	1.9	5.7	4.4	8.4	3.2	11	1.1	0.79
22	1.8	1.9	4.3	0.97	1.6	5.2	3.9	7.0	2.6	8.1	1.0	0.84
23	1.8	2.1	3.5	0.96	1.3	4.5	3.4	6.1	2.5	6.0	0.94	1.1
24	1.8	2.1	3.0	0.95	1.2	4.4	3.4	5.8	2.3	5.1	0.92	1.0
25	2.2	1.9	2.7	0.94	1.0	4.4	3.1	5.3	2.2	4.2	0.86	0.88
26	3.4	1.8	2.5	0.91	0.96	4.4	2.9	4.5	6.4	3.6	0.84	0.83
27	3.1	1.7	2.2	0.91	0.91	4.4	2.1	4.4	3.2	3.2	0.91	1.1
28	2.6	1.7	2.1	0.94	1.0	4.9	2.1	8.4	2.7	2.7	0.84	1.2
29	2.6	1.8	2.1	1.0	---	5.8	2.1	13	2.7	2.6	0.91	1.0
30	2.3	2.1	2.2	1.2	---	5.2	4.9	8.1	2.2	2.5	1.1	0.88
31	2.1	---	3.1	1.6	---	4.4	---	18	---	2.5	1.1	---
TOTAL	129.1	54.7	82.3	45.07	32.07	110.64	125.9	493.1	160.4	479.0	43.30	31.80
MEAN	4.16	1.82	2.65	1.45	1.15	3.57	4.20	15.9	5.35	15.5	1.40	1.06
MAX	18	2.1	11	2.6	1.9	6.4	6.1	61	13	134	2.7	3.6
MIN	1.8	1.6	1.3	0.91	0.88	0.91	2.1	4.4	2.2	1.3	0.84	0.44
CFSM	0.19	0.08	0.12	0.07	0.05	0.16	0.19	0.73	0.25	0.71	0.06	0.05
IN.	0.22	0.09	0.14	0.08	0.05	0.19	0.21	0.84	0.27	0.82	0.07	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

	8.08	13.3	10.1	8.20	19.6	23.0	24.2	16.0	21.3	8.10	4.72	7.71
MEAN	8.08	13.3	10.1	8.20	19.6	23.0	24.2	16.0	21.3	8.10	4.72	7.71
MAX	29.2	54.5	30.3	28.0	69.9	68.3	100	37.0	86.0	29.3	30.5	37.4
(WY)	(2002)	(1986)	(1992)	(1999)	(2001)	(1986)	(1993)	(2000)	(1996)	(1993)	(1995)	(1986)
MIN	0.67	1.14	1.12	1.11	1.15	3.57	3.28	1.44	0.76	0.61	0.50	0.61
(WY)	(1989)	(1990)	(1990)	(1991)	(2003)	(2003)	(1989)	(1989)	(1988)	(1988)	(1988)	(1988)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1984 - 2003

ANNUAL TOTAL	3,854.62	1,787.38	
ANNUAL MEAN	10.6	4.90	13.6
HIGHEST ANNUAL MEAN			30.3
LOWEST ANNUAL MEAN			4.90
HIGHEST DAILY MEAN	220	Apr 9	751
LOWEST DAILY MEAN	0.64	Aug 12	0.22
ANNUAL SEVEN-DAY MINIMUM	0.69	Jul 29	0.25
ANNUAL RUNOFF (CFSM)	0.48		0.63
ANNUAL RUNOFF (INCHES)	6.58		8.49
10 PERCENT EXCEEDS	19		30
50 PERCENT EXCEEDS	5.2		5.1
90 PERCENT EXCEEDS	1.2		0.91

## 05431017 DELAVAN LAKE INLET AT STATE HIGHWAY 50 AT LAKE LAWN, WI—Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: 1984 and 1985 water years (unpublished), October 1989 to September 1995.  
 TOTAL-PHOSPHORUS DISCHARGE: 1984 and 1985 water years (unpublished) to current year.  
 DISSOLVED ORTHO-PHOSPHORUS DISCHARGE: April 1994 to current year.

REMARKS.--Records poor. Daily mean discharges are estimated based on discharges from upstream stations 05431014 and 054310157 from Oct. 1, 1992 to Jan. 31, 1993, and from station 05431016 from Feb. 1, 1993 to present.

COOPERATION.--Observer furnished by Delavan Lake Sanitary District.

## EXTREMES FOR PERIOD OF RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 345 mg/L, Apr. 16, 1984; minimum observed, 0 mg/L, Sept. 23, 1991, July 17, Sept. 26, 1992, and Nov. 16, 1994.  
 SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 468 tons, Apr. 20, 1993; minimum daily, 0.00 ton, Sept. 26, 1990, many days during 1992 to 1994 water years, and July 14, 15, 18, 19, 1995.  
 TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 3.8 mg/L, May 27, 1985; minimum observed, 0.01 mg/L, Mar. 7, 1990, Dec. 15, 1994, Apr. 17, 1995, Oct. 6, 1995, Feb. 5, 1997, and Mar. 19, 1998.  
 TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,910 lb, Apr. 20, 1993; minimum daily, 0.10 lb, Dec. 28, 1989.  
 DISSOLVED ORTHO-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.851 mg/L, Aug. 3, 2000; minimum observed, <0.01 mg/L, Apr. 14, 1994, many days during 1995 water year, Nov. 22, 1995, several days in 1997-1999 water years, and many days in 2000 water year.  
 DISSOLVED ORTHO-PHOSPHORUS DISCHARGE: Maximum daily, 503 lb, June 26, 1998; minimum daily, 0.02 lb, Sept. 26, 1999.  
 DISSOLVED CHLORIDE CONCENTRATIONS: Maximum observed, 130 mg/L, Aug. 8, 1995; minimum observed, 18 mg/L, June 1, 1995.

## EXTREMES FOR CURRENT YEAR.--

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.54 mg/L, Oct 3 and July 7; minimum observed, 0.07 mg/L, Nov. 18 and Dec. 13.  
 TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 114 lb, July 9; minimum daily, 0.44 lb, Sept. 12.  
 DISSOLVED ORTHO-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.43 mg/L, Oct. 4, 5; minimum observed, <0.02 mg/L, Apr. 11, May 5-12, and July 16, 21.  
 DISSOLVED ORTHO-PHOSPHORUS DISCHARGE: Maximum daily, 91 lb, July 9; minimum daily, 0.10 lb, Mar. 10.

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.61	0.84	0.72	1.48	1.00	0.88	2.79	31.6	17.6	4.02	3.21	1.30
2	45.9	0.79	0.68	1.31	0.83	0.77	2.83	16.1	12.5	3.29	3.09	1.42
3	24.1	0.78	0.64	1.26	0.76	0.66	2.45	6.24	10.5	2.27	2.94	1.39
4	50.9	0.77	0.60	1.09	0.70	0.60	2.68	3.69	8.43	2.65	4.91	1.36
5	37.5	0.77	0.60	1.09	0.70	0.55	3.29	26.7	6.78	33.3	4.91	1.11
6	13.6	0.89	0.53	1.09	0.64	0.54	3.09	15.2	5.66	30.0	3.79	0.99
7	7.34	0.79	0.53	1.09	0.64	0.52	2.62	16.1	5.93	60.8	3.22	0.81
8	4.05	0.75	0.53	1.21	0.64	0.51	2.54	21.2	27.4	41.0	2.84	0.72
9	2.41	0.74	0.49	1.33	0.64	0.51	2.52	62.1	30.6	114	3.16	0.63
10	1.65	0.73	0.49	1.27	0.64	0.49	2.75	30.4	20.2	44.2	3.13	0.59
11	1.55	0.73	0.53	1.04	0.58	0.54	2.92	48.5	17.2	21.9	2.42	0.49
12	1.43	0.72	0.60	0.93	0.58	0.99	2.92	30.4	13.2	12.1	2.39	0.44
13	1.16	0.71	0.64	0.81	0.57	2.13	2.46	11.0	11.5	8.15	2.37	0.70
14	0.99	0.71	0.60	0.76	0.56	6.64	2.05	9.61	9.88	6.00	2.35	1.70
15	1.08	0.70	0.53	0.70	0.54	6.52	1.84	10.3	8.38	107	2.33	2.80
16	1.07	0.65	0.80	0.64	0.54	6.55	1.90	7.86	6.73	45.4	2.31	1.70
17	1.06	0.61	1.52	0.58	0.52	6.18	1.70	5.95	5.92	19.2	2.13	1.00
18	1.05	0.61	3.70	0.58	0.50	5.63	1.54	5.00	5.27	9.06	1.62	0.87
19	1.24	0.60	9.70	0.59	0.54	4.53	1.56	4.58	10.0	5.78	1.48	0.71
20	1.08	0.68	6.00	0.59	0.73	4.85	1.84	5.58	8.10	5.55	1.44	0.63
21	0.88	0.68	4.10	0.58	1.07	5.07	1.86	4.31	6.08	8.85	1.65	0.55
22	0.87	0.72	3.80	0.57	0.90	4.50	1.63	3.62	5.21	6.98	1.46	0.55
23	0.86	0.79	1.97	0.57	0.73	3.79	1.40	3.18	5.24	5.46	1.34	0.72
24	0.86	0.79	1.69	0.56	0.67	3.59	1.38	3.05	4.85	4.89	1.27	0.67
25	1.03	0.72	1.52	0.56	0.56	3.49	1.24	2.81	4.72	4.25	1.16	0.60
26	1.58	0.68	1.41	0.54	0.53	3.39	1.14	2.41	13.7	3.85	1.13	0.57
27	1.43	0.64	1.25	0.54	0.51	3.30	0.82	2.60	6.80	3.61	1.22	0.78
28	1.19	0.64	1.19	0.56	0.55	3.56	0.80	9.08	5.80	3.22	1.12	0.91
29	1.18	0.68	1.19	0.59	---	4.10	0.88	23.7	5.68	3.29	1.20	0.82
30	1.03	0.79	1.25	0.71	---	3.57	4.14	14.7	4.42	3.37	1.45	0.77
31	0.94	---	1.76	0.95	---	2.94	---	30.6	---	3.59	1.44	---
TOTAL	220.62	21.70	51.56	26.17	18.37	91.89	63.58	468.17	304.28	627.03	70.48	28.30

WATER YEAR 2003 TOTAL 1,992.15

## 05431017 DELAVAN LAKE INLET AT STATE HIGHWAY 50 AT LAKE LAWN, WI—Continued

ORTHOPHOSPHATE, WATER, FILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.77	0.45	0.25	0.45	0.35	0.21	0.46	6.77	7.07	2.64	1.79	0.83
2	36.6	0.41	0.23	0.41	0.28	0.18	0.49	2.57	4.55	2.17	1.81	0.94
3	18.7	0.40	0.22	0.39	0.26	0.15	0.43	1.20	3.77	1.50	1.81	0.90
4	41.5	0.40	0.20	0.34	0.24	0.13	0.49	0.77	3.00	1.76	3.16	0.86
5	31.3	0.39	0.20	0.34	0.23	0.12	0.61	2.95	2.40	24.8	3.16	0.68
6	10.9	0.44	0.17	0.34	0.21	0.12	0.59	1.73	1.99	24.0	2.43	0.59
7	5.25	0.39	0.17	0.35	0.20	0.11	0.52	1.73	2.21	47.5	2.05	0.48
8	2.85	0.36	0.16	0.39	0.20	0.11	0.52	2.16	14.0	30.6	1.80	0.41
9	1.69	0.35	0.15	0.43	0.20	0.11	0.53	6.56	15.6	91.0	1.99	0.35
10	1.15	0.35	0.15	0.41	0.19	0.10	0.59	3.69	10.6	32.4	1.96	0.32
11	1.07	0.34	0.16	0.34	0.17	0.11	0.65	3.78	8.47	15.0	1.51	0.26
12	0.98	0.33	0.18	0.30	0.17	0.17	0.66	3.67	6.03	8.14	1.48	0.23
13	0.78	0.32	0.18	0.27	0.17	0.28	0.56	1.95	4.87	4.16	1.46	0.44
14	0.66	0.32	0.17	0.25	0.16	0.69	0.48	1.94	3.89	2.06	1.44	0.98
15	0.71	0.31	0.15	0.23	0.15	0.67	0.43	2.27	3.07	34.5	1.42	1.60
16	0.70	0.29	0.25	0.22	0.15	0.69	0.45	1.73	2.31	7.30	1.40	0.89
17	0.68	0.26	0.33	0.20	0.14	0.67	0.41	1.30	2.00	4.29	1.28	0.52
18	0.67	0.26	0.48	0.20	0.14	0.63	0.38	1.08	1.78	1.42	0.97	0.38
19	0.78	0.25	1.30	0.20	0.15	0.52	0.39	0.98	5.30	0.61	0.85	0.31
20	0.67	0.28	0.78	0.20	0.19	0.57	0.46	1.19	4.30	0.64	0.79	0.27
21	0.54	0.28	0.54	0.20	0.28	0.62	0.48	0.91	2.55	1.21	0.86	0.23
22	0.52	0.29	0.49	0.20	0.23	0.56	0.42	0.76	2.36	1.13	0.73	0.23
23	0.51	0.31	0.57	0.20	0.19	0.49	0.37	0.66	2.54	1.05	0.64	0.32
24	0.50	0.31	0.49	0.20	0.17	0.48	0.37	0.63	2.42	1.12	0.58	0.31
25	0.60	0.27	0.45	0.20	0.14	0.48	0.33	0.57	2.49	1.16	0.52	0.29
26	0.91	0.26	0.42	0.19	0.13	0.48	0.31	0.49	7.30	1.24	0.52	0.29
27	0.81	0.24	0.37	0.19	0.12	0.48	0.23	0.56	4.81	1.39	0.59	0.42
28	0.67	0.23	0.36	0.20	0.13	0.53	0.23	3.25	3.87	1.44	0.58	0.50
29	0.65	0.24	0.36	0.22	---	0.63	0.25	12.5	3.70	1.58	0.65	0.47
30	0.56	0.28	0.38	0.26	---	0.56	1.05	7.29	2.89	1.70	0.83	0.45
31	0.50	---	0.54	0.33	---	0.48	---	13.6	---	1.90	0.87	---
TOTAL	171.18	9.61	10.85	8.65	5.34	12.13	14.14	91.24	142.14	351.41	41.93	15.75

WATER YEAR 2003 TOTAL 874.37

05431017 DELAVAN LAKE INLET AT STATE HIGHWAY 50 AT LAKE LAWN, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Dis-charge, cfs (00060)	Sam-pling method, code (82398)	Ortho-phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)
OCT 2002					
02...	0845	17	10	0.41	0.50
03...	0830	8.3	10	0.41	0.54
04...	0955	18	10	0.43	0.53
05...	0730	14	10	0.43	0.50
05...	1350	14	10	0.41	0.50
06...	1145	5.8	10	0.36	0.44
07...	0855	4.2	10	0.24	0.34
NOV					
18...	1130	1.6	10	0.03	0.07
DEC					
13...	1330	1.7	10	E.02	0.07
JAN 2003					
29...	1500	1.0	70	0.04	0.11
MAR					
18...	1100	5.8	70	E.02	0.18
APR					
11...	1215	6.0	10	<0.02	0.09
MAY					
01...	0845	21	10	0.07	0.30
02...	0810	12	10	0.04	0.27
05...	0845	27	10	<0.02	0.20
06...	0815	16	10	<0.02	0.17
08...	0835	20	10	<0.02	0.20
09...	0915	61	10	<0.02	0.19
09...	1400	61	10	<0.02	0.20
10...	0650	34	10	<0.02	0.15
10...	1320	34	10	<0.02	0.15
11...	0930	35	10	<0.02	0.28
11...	1320	35	10	<0.02	0.30
12...	0840	34	10	<0.02	0.17
13...	1000	18	10	0.02	0.11
15...	1055	21	10	E.02	0.09
29...	0925	13	10	0.10	0.36
JUN					
02...	0910	8.3	10	--	0.28
08...	0950	13	10	0.21	0.41
08...	1510	13	10	0.23	0.42
09...	1100	13	10	0.22	0.44
10...	0900	8.7	10	0.23	0.43
16...	0850	3.6	10	0.12	0.35
23...	1045	2.5	10	0.19	0.39
26...	1035	6.4	10	0.29	0.45
JUL					
07...	0945	21	10	0.42	0.54
09...	0915	42	10	E.43	E.53
10...	0920	22	10	0.30	0.40
10...	1500	22	10	0.24	0.34
11...	0915	16	10	0.17	0.25
11...	1440	16	10	0.17	0.25
12...	0545	11	10	0.15	0.21
13...	0900	8.2	10	0.10	0.18
14...	0920	6.1	10	0.06	0.19
15...	1135	134	10	0.06	0.15
15...	1400	134	10	0.04	0.14
16...	1000	58	10	0.02	0.14
16...	1445	58	10	<0.02	0.15
17...	0935	25	10	0.04	0.14
17...	1455	25	10	0.03	0.15
18...	1055	16	10	E.02	0.10
18...	1455	16	10	E.01	0.10
19...	0925	11	10	E.01	0.09
19...	1600	11	10	E.01	0.10
21...	0900	11	10	<0.02	0.15
28...	1140	2.7	10	0.10	0.22
AUG					
04...	1100	2.7	10	0.22	0.34
18...	1105	1.0	10	E.18	0.30
25...	1100	0.86	10	E.11	0.25
SEP					
02...	1145	1.1	10	E.16	0.24
18...	1550	1.0	30	0.07	0.16
22...	1130	0.84	10	0.05	0.12
27...	1050	1.1	10	0.07	0.13

ROCK RIVER BASIN

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

LOCATION.--Lat 42°35'56", long 88°36'50", in SE 1/4 SW 1/4 sec.28, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

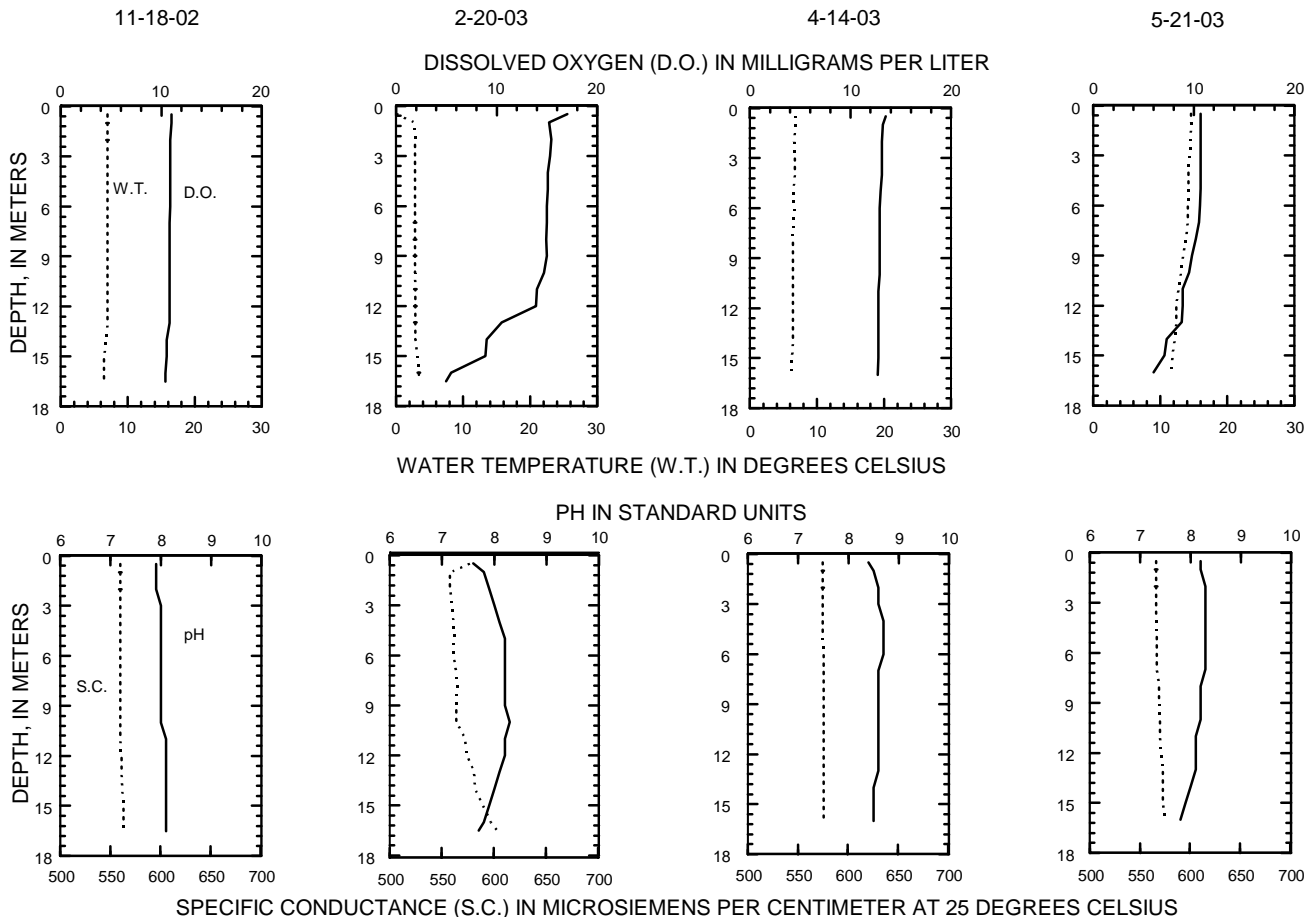
DRAINAGE AREA.--41.4 mi<sup>2</sup>, of which 2.3 mi<sup>2</sup> is non-contributing. Area of Delavan Lake, 2,072 acres.

PERIOD OF RECORD.--October 1983 to current year.

REMARKS.--Lake ice-covered during February measurements. Water-quality analyses done by the U.S. Geological Survey National Water Quality Laboratory. Samples for determination of chlorophyll-a concentration are collected from the top 1.5 ft of the lake.

WATER-QUALITY DATA, NOVEMBER 18 TO MAY 21, 2003  
(Milligrams per liter unless otherwise indicated)

	Nov-18		Feb-20		Apr-14		May-21	
Lake stage (ft)	4.82		4.97		5.0		5.02	
Secchi-depth (m)	3.5		3.2		2.9		7	
Chlorophyll a, phytoplankton (µg/L)	--		9.02		5.8		3.84	
Depth of sample (m)	0.5	16.5	0.5	16	0.5	16	0.5	16
Water temperature (°C)	7	6.5	0	3.4	6.7	6.2	14.6	11.6
Specific conductance (µS/cm)	560	564	577	597	575	576	566	576
pH	7.9	8.1	7.6	7.8	8.4	8.5	8.2	7.8
Dissolved oxygen (mg/L)	11	10.4	17	5.5	13.5	12.7	10.7	6
Phosphorus, total (as P)	0.106	0.105	0.076	0.192	0.057	0.063	0.054	0.113
Phosphorus, ortho, dissolved (as P)	0.071	0.07	0.034	0.139	0.022	0.023	0.025	0.078
Nitrogen, NO <sub>2</sub> + NO <sub>3</sub> , diss. (as N)	0.095	--	0.022	--	<.022	<.022	E.017	--
Nitrogen, ammonia, dissolved (as N)	0.073	--	<.015	--	<.015	<.015	E.008	--
Nitrogen, amm. + org., total (as N)	0.56	--	0.54	--	0.64	0.64	0.65	--
Nitrogen, total (as N)	0.65	--	0.56	--	0.65	0.65	--	--
Color (Pt-Co. scale)	--	--	--	--	12	12	--	--
Turbidity (NTU)	--	--	--	--	2.1	3.2	--	--
Hardness, as CaCO <sub>3</sub>	--	--	--	--	230	230	--	--
Calcium, dissolved (Ca)	--	--	--	--	38.4	38.5	--	--
Magnesium, dissolved (Mg)	--	--	--	--	33.3	33.3	--	--
Sodium, dissolved (Na)	--	--	--	--	26.2	26	--	--
Potassium, dissolved (K)	--	--	--	--	2.48	2.44	--	--
Alkalinity, as CaCO <sub>3</sub>	--	--	--	--	188	188	--	--
Sulfate, dissolved (SO <sub>4</sub> )	--	--	--	--	24.5	24.4	--	--
Chloride, dissolved (Cl)	--	--	--	--	57.9	57.3	--	--
Silica, dissolved (SiO <sub>2</sub> )	--	--	--	--	<.2	<.2	--	--
Solids, dissolved, at 180°C	--	--	--	--	323	322	--	--
Iron, dissolved (Fe) (µg/L)	--	--	--	--	<10	<10	--	--
Manganese, dissolved, (Mn) (µg/L)	--	--	--	--	E.9	<2.0	--	--



423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI--Continued

WATER-QUALITY DATA, JUNE 19 TO JULY 16, 2003

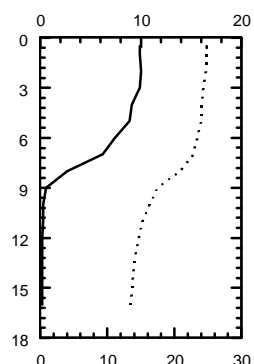
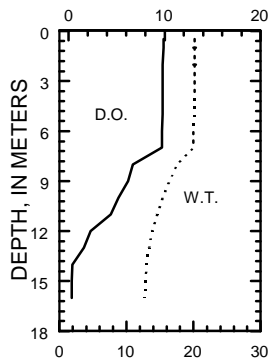
(Milligrams per liter unless otherwise indicated)

	Jun-19				Jul-16			
Lake stage (ft)	4.98				5.23			
Secchi-depth (m)	3.7				2.9			
Chlorophyll a, phytoplankton (µg/L)	5.9				21.8			
Depth of sample (m)	0.5	7	12	16	0.5	5	11	16
Water temperature (°C)	20.2	20	13.8	12.7	24.8	24	15.2	13.5
Specific conductance (µS/cm)	567	568	584	599	546	550	591	604
pH	8.7	8.6	8.4	8.3	8.8	8.7	8.8	8.9
Dissolved oxygen (mg/L)	9.9	9.7	2.3	0.3	9.9	8.9	0.3	0.2
Phosphorus, total (as P)	0.056	0.052	0.2	0.34	0.037	0.036	0.21	0.44
Phosphorus, ortho, dissolved (as P)	E.004	0.007	0.163	0.297	E.004	<.007	0.177	0.379
Nitrogen, NO <sub>2</sub> + NO <sub>3</sub> , diss. (as N)	<.022	--	--	--	<.022	--	--	--
Nitrogen, ammonia, dissolved (as N)	<.015	--	--	--	E.008	--	--	--
Nitrogen, amm. + org., total (as N)	0.62	--	--	--	0.87	--	--	--

6-19-03

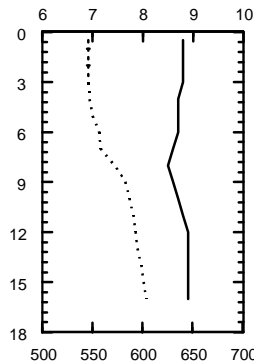
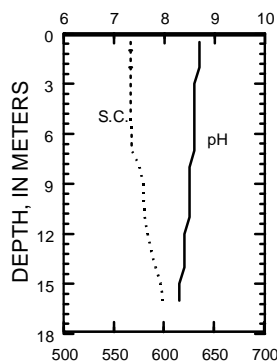
7-16-03

DISSOLVED OXYGEN (D.O.) IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.) IN DEGREES CELSIUS

PH IN STANDARD UNITS



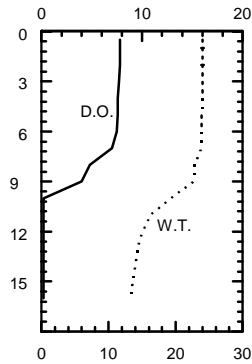
SPECIFIC CONDUCTANCE (S.C.) IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS

WATER-QUALITY DATA, AUGUST 12, 2003  
(Milligrams per liter unless otherwise indicated)

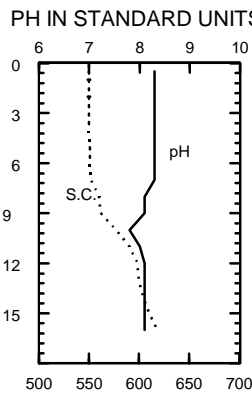
	<u>Aug-12</u>							
Lake stage (ft)	4.83							
Secchi-depth (m)	2.9							
Chlorophyll a, phytoplankton (µg/L)	8.87							
Depth of sample (m)	0.5	7	9	11	13	14	15	16
Water temperature (°C)	24	23.8	22.7	16.3	14.3	14	13.6	13.4
Specific conductance (µS/cm)	550	552	562	590	600	604	610	618
pH	8.3	8.3	8.1	8	8.1	8.1	8.1	8.1
Dissolved oxygen (mg/L)	7.8	7	4	0.2	0.2	0.2	0.2	0.2
Phosphorus, total (as P)	0.044	0.046	0.093	0.32	0.43	0.47	0.51	0.59
Phosphorus, ortho, dissolved (as P)	<.007	0.009	--	--	0.336	--	--	0.482
Nitrogen, NO <sub>2</sub> + NO <sub>3</sub> , diss. (as N)	<.022	--	--	--	--	--	--	--
Nitrogen, ammonia, dissolved (as N)	<.015	--	--	--	--	--	--	--
Nitrogen, amm. + org., total (as N)	0.69	--	--	--	--	--	--	--

8-12-03

DISSOLVED OXYGEN (D.O.) IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.) IN DEGREES CELSIUS



SPECIFIC CONDUCTANCE (S.C.) IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS



423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI--Continued

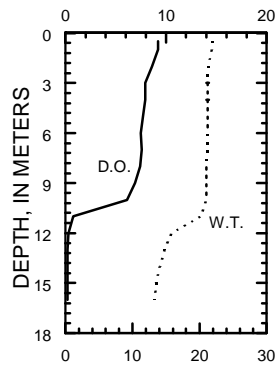
WATER-QUALITY DATA, SEPTEMBER 18, 2003

(Milligrams per liter unless otherwise indicated)

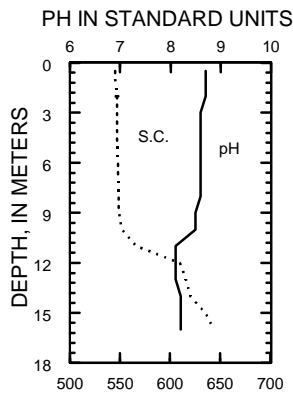
		Sep-18		
Lake stage (ft)		4.44		
Secchi-depth (m)		1.2		
Chlorophyll a, phytoplankton (µg/L)		26		
Depth of sample (m)	0.5	11	14	16
Water temperature (°C)	21.9	20.2	14.1	13.3
Specific conductance (µS/cm)	545	566	620	643
pH	8.7	8.1	8.2	8.2
Dissolved oxygen (mg/L)	9.2	0.8	0.2	0.2
Phosphorus, total (as P)	0.073	0.106	0.6	0.75
Phosphorus, ortho, dissolved (as P)	<.007	0.062	0.533	0.65
Nitrogen, NO <sub>2</sub> + NO <sub>3</sub> , diss. (as N)	<.022	--	--	--
Nitrogen, ammonia, dissolved (as N)	<.015	--	--	--
Nitrogen, amm. + org., total (as N)	0.9	--	--	--

9-18-03

DISSOLVED OXYGEN (D.O.) IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.) IN DEGREES CELSIUS



SPECIFIC CONDUCTANCE (S.C.) IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS

## ROCK RIVER BASIN

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI--Continued

ADDITIONAL WATER-QUALITY DATA, OCTOBER 16, 2002 TO AUGUST 29, 2003  
(Milligrams per liter unless otherwise indicated)

	<u>Oct. 16</u>	<u>May 13</u>	<u>June 5</u>	<u>June 13</u>	<u>June 20</u>
Lake stage (ft)	4.85	5.12	5.04	5.02	4.95
Secchi-depth (meters)	2.3	6.7	4.6	5.2	3.7
Depth of sample (meters)	0.5	0.5	0.5	0.5	0.5
Water temperature (°C)	9.5	13.0	16.5	19.0	20.0
Phosphorus, total (as P)	0.127	0.055	0.054	0.055	0.053
	<u>June 27</u>	<u>July 2</u>	<u>July 14</u>	<u>July 23</u>	<u>July 30</u>
Lake stage (ft)	4.95	4.91	5.02	4.99	4.91
Secchi-depth (meters)	3.0	3.8	3.0	3.2	3.8
Depth of sample (meters)	0.5	0.5	0.5	0.5	0.5
Water temperature (°C)	21.5	24.5	24.5	24.0	24.0
Phosphorus, total (as P)	0.052	0.045	0.051	0.038	0.046
	<u>Aug. 6</u>	<u>Aug. 22</u>	<u>Aug. 29</u>		
Lake stage (ft)	4.89	4.72	4.61		
Secchi-depth (meters)	3.5	1.7	1.4		
Depth of sample (meters)	0.5	0.5	0.5		
Water temperature (°C)	25.0	26.0	25.0		
Phosphorus, total (as P)	0.040	0.048	0.052		

\* Measurements and samples collected by the Delavan Lake Sanitary District.

## 423659088354401 DELAVAN LAKE, AT NORTH END, NEAR LAKE LAWN, WI

LOCATION.--Lat 42°36'59", long 88°35'44", in NW 1/4 SW 1/4, sec.22, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

DRAINAGE AREA.--41.4 mi<sup>2</sup>, of which 2.3 mi<sup>2</sup> is non-contributing.

PERIOD OF RECORD.--October 1983 to current year.

## WATER-QUALITY DATA, MAY 21 TO AUGUST 12, 2003

	<u>May 21</u>	<u>June 19</u>	<u>July 16</u>	<u>Aug. 12</u>
Secchi-depth (meters)	6.7	3.7	2.8	3.4

## 423526088380101 DELAVAN LAKE, AT SW END, NEAR DELAVAN LAKE, WI

LOCATION.--Lat 42°35'26", long 88°38'01", in SE 1/4 NW 1/4, sec.32, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

DRAINAGE AREA.--41.4 mi<sup>2</sup>, of which 2.3 mi<sup>2</sup> is non-contributing.

PERIOD OF RECORD.--October 1983 to current year.

## WATER-QUALITY DATA, MAY 21 TO AUGUST 12, 2003

	<u>May 21</u>	<u>June 19</u>	<u>July 16</u>	<u>Aug. 12</u>
Secchi-depth (meters)	6.2	3.0	3.4	2.1

## 423706088363400 DELAVAN LAKE NEAR DELAVAN, WI

LOCATION.--Lat 42°36'27", long 88°36'19", in SW ¼ NE ¼ sec.28, T.2N., R.16 E., Walworth County, Hydrologic Unit 07090001, at Delavan Lake Sanitary District Lift Station No. 2 at Delavan Lake Yacht Club, 1.0 mi southeast of outlet, and 2.7 mi southeast of Delavan.

DRAINAGE AREA.--41.4 mi<sup>2</sup>, of which 2.3 mi<sup>2</sup> is non-contributing. Area of Delavan Lake, 2,072 acres.

PERIOD OF RECORD.--October 1983 to current year. October 1983 to September 1985 data published in Water Resources Investigation series report "Water Quality and Hydrology of Delavan Lake in Southeastern Wisconsin" by Stephen J. Field and Marvin D. Duerk.

GAGE.--Water-stage recorder. Datum of gage is 922.92 ft above NGVD of 1929. Prior to Sept. 5, 1989, staff gage at bridge on North Shore Drive at same datum.

REMARKS.--Lake was ice covered from Dec. 4-19 and Jan. 14 to Mar. 28. Lake levels controlled by Delavan Lake Sanitary District.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 6.19 ft, Feb. 21, 1994; minimum daily, -4.44 ft Nov. 6, 1989 (lake drawn down for lake rehabilitation program).

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.26 ft, July 15, 16; minimum, 4.26 ft, Sept. 30.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.77	4.84	4.82	e4.97	4.97	4.96	5.05	5.11	5.09	4.92	4.89	4.56
2	4.86	4.82	4.82	e4.97	4.97	4.96	5.06	5.09	5.08	4.91	4.88	4.55
3	4.88	4.82	4.83	4.97	e4.98	4.95	5.06	5.06	e5.07	4.89	4.88	4.53
4	4.92	4.82	4.83	4.97	e5.00	4.96	5.07	5.04	5.06	4.90	4.90	4.51
5	4.96	4.82	4.83	4.98	4.99	5.00	5.07	5.10	5.04	4.95	4.89	4.50
6	4.95	4.82	4.83	4.99	4.99	5.00	5.06	5.09	5.02	4.99	4.89	4.48
7	4.92	4.82	4.83	4.99	4.99	5.00	5.05	5.11	5.02	5.04	4.88	4.47
8	4.91	4.82	4.83	4.99	4.99	5.00	5.05	5.12	5.05	5.08	4.87	4.46
9	4.90	4.82	4.83	5.00	4.99	5.01	5.04	5.17	5.06	5.13	4.86	4.44
10	4.90	4.83	4.83	5.00	e4.99	5.01	5.04	5.17	5.04	5.08	4.85	4.43
11	4.90	4.84	4.83	4.99	e4.99	5.00	5.03	5.18	5.03	5.04	4.84	4.42
12	4.90	4.83	4.84	4.99	4.99	4.99	5.02	5.17	5.02	5.03	4.83	4.42
13	4.89	4.83	4.84	4.99	4.98	4.99	5.01	5.12	5.02	5.03	4.82	4.46
14	4.87	4.83	4.84	4.99	4.98	4.99	5.00	5.09	5.02	5.02	4.81	4.49
15	4.86	4.83	4.84	4.98	4.98	5.00	5.00	5.07	5.01	5.21	4.81	4.50
16	4.85	4.82	4.84	4.98	4.97	5.01	5.01	5.02	5.00	5.23	4.81	4.48
17	4.84	4.82	4.84	4.98	4.97	5.02	5.00	5.01	4.99	5.14	4.79	4.46
18	4.86	4.82	4.89	4.98	4.98	5.02	5.00	5.01	4.99	5.05	4.78	4.44
19	4.85	4.82	4.94	4.98	4.97	5.02	5.01	5.01	4.98	5.01	4.76	4.42
20	4.85	4.82	4.95	4.98	4.97	5.02	5.04	5.04	4.95	5.00	4.74	4.40
21	4.84	4.83	4.96	4.98	4.97	5.02	5.05	5.02	4.94	5.01	4.74	4.39
22	4.84	4.83	4.96	4.97	4.97	5.01	5.05	5.01	4.93	5.00	4.72	4.40
23	4.83	4.82	4.95	4.97	4.96	5.00	5.04	5.00	4.92	4.99	4.70	4.39
24	4.82	4.83	4.95	4.97	4.97	4.98	5.03	5.00	4.91	4.98	4.68	4.37
25	4.85	4.83	4.95	4.97	4.97	4.98	5.03	4.99	4.92	4.96	4.66	4.35
26	4.86	4.83	4.95	4.97	4.97	4.99	5.01	4.99	4.97	4.95	4.66	4.34
27	4.86	4.83	4.95	4.96	4.96	5.00	5.00	4.98	4.95	4.94	4.65	4.33
28	4.86	4.83	4.95	4.96	4.96	5.03	4.99	5.01	4.94	4.93	4.62	4.31
29	4.85	4.83	4.95	4.97	---	5.05	4.99	5.05	4.94	4.92	4.61	4.30
30	4.85	4.82	e4.96	4.97	---	5.05	5.02	5.06	4.93	4.91	4.60	4.28
31	4.84	---	e4.98	4.97	---	5.05	---	5.10	---	4.90	4.58	---
MEAN	4.87	4.83	4.89	4.98	4.98	5.00	5.03	5.06	5.00	5.00	4.77	4.43
MAX	4.96	4.84	4.98	5.00	5.00	5.05	5.07	5.18	5.09	5.23	4.90	4.56
MIN	4.77	4.82	4.82	4.96	4.96	4.95	4.99	4.98	4.91	4.89	4.58	4.28

e Estimated due to ice effect or missing record

05431022 DELAVAN LAKE OUTLET AT BORG ROAD NEAR DELAVAN, WI

LOCATION.--Lat 42°36'53", long 88°37'29", in SW ¼ SE ¼ sec.20, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, on right bank 50 ft upstream from bridge on Borg Road, 1.4 mi southeast of Delavan, and 0.2 mi downstream from Delavan Lake dam outlet.

DRAINAGE AREA.--42.1 mi<sup>2</sup>, of which 2.3 mi<sup>2</sup> is non-contributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 914.50 ft above NGVD of 1929 (Public Service Commission bench mark).

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	2.5	2.1	2.6	4.3	2.1	7.9	21	15	7.6	0.97	0.67
2	2.0	2.5	2.2	2.5	4.1	2.1	9.4	31	11	4.5	0.67	1.0
3	1.7	2.6	2.2	2.3	3.0	2.1	12	30	11	3.3	0.57	1.2
4	1.9	2.6	2.2	2.3	2.6	2.2	15	30	16	2.7	0.44	1.1
5	12	2.5	2.4	2.2	2.6	2.1	18	32	17	1.9	0.46	1.5
6	14	2.1	2.3	2.0	2.7	2.1	20	27	11	2.6	0.44	1.4
7	7.2	2.2	2.3	2.6	3.0	3.0	18	24	8.0	7.4	0.27	1.4
8	2.7	2.2	2.1	2.9	2.9	3.4	16	56	12	9.4	1.4	0.93
9	2.6	2.3	2.3	2.9	2.9	3.4	16	73	20	55	2.1	0.91
10	2.7	2.0	2.3	2.6	2.9	3.4	16	74	19	62	2.1	1.3
11	2.6	2.3	3.2	2.2	2.9	3.4	16	70	7.5	28	1.1	1.2
12	2.3	2.0	3.4	2.1	2.9	3.4	17	72	3.1	1.8	0.51	1.7
13	2.1	1.8	3.1	2.1	2.9	3.5	17	73	2.2	2.3	0.47	0.92
14	2.3	2.3	2.4	2.6	2.8	3.7	6.2	77	2.3	3.0	0.22	0.81
15	2.3	2.3	2.0	2.6	2.6	3.6	0.70	80	1.4	71	0.05	0.98
16	2.5	2.4	2.3	2.4	2.6	9.5	0.68	51	1.2	132	0.78	1.0
17	2.4	2.4	2.3	2.4	2.6	20	0.51	22	0.38	124	1.3	1.1
18	3.3	2.1	2.3	2.4	2.6	24	0.50	17	e0.02	60	1.1	1.1
19	3.6	3.0	2.3	2.2	2.7	24	0.32	17	e3.4	19	1.9	0.76
20	3.4	3.4	2.3	2.2	2.7	24	0.38	17	3.3	14	2.7	0.81
21	2.9	2.2	2.2	2.3	2.4	24	2.5	16	1.7	8.9	2.4	0.80
22	2.5	2.5	2.3	2.3	2.2	24	3.2	16	1.6	8.2	2.2	1.2
23	2.3	2.9	2.3	2.3	2.1	23	3.5	10	0.69	3.8	2.2	1.2
24	2.3	2.9	2.3	1.9	2.1	23	3.4	5.8	0.51	0.71	2.3	1.3
25	2.6	2.5	2.3	2.0	2.1	7.6	4.6	4.7	0.30	1.4	2.2	1.3
26	2.6	2.1	2.2	2.1	2.1	1.5	5.5	3.2	0.15	1.8	2.1	1.4
27	2.4	2.1	2.2	2.1	2.7	2.7	5.9	1.6	0.16	1.9	1.6	1.7
28	2.3	2.2	2.3	3.4	2.4	3.2	6.2	1.00	0.23	1.6	1.2	1.6
29	2.3	2.3	2.4	5.1	---	2.8	2.7	3.8	0.38	1.3	0.57	1.7
30	2.5	2.1	2.6	5.9	---	1.1	1.8	1.3	5.8	1.3	2.4	1.8
31	2.6	---	2.6	5.1	---	5.2	---	1.2	---	1.4	1.8	---
TOTAL	102.7	71.3	73.7	82.6	76.4	263.1	246.89	958.60	176.32	643.81	40.52	35.79
MEAN	3.31	2.38	2.38	2.66	2.73	8.49	8.23	30.9	5.88	20.8	1.31	1.19
MAX	14	3.4	3.4	5.9	4.3	24	20	80	20	132	2.7	1.8
MIN	1.7	1.8	2.0	1.9	2.1	1.1	0.32	1.0	0.02	0.71	0.05	0.67
AC-FT	204	141	146	164	152	522	490	1,900	350	1,280	80	71
CFSM	0.08	0.06	0.06	0.07	0.07	0.21	0.21	0.78	0.15	0.52	0.03	0.03
IN.	0.10	0.07	0.07	0.08	0.07	0.25	0.23	0.90	0.16	0.60	0.04	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	21.1	18.5	18.1	17.8	30.7	28.9	36.5	21.8	29.3	11.3	5.03	15.2								
MAX	127	93.1	51.1	44.7	97.8	71.2	145	56.0	105	53.7	32.6	110								
(WY)	(1990)	(1986)	(1986)	(1993)	(1994)	(1986)	(1993)	(1996)	(1996)	(1993)	(1995)	(1989)								
MIN	0.000	0.003	0.000	0.31	0.71	0.41	0.000	0.006	0.014	0.025	0.011	0.020								
(WY)	(1991)	(1991)	(1990)	(1990)	(1990)	(1990)	(1990)	(1990)	(1990)	(1990)	(1991)	(1990)								

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1984 - 2003
ANNUAL TOTAL	5,246.88	2,771.73	
ANNUAL MEAN	14.4	7.59	21.1
HIGHEST ANNUAL MEAN			42.6
LOWEST ANNUAL MEAN			7.59
HIGHEST DAILY MEAN	198	Jun 5	132
LOWEST DAILY MEAN	0.07	May 27	0.02
ANNUAL SEVEN-DAY MINIMUM	0.24	Jul 15	0.35
MAXIMUM PEAK FLOW			151
MAXIMUM PEAK STAGE			7.18
ANNUAL RUNOFF (AC-FT)	10,410	5,500	15,270
ANNUAL RUNOFF (CFSM)	0.36	0.19	0.53
ANNUAL RUNOFF (INCHES)	4.90	2.59	7.20
10 PERCENT EXCEEDS	32	18	58
50 PERCENT EXCEEDS	3.1	2.4	7.4
90 PERCENT EXCEEDS	0.65	0.95	0.13

(a) Also occurred many days during 1990 and 1991 water years (lake drawn down for lake rehabilitation program)

(b) Also occurred in 1991 water year

(c) Estimated

## 05431022 DELAVAN LAKE OUTLET AT BORG ROAD NEAR DELAVAN, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1983 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Water years 1984-85, 1990-91.

TOTAL-PHOSPHORUS DISCHARGE: October 1983 to current year.

INSTRUMENTATION.--Automatic pumping sampler from October to December 1983. Manual samples collected from January 1984 to present.

REMARKS.--Records good.

COOPERATION.--Observer furnished by Delavan Lake Sanitary District.

EXTREMES FOR PERIOD OF RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 238 mg/L, Feb. 22, 1985; minimum observed, 1 mg/L, on many days.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 29 tons, Feb. 25, 1985; minimum daily, 0.00 ton, on many days during 1990 and 1991 water years.

DISSOLVED CHLORIDE CONCENTRATIONS: Maximum observed, 71 mg/L, June 5, 1995; minimum observed, 40 mg/L, July 5, 1995.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 6.00 mg/L, Jan. 5, 1990; minimum observed, <0.01 mg/L, Mar. 9-10, 1990, several days during 1992, 1994, and 1995 water years, and Oct. 2, 1995.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 585 lb, Feb. 22, 1994; minimum daily, 0.00 lb, Aug. 9, 13, 1987, and many days during 1990, 1991, and 1994 water years, Dec. 4, 1994, July 10-11, 1995, Oct. 1-5, 1995, and Sept. 27, 1996.

EXTREMES FOR CURRENT YEAR.--

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.20 mg/L, June 26; minimum observed, 0.02 mg/L, July 18, 21.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 28.4 lb, July 16; minimum daily, 0.02 lb, June 18 and Aug. 15.

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.69	0.69	0.90	0.64	0.95	0.52	1.49	4.59	12.0	5.94	0.29	0.18
2	0.74	0.69	0.96	0.62	0.91	0.52	1.73	6.64	9.03	3.32	0.21	0.28
3	0.66	0.70	0.91	0.57	0.66	0.53	2.20	6.58	8.80	2.27	0.18	0.35
4	0.70	0.70	0.87	0.57	0.57	0.54	2.62	6.56	13.9	1.75	0.14	0.30
5	5.26	0.70	0.91	0.53	0.58	0.53	3.13	7.01	15.0	1.16	0.15	0.43
6	5.10	0.59	0.85	0.49	0.61	0.55	3.31	5.86	10.1	1.47	0.14	0.42
7	2.01	0.64	0.79	0.61	0.67	0.77	2.95	5.97	7.16	3.92	0.09	0.44
8	0.72	0.65	0.70	0.68	0.67	0.87	2.62	16.7	11.1	4.80	0.45	0.30
9	0.71	0.68	0.73	0.68	0.65	0.88	2.51	25.2	19.4	24.9	0.69	0.28
10	0.73	0.59	0.71	0.62	0.66	0.87	2.54	21.1	18.2	23.6	0.68	0.37
11	0.70	0.71	0.94	0.51	0.66	0.90	2.64	22.5	7.38	9.11	0.36	0.33
12	0.63	0.63	0.96	0.50	0.66	0.89	2.79	23.2	3.07	0.57	0.17	0.44
13	0.56	0.57	0.85	0.49	0.66	0.92	2.88	23.5	2.15	0.73	0.15	0.22
14	0.61	0.73	0.65	0.59	0.65	0.98	1.05	24.9	2.27	0.96	0.07	0.18
15	0.63	0.74	0.55	0.60	0.61	0.96	0.12	26.2	1.41	21.2	0.02	0.21
16	0.68	0.81	0.62	0.56	0.61	2.56	0.12	17.2	1.25	28.4	0.25	0.21
17	0.64	0.82	0.60	0.55	0.61	5.31	0.09	7.94	0.39	19.0	0.42	0.22
18	0.89	0.73	0.59	0.54	0.61	6.40	0.09	6.30	e0.02	7.11	0.35	0.20
19	0.98	1.05	0.61	0.50	0.63	6.33	0.06	6.65	e3.53	2.86	0.61	0.14
20	0.93	1.20	0.59	0.50	0.64	6.05	0.07	6.96	3.49	1.83	0.86	0.14
21	0.77	0.80	0.57	0.51	0.59	5.90	0.47	7.03	1.80	1.00	0.74	0.13
22	0.66	0.92	0.59	0.52	0.52	5.73	0.61	7.43	1.73	1.03	0.69	0.18
23	0.63	1.07	0.59	0.50	0.52	5.49	0.67	4.88	0.73	0.53	0.66	0.18
24	0.63	1.08	0.58	0.42	0.52	5.28	0.67	2.97	0.55	0.11	0.69	0.19
25	0.69	0.97	0.58	0.44	0.51	1.72	0.92	2.53	0.32	0.27	0.64	0.18
26	0.70	0.83	0.55	0.45	0.51	0.33	1.10	1.84	0.16	0.38	0.62	0.18
27	0.66	0.83	0.56	0.46	0.66	0.58	1.20	0.98	0.16	0.46	0.46	0.21
28	0.63	0.91	0.58	0.74	0.59	0.67	1.29	0.63	0.22	0.43	0.35	0.19
29	0.63	0.96	0.60	1.10	---	0.57	0.57	2.54	0.34	0.37	0.16	0.20
30	0.69	0.90	0.64	1.29	---	0.23	0.39	0.88	4.79	0.37	0.66	0.19
31	0.70	---	0.64	1.11	---	1.01	---	0.86	---	0.41	0.51	---
TOTAL	31.96	23.89	21.77	18.89	17.69	65.39	42.90	304.13	160.45	170.26	12.46	7.47

WATER YEAR 2003 TOTAL 877.26

e Estimated

05431022 DELAVAN LAKE OUTLET AT BORG ROAD NEAR DELAVAN, WI—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Phosphorus, water, unfltrd mg/L (00665)
OCT 2002				
02...	0830	1.9	10	0.07
05...	1335	25	10	0.09
07...	0845	13	10	0.05
NOV				
04...	0810	2.6	10	0.05
DEC				
02...	0825	2.2	10	0.08
13...	1500	3.1	10	0.05
JAN 2003				
29...	1610	5.6	10	E.04
MAR				
18...	0955	24	10	0.05
APR				
07...	0900	18	10	E.03
11...	0905	16	10	E.03
MAY				
01...	0825	1.8	10	E.04
02...	0800	31	10	E.04
06...	0805	31	10	E.04
08...	0810	31	10	0.05
09...	0855	73	10	0.07
10...	0905	74	10	0.05
11...	0910	69	10	0.06
15...	1100	81	10	0.06
JUN				
02...	0845	26	10	0.15
08...	0925	7.0	10	0.17
09...	1045	24	10	0.18
26...	1010	0.17	10	0.20
JUL				
07...	0920	3.1	10	0.10
09...	0845	11	10	E.09
10...	0850	80	10	0.07
11...	0855	50	10	0.06
12...	0705	1.5	10	0.06
15...	1340	121	10	0.06
16...	0915	135	10	0.04
17...	0855	121	10	E.03
18...	0955	114	10	E.02
19...	0915	23	10	E.03
21...	0845	12	10	E.02
28...	1120	1.7	10	0.05
AUG				
04...	1015	0.42	10	0.06
18...	1050	1.5	10	0.06
SEP				
02...	1135	0.51	10	0.05
08...	1135	1.0	10	0.06
15...	0945	0.62	10	0.04

ROCK RIVER BASIN

05431032 TURTLE CREEK AT DELAVAN, WI

LOCATION.--Lat 42°38'13", long 88°39'27", in NW ¼ NW ¼ sec.18, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, on left bank 0.1 mi downstream from bridge on County Highway P, 0.7 mi northwest of Post Office at Delavan.

DRAINAGE AREA.--83.3 mi<sup>2</sup>, of which 2.33 mi<sup>2</sup> is noncontributing.

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

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 873.00 ft above NGVD of 1929 (levels by U.S. Geological Survey).

REMARKS.--Records good (see page 11). Some seasonal regulation caused by dams used to maintain levels of Comus and Delavan Lakes and Delavan Millpond. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	19	17	17	19	16	28	48	28	14	11	8.5
2	63	19	18	17	19	16	29	62	35	14	11	7.9
3	33	20	17	16	19	16	29	59	24	12	17	7.8
4	32	20	17	16	18	16	33	58	31	15	15	8.1
5	33	20	17	17	16	17	34	71	31	23	14	8.1
6	39	20	16	17	18	17	37	63	29	21	13	7.8
7	34	19	16	17	17	17	36	66	23	22	12	7.9
8	25	19	16	17	17	18	32	84	28	41	12	7.2
9	23	19	16	18	17	17	31	132	33	57	13	6.8
10	23	20	16	17	17	17	31	122	36	80	13	6.6
11	21	20	17	16	16	18	32	135	27	71	13	6.6
12	21	20	17	16	16	19	32	122	19	34	12	11
13	20	19	17	16	16	19	32	114	18	21	11	11
14	19	19	17	16	16	22	27	112	17	17	11	23
15	21	20	17	16	16	24	19	107	16	125	11	14
16	19	19	17	16	15	32	22	94	14	139	11	13
17	20	18	17	16	16	52	20	59	14	146	11	11
18	21	18	25	16	15	58	20	41	12	120	11	11
19	21	19	26	16	16	54	21	32	12	64	11	11
20	21	20	24	16	16	44	22	33	14	33	11	10
21	20	21	22	15	17	41	24	32	13	23	12	10
22	20	19	20	15	17	41	26	31	11	18	12	12
23	20	20	18	15	17	41	24	28	11	18	11	11
24	20	20	18	15	17	41	24	22	10	16	11	11
25	25	20	17	15	16	32	25	21	17	13	9.9	10
26	23	18	17	15	16	21	24	20	15	12	9.1	11
27	22	18	17	15	16	23	23	16	12	13	9.3	11
28	22	18	17	16	16	26	23	20	12	13	8.6	11
29	21	18	17	17	---	26	22	19	12	12	9.4	11
30	20	19	17	18	---	24	26	21	11	12	8.3	10
31	20	---	17	19	---	25	---	24	---	12	8.2	---
TOTAL	768	578	557	504	467	850	808	1,868	585	1,231	352.8	306.3
MEAN	24.8	19.3	18.0	16.3	16.7	27.4	26.9	60.3	19.5	39.7	11.4	10.2
MAX	63	21	26	19	19	58	37	135	36	146	17	23
MIN	19	18	16	15	15	16	19	16	10	12	8.2	6.6
CFSM	0.30	0.23	0.22	0.20	0.20	0.33	0.32	0.72	0.23	0.48	0.14	0.12
IN.	0.34	0.26	0.25	0.23	0.21	0.38	0.36	0.83	0.26	0.55	0.16	0.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

MEAN	35.9	32.8	32.7	40.0	74.0	59.9	74.3	60.8	91.3	33.1	26.4	32.9
MAX	74.1	56.3	48.2	72.4	122	103	106	91.8	171	62.6	68.3	72.7
(WY)	(2002)	(2002)	(2002)	(1999)	(2001)	(2001)	(1999)	(2000)	(1996)	(2000)	(1998)	(2001)
MIN	16.2	17.2	18.0	16.3	16.7	27.4	26.9	41.8	19.5	16.5	11.4	10.2
(WY)	(1998)	(1998)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2003)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1996 - 2003

ANNUAL TOTAL	14,727.1	8,875.1	
ANNUAL MEAN	40.3	24.3	48.6
HIGHEST ANNUAL MEAN			61.2
LOWEST ANNUAL MEAN			24.3
HIGHEST DAILY MEAN	282	Jun 6	146
LOWEST DAILY MEAN	9.1	Jul 25	6.6
ANNUAL SEVEN-DAY MINIMUM	12	Jul 24	7.3
MAXIMUM PEAK FLOW			239
MAXIMUM PEAK STAGE			2.91
INSTANTANEOUS LOW FLOW			6.5
ANNUAL RUNOFF (CFSM)	0.48	0.29	0.58
ANNUAL RUNOFF (INCHES)	6.58	3.96	7.92
10 PERCENT EXCEEDS	70	40	106
50 PERCENT EXCEEDS	25	18	32
90 PERCENT EXCEEDS	16	11	16





05432500 PECATONICA RIVER AT DARLINGTON, WI

LOCATION.--Lat 42°40'40", long 90°07'07", in NE 1/4 sec.3, T.2 N., R.3 E., Lafayette County, Hydrologic Unit 07090003, on right bank in Darlington, 0.3 mi downstream from Vinegar Branch, and 3.6 mi upstream from Otter Creek.

DRAINAGE AREA.--273 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1939 to current year.

REVISED RECORDS.--WDR WI-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 802.42 ft above NGVD of 1929. Prior to Dec. 19, 1939, nonrecording gage at same site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	133	84	77	e80	e86	101	689	124	90	71	61
2	190	131	e120	e100	e82	e86	102	375	118	87	74	61
3	208	131	e110	e100	e81	e84	101	217	118	86	74	60
4	355	131	e110	e100	e81	e81	102	181	119	89	80	58
5	544	133	e110	111	e81	e82	104	191	114	113	74	57
6	250	134	e100	106	e81	e82	99	184	112	116	72	57
7	200	132	e100	98	e81	e83	100	171	122	113	69	57
8	181	132	e100	111	e81	e82	101	190	128	125	68	56
9	172	133	e100	107	e81	e80	99	244	129	184	66	55
10	164	134	108	80	e81	e79	106	245	117	132	65	54
11	159	133	113	102	e81	e79	106	326	114	116	64	54
12	154	131	115	e100	e81	e100	104	386	112	108	64	55
13	150	127	119	e97	e81	e230	100	242	109	99	63	81
14	144	127	118	e90	e81	e280	97	258	106	93	63	223
15	144	125	118	e87	e81	e230	96	344	100	91	62	192
16	144	123	111	e84	e81	211	97	257	96	91	62	101
17	142	122	118	e82	e81	176	102	221	93	87	61	79
18	147	122	133	e80	e84	144	98	201	92	85	59	73
19	148	129	158	e78	e88	129	99	190	92	81	59	69
20	141	129	131	e78	e100	131	118	180	88	80	58	68
21	138	127	113	e77	e140	135	115	167	86	82	61	67
22	136	126	105	e77	e220	121	103	157	86	82	61	70
23	132	123	79	e77	e170	115	94	160	85	78	58	73
24	133	122	e100	e76	e100	112	91	158	87	76	57	70
25	148	119	e100	e76	e98	111	90	147	95	75	57	67
26	162	104	e100	e76	e85	106	87	140	126	74	58	65
27	148	98	109	e77	e80	107	85	134	107	74	58	67
28	144	117	114	e77	e85	117	84	131	101	76	55	68
29	145	142	109	e77	---	120	84	128	123	74	78	66
30	140	118	117	e78	---	108	109	126	100	72	83	64
31	136	---	105	e78	---	100	---	138	---	72	66	---
TOTAL	5,454	3,788	3,427	2,714	2,627	3,787	2,974	6,878	3,199	2,901	2,020	2,248
MEAN	176	126	111	87.5	93.8	122	99.1	222	107	93.6	65.2	74.9
MAX	544	142	158	111	220	280	118	689	129	184	83	223
MIN	132	98	79	76	80	79	84	126	85	72	55	54
CFSM	0.64	0.46	0.40	0.32	0.34	0.45	0.36	0.81	0.39	0.34	0.24	0.27
IN.	0.74	0.52	0.47	0.37	0.36	0.52	0.41	0.94	0.44	0.40	0.28	0.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950
MEAN	132	141	123	155	215	364	245	204	247	203	152	142
MAX	302	674	338	546	738	951	731	780	810	1,796	610	487
(WY)	(1985)	(1962)	(1983)	(1960)	(1953)	(1959)	(1959)	(1960)	(2000)	(1993)	(1993)	(1942)
MIN	39.9	43.8	34.6	31.6	38.3	60.9	69.8	51.1	42.2	32.7	42.1	38.3
(WY)	(1965)	(1965)	(1959)	(1959)	(1959)	(1957)	(1957)	(1958)	(1965)	(1965)	(1958)	(1958)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	68,215		42,017			
ANNUAL MEAN	187		115		193	
HIGHEST ANNUAL MEAN					534	
LOWEST ANNUAL MEAN					66.5	
HIGHEST DAILY MEAN	1,290		689		11,200	
LOWEST DAILY MEAN	(a)79		(b)Dec 23		24	
ANNUAL SEVEN-DAY MINIMUM	101		Dec 21		25	
MAXIMUM PEAK FLOW			845		(d)22,000	
MAXIMUM PEAK STAGE					20.71	
INSTANTANEOUS LOW FLOW			52		(a)17	
ANNUAL RUNOFF (CFSM)	0.68		0.42		0.71	
ANNUAL RUNOFF (INCHES)	9.30		5.73		9.62	
10 PERCENT EXCEEDS	261		171		332	
50 PERCENT EXCEEDS	163		100		127	
90 PERCENT EXCEEDS	122		67		58	

- (a) Result of freezepup
- (b) Also occurred Jan. 10 (as result of freezepup) and Sept. 12
- (c) Also occurred July 26, 27, 30, 1965
- (d) From rating curve extended above 11,000 ft<sup>3</sup>/s on basis of slope-area determination of peak flow
- (e) Estimated due to ice effect or missing record



05434500 PECATONICA RIVER AT MARTINTOWN, WI

LOCATION.--Lat 42°30'34", long 89°47'58", in NE ¼ SE ¼ sec.32, T.1 N., R.6 E., Green County, Hydrologic Unit 07090003, on right bank about 400 ft downstream from highway bridge in Martintown, 0.3 mi upstream from Wisconsin-Illinois State line and 8.8 mi downstream from Skinner Creek.

DRAINAGE AREA.--1,034 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 1308: 1949-50(M). WDR WI-71-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 757.83 ft above NGVD of 1929. Prior to Jan. 6, 1940, nonrecording gage at same site and datum. Auxiliary wire-weight gage 1.2 mi downstream, at same datum.

REMARKS.--Records good except those for periods of discharge above 2,000 ft<sup>3</sup>/s, which are fair, and estimated daily discharges, which are poor (see page 11). Diurnal fluctuation at low flow may occur from powerplant operations in Argyle, 28.2 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	825	545	e440	451	e340	e350	481	728	574	440	310	291
2	732	536	e430	e370	e340	e350	478	1,410	539	406	319	272
3	800	536	e430	e410	e340	e350	478	1,310	518	390	320	269
4	880	539	e430	e410	e340	e350	479	915	505	389	332	267
5	1,290	538	e430	e420	e340	e340	493	812	513	423	340	260
6	1,440	541	e420	e440	e340	e330	494	823	499	465	326	259
7	1,130	541	e420	e430	e340	e330	483	792	497	460	313	258
8	853	537	e420	e420	e340	e330	475	782	509	449	298	256
9	737	530	e420	445	e340	e330	475	911	520	524	300	254
10	689	530	e420	438	e340	e330	480	1,030	518	588	293	252
11	650	527	e440	369	e340	e330	492	986	502	537	291	251
12	622	521	e470	e400	e340	e360	493	928	489	478	288	253
13	599	528	e480	e400	e340	e450	483	1,060	481	458	287	279
14	579	519	e490	e400	e330	e600	472	946	474	428	285	403
15	574	509	e480	e380	e330	e1,100	464	952	461	407	282	581
16	568	502	e460	e370	e330	e1,000	460	1,010	447	394	279	611
17	564	494	e450	e360	e330	e900	459	924	435	382	277	438
18	565	490	e470	e350	e350	755	459	811	434	366	273	331
19	567	493	e530	e340	e380	619	463	748	481	358	271	307
20	572	504	e570	e340	e420	580	479	814	440	353	263	302
21	560	513	e530	e330	e470	576	504	802	422	347	261	291
22	547	505	e460	e330	e530	568	508	708	413	348	264	288
23	533	496	e400	e330	e560	543	479	669	406	342	267	287
24	533	491	e330	e330	e600	520	453	655	402	340	263	289
25	556	485	e420	e330	e510	513	440	635	401	322	259	287
26	590	474	e420	e330	e470	499	432	601	457	330	259	281
27	612	430	e420	e330	e400	483	421	579	468	312	261	279
28	598	390	e430	e330	e360	505	405	559	458	316	262	280
29	577	500	e440	e330	---	568	406	545	443	316	266	281
30	568	536	e450	e330	---	551	416	540	461	323	278	277
31	559	---	472	e340	---	508	---	562	---	316	318	---
TOTAL	21,469	15,280	13,872	11,583	10,790	15,918	14,004	25,547	14,167	12,307	8,905	9,234
MEAN	693	509	447	374	385	513	467	824	472	397	287	308
MAX	1,440	545	570	451	600	1,100	508	1,410	574	588	340	611
MIN	533	390	330	330	330	330	405	540	401	312	259	251
CFSM	0.67	0.49	0.43	0.36	0.37	0.50	0.45	0.80	0.46	0.38	0.28	0.30
IN.	0.77	0.55	0.50	0.42	0.39	0.57	0.50	0.92	0.51	0.44	0.32	0.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	542	588	518	581	803	1,354	969	821	863	790	584	575
MAX	1,226	2,429	1,492	2,049	2,512	3,155	2,943	3,200	2,804	5,190	1,752	1,920
(WY)	(1987)	(1962)	(1983)	(1960)	(1953)	(1950)	(1960)	(1973)	(2000)	(1993)	(1993)	(1965)
MIN	187	211	162	147	182	259	328	234	233	181	167	166
(WY)	(1957)	(1965)	(1959)	(1959)	(1959)	(1957)	(1957)	(1958)	(1965)	(1965)	(1958)	(1958)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	272,908		173,076			
ANNUAL MEAN	748		474		748	
HIGHEST ANNUAL MEAN					1,720	
LOWEST ANNUAL MEAN					292	
HIGHEST DAILY MEAN	3,020	Jun 7	1,440	Oct 6	14,600	Jul 1, 1969
LOWEST DAILY MEAN	(a)330	Dec 24	251	Sep 11	132	Nov 7, 1949
ANNUAL SEVEN-DAY MINIMUM	(a)409	Dec 23	255	Sep 6	(a)140	Jan 18, 1959
MAXIMUM PEAK FLOW			1,510	May 2	15,100	Jul 1, 1969
MAXIMUM PEAK STAGE			8.66	May 2	21.46	Jul 1, 1969
INSTANTANEOUS LOW FLOW					(b)0.00	Dec 14, 1939
ANNUAL RUNOFF (CFSM)	0.72		0.46		0.72	
ANNUAL RUNOFF (INCHES)	9.82		6.23		9.84	
10 PERCENT EXCEEDS	1,010		677		1,330	
50 PERCENT EXCEEDS	657		449		538	
90 PERCENT EXCEEDS	495		287		260	

- (a) Ice affected
- (b) Result of regulation
- (c) Estimated due to ice effect or missing record

05435943 BADGER MILL CREEK AT VERONA, WI

LOCATION.--Lat 42°58'37", long 89°32'22", in NW ¼ SW ¼ sec.22, T.6 N., R.8 E., Dane County, Hydrologic Unit 07090004, on left bank 60 ft downstream of Bruce Street, 0.8 mi southwest of intersection of State Highway 69 and County Trunk Highway M, at Verona.

DRAINAGE AREA.--20.3 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 930 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good (see page 11). Gage-height and water-quality telemeter at station. Effluent discharged into creek continuously at an average rate of 4.6 ft<sup>3</sup>/s (data provided by Madison Metropolitan Sewerage District).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	8.7	8.9	8.0	7.3	7.1	8.1	26	9.5	6.9	8.0	6.0
2	11	8.5	8.8	8.1	7.4	7.1	8.0	11	8.6	6.8	8.1	5.9
3	9.6	8.5	8.8	8.1	7.5	7.1	8.0	9.7	8.1	6.9	8.1	5.9
4	19	8.6	8.8	8.0	7.3	7.1	8.1	9.4	8.0	7.9	7.6	5.9
5	13	8.7	8.7	8.0	7.3	7.1	8.1	12	7.8	9.8	7.5	5.9
6	10	8.8	8.6	8.0	7.3	7.1	8.0	11	7.7	11	7.4	5.7
7	9.3	8.9	8.7	8.1	7.3	7.2	8.1	13	7.6	12	7.1	5.8
8	8.9	8.8	8.6	8.1	7.3	7.1	8.3	11	7.6	12	6.9	5.8
9	8.7	8.8	8.6	8.1	7.2	7.0	8.3	13	7.0	10	6.8	5.9
10	8.9	8.8	8.6	8.1	7.3	7.1	8.4	10	6.9	9.9	6.8	5.8
11	8.9	8.7	8.6	8.0	7.4	7.2	8.5	11	6.8	9.1	6.8	5.8
12	8.7	8.7	8.6	8.0	7.3	6.9	8.4	10	6.9	8.6	6.7	6.5
13	8.7	8.8	8.6	7.9	7.3	7.4	8.4	9.2	6.8	8.4	6.6	18
14	8.8	8.7	8.5	7.8	7.3	8.0	8.7	9.7	6.7	8.4	6.6	50
15	8.8	8.7	8.5	7.7	7.2	7.8	8.8	9.1	6.7	35	6.7	17
16	8.7	8.7	8.5	7.7	7.3	7.6	8.8	8.7	6.7	16	6.5	8.5
17	8.5	8.7	8.4	7.7	7.4	7.6	8.8	8.6	6.6	10	6.5	6.8
18	8.7	8.9	10	7.7	7.4	7.4	8.8	8.6	6.5	8.7	6.5	6.3
19	8.5	8.9	8.8	7.7	7.4	7.6	9.4	9.4	6.4	8.3	6.5	6.0
20	8.5	9.1	8.5	7.6	7.6	7.7	9.3	11	6.3	8.2	6.5	5.8
21	8.5	9.4	8.4	7.6	7.4	7.6	9.1	9.3	6.2	40	6.4	5.7
22	8.5	9.3	8.3	7.6	7.3	7.5	9.0	8.8	6.1	18	6.2	5.8
23	8.4	9.2	8.4	7.5	7.2	7.5	9.0	9.0	6.1	9.2	6.2	5.6
24	8.5	9.1	8.3	7.5	7.2	7.6	9.1	9.1	6.6	7.9	6.2	5.5
25	9.3	9.2	8.4	7.5	7.2	7.6	9.2	9.1	7.0	7.6	6.3	5.6
26	8.6	9.1	8.3	7.4	7.2	7.6	9.1	9.2	6.3	7.6	6.3	5.6
27	8.5	9.1	8.3	7.5	7.2	7.7	9.1	9.3	6.2	7.6	6.4	5.6
28	8.7	9.1	8.2	7.4	7.2	8.9	9.1	10	10	7.6	6.3	5.6
29	8.7	9.1	8.3	7.4	---	8.0	9.0	9.0	9.1	7.9	7.0	5.5
30	8.8	9.0	8.5	7.5	---	7.9	12	9.6	7.3	8.0	5.9	5.4
31	8.8	---	8.2	7.3	---	7.9	---	12	---	8.6	5.9	---
TOTAL	289.6	266.6	265.7	240.6	204.7	232.0	263.0	325.8	216.1	343.9	209.3	245.2
MEAN	9.34	8.89	8.57	7.76	7.31	7.48	8.77	10.5	7.20	11.1	6.75	8.17
MAX	19	9.4	10	8.1	7.6	8.9	12	26	10	40	8.1	50
MIN	8.4	8.5	8.2	7.3	7.2	6.9	8.0	8.6	6.1	6.8	5.9	5.4
CFSM	0.46	0.44	0.42	0.38	0.36	0.37	0.43	0.52	0.35	0.55	0.33	0.40
IN.	0.53	0.49	0.49	0.44	0.38	0.43	0.48	0.60	0.40	0.63	0.38	0.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

	8.70	8.19	7.33	7.63	10.4	9.87	11.0	11.0	14.0	9.95	10.3	9.66
MEAN	8.70	8.19	7.33	7.63	10.4	9.87	11.0	11.0	14.0	9.95	10.3	9.66
MAX	12.5	12.0	10.1	9.24	17.7	13.6	19.3	15.2	29.8	14.0	19.7	15.2
(WY)	(2002)	(1999)	(2002)	(2001)	(1997)	(1997)	(1999)	(2000)	(2000)	(1999)	(2001)	(2001)
MIN	3.55	3.28	3.25	3.67	4.74	7.30	6.34	6.39	6.93	7.94	4.53	3.76
(WY)	(1998)	(1998)	(1998)	(1998)	(1998)	(2000)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1997 - 2003
ANNUAL TOTAL	3,729.6	3,102.5	
ANNUAL MEAN	10.2	8.50	9.83
HIGHEST ANNUAL MEAN			11.7
LOWEST ANNUAL MEAN			7.66
HIGHEST DAILY MEAN	60	Jun 4	234
LOWEST DAILY MEAN	(a)8.2	Aug 10,11	2.9
ANNUAL SEVEN-DAY MINIMUM	8.3	Dec 22	3.1
MAXIMUM PEAK FLOW			466
MAXIMUM PEAK STAGE			8.86
ANNUAL RUNOFF (CFSM)	0.50		0.48
ANNUAL RUNOFF (INCHES)	6.83		6.58
10 PERCENT EXCEEDS	12		12
50 PERCENT EXCEEDS	9.6		8.6
90 PERCENT EXCEEDS	8.5		4.5

(a) Also occurred Dec. 28 and 31

05435943 BADGER MILL CREEK AT VERONA, WI—Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1996 to current year.

DISSOLVED OXYGEN: May 1998 to current year.

INSTRUMENTATION.--Continuous water temperature recorder since November 1996. Dissolved-oxygen recorder since May 1998.

REMARKS.--Records represent water temperature at sensor within 0.5°C. Effluent discharged continuously into creek after Aug. 28, 1998.

## EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum, 26.5°C, Aug. 20, 21, and 26, 2003; minimum 0.0°C on many days during winter periods of 1996-98 water years.

DISSOLVED OXYGEN: Maximum, 24.9 mg/L, Mar. 29, 1999; minimum, 1.3 mg/L, Oct. 5, 1998.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 26.5°C, Aug. 20, 21, and 26; minimum 1.0°C, Jan. 23.

DISSOLVED OXYGEN: Maximum, 21.8 mg/L, Apr. 14 and 15; minimum, 2.8 mg/L, Apr. 25.

## TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	18.5	16.5	17.5	11.0	8.0	9.5	8.0	5.0	6.5	7.0	5.5	6.5
2	18.0	15.0	16.5	12.0	8.0	9.5	8.0	5.5	7.0	8.0	6.5	7.0
3	15.5	14.5	15.0	11.5	8.0	10.0	7.5	5.0	6.0	8.0	5.5	6.5
4	18.0	15.0	16.5	12.0	9.0	10.0	9.0	5.0	6.5	8.5	5.5	7.0
5	16.5	13.5	15.0	11.0	9.5	10.5	8.0	5.0	6.5	9.0	7.5	8.0
6	17.0	13.0	15.0	12.0	10.0	11.0	7.5	4.5	6.0	8.5	7.0	7.5
7	15.0	11.5	13.0	12.5	9.0	11.0	9.0	7.0	7.5	9.0	6.5	7.5
8	15.0	13.0	14.0	14.0	11.0	12.0	7.0	5.0	6.5	10.0	7.5	8.5
9	16.5	13.0	14.5	14.5	11.5	13.0	7.5	4.0	5.5	8.5	6.0	7.5
10	17.0	12.5	14.5	14.5	12.0	13.5	9.5	6.5	7.5	6.5	3.5	5.5
11	17.5	13.0	15.0	12.0	10.5	11.0	9.5	6.0	8.0	5.5	3.0	4.0
12	15.0	13.0	14.5	11.5	10.0	10.5	10.0	8.0	9.5	6.0	4.0	5.0
13	14.0	11.0	12.5	12.5	9.0	10.5	10.0	8.5	9.5	6.5	4.0	5.0
14	14.5	10.5	12.0	11.5	10.0	10.5	10.0	8.5	9.0	6.0	3.0	4.5
15	14.5	11.0	12.5	10.5	9.0	10.0	10.5	8.0	9.0	6.0	3.0	4.0
16	13.5	10.0	11.5	11.0	8.0	9.5	8.5	6.5	7.5	7.0	4.0	5.5
17	12.5	11.0	11.5	10.0	7.5	8.5	8.5	7.5	8.0	6.0	3.5	4.5
18	13.5	11.0	12.0	10.5	7.5	9.0	11.0	7.0	9.0	6.0	3.0	4.5
19	12.5	11.0	12.0	11.5	8.5	10.0	9.5	8.0	9.0	6.0	3.0	4.5
20	14.0	10.0	11.5	12.0	8.5	10.5	8.5	7.0	7.5	6.0	4.0	4.5
21	13.5	11.5	12.5	10.5	9.5	10.0	8.0	6.0	7.0	5.5	3.0	4.0
22	12.5	11.0	11.5	10.5	8.5	9.5	7.5	6.0	6.5	5.0	2.0	3.5
23	12.5	10.5	11.0	11.0	8.5	9.5	7.0	5.5	6.0	4.5	1.0	2.5
24	12.0	10.5	11.5	9.0	8.0	8.5	7.0	5.0	6.0	5.0	2.5	4.0
25	12.5	11.0	11.5	9.0	6.5	7.5	7.0	6.5	6.5	7.0	4.5	5.0
26	14.0	11.5	12.5	9.5	6.5	7.5	8.0	5.5	6.5	5.0	2.5	3.5
27	12.0	10.5	11.5	9.0	6.5	7.5	8.0	6.0	7.0	5.0	2.0	3.5
28	12.5	10.5	11.5	9.0	6.5	7.5	9.0	7.0	8.0	7.0	4.5	6.0
29	13.0	10.5	11.5	10.5	8.0	9.0	9.5	7.0	8.0	7.0	4.0	5.5
30	12.5	9.5	11.0	8.5	5.0	7.0	11.5	8.0	9.5	8.0	4.0	6.0
31	12.0	9.0	10.5	---	---	---	8.5	6.5	7.5	9.0	6.5	7.5
MONTH	18.5	9.0	13.0	14.5	5.0	9.8	11.5	4.0	7.4	10.0	1.0	5.4

## 05435943 BADGER MILL CREEK AT VERONA, WI—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	8.5	7.0	8.0	10.0	5.0	7.0	18.5	8.5	12.0	14.0	10.0	11.5
2	9.0	7.5	8.0	9.0	3.5	6.5	15.5	8.5	11.0	17.5	10.0	12.5
3	8.0	6.0	7.5	6.5	3.5	5.0	9.0	7.5	8.5	19.0	8.5	13.0
4	6.5	3.0	5.0	8.0	3.0	5.0	8.0	5.0	7.0	12.5	9.5	11.0
5	6.5	2.5	4.5	9.5	3.0	5.5	10.5	5.5	7.5	13.0	10.5	12.0
6	7.5	4.0	6.0	10.0	4.0	6.5	13.0	5.0	8.0	19.0	11.5	14.5
7	6.0	2.5	4.0	10.0	5.0	7.0	7.0	4.5	6.0	13.0	11.0	12.0
8	7.0	2.5	4.5	7.0	3.5	5.5	11.0	5.0	7.5	14.0	11.5	12.5
9	6.5	2.0	4.0	8.0	2.0	4.0	16.0	4.5	9.0	18.0	12.0	14.0
10	6.5	3.0	5.0	9.0	1.5	4.5	17.5	6.5	10.5	19.0	12.0	14.5
11	6.5	2.0	3.5	10.5	4.0	6.5	18.5	7.5	12.0	14.5	11.0	12.5
12	6.0	1.5	3.5	11.0	6.0	7.5	18.0	8.0	12.0	18.5	10.5	13.5
13	8.5	3.0	5.5	11.5	5.5	7.5	18.5	7.5	12.0	20.0	10.5	14.5
14	9.0	3.0	5.5	12.5	5.0	7.5	20.5	9.5	13.5	13.5	12.0	12.5
15	6.0	3.0	4.5	14.0	6.0	9.0	21.0	11.5	15.5	16.5	12.0	13.5
16	8.0	2.5	4.5	15.0	7.5	10.5	13.5	8.5	11.0	19.5	10.5	14.5
17	8.5	3.0	6.0	16.5	8.0	11.5	13.0	8.0	10.0	18.0	11.5	14.5
18	10.0	5.5	7.5	11.5	8.0	9.5	12.0	9.5	10.5	19.0	12.0	15.0
19	10.0	4.5	7.0	9.0	7.0	8.0	16.0	9.0	12.0	17.0	14.0	15.0
20	11.0	5.5	7.5	11.0	8.0	9.5	14.5	10.5	12.5	19.0	13.0	15.5
21	11.5	6.5	8.0	10.5	8.0	9.0	12.0	9.0	10.5	19.0	11.0	14.5
22	8.0	4.5	6.5	12.0	8.0	9.5	18.5	8.0	12.0	20.0	10.5	14.5
23	8.0	3.0	5.0	16.0	7.0	10.5	19.0	8.0	12.5	19.0	12.5	15.0
24	7.0	2.5	4.5	15.0	9.0	11.5	14.5	8.5	11.5	19.5	11.0	14.5
25	7.5	1.5	4.0	15.5	7.5	10.5	19.0	9.0	13.0	21.0	12.0	15.5
26	9.0	2.5	5.0	15.5	7.5	10.5	20.0	8.5	13.0	21.0	11.5	15.5
27	10.5	3.5	6.0	13.0	9.0	10.5	21.0	10.0	14.5	22.0	12.5	16.5
28	10.5	4.0	6.5	10.0	7.0	8.5	19.0	12.0	14.5	19.5	13.0	15.5
29	---	---	---	10.5	6.0	8.0	16.5	10.5	13.0	19.5	12.0	15.5
30	---	---	---	13.5	5.5	8.5	12.0	10.0	11.5	19.5	12.5	15.5
31	---	---	---	14.5	6.0	9.5	---	---	---	18.0	14.0	15.5
MONTH	11.5	1.5	5.6	16.5	1.5	8.1	21.0	4.5	11.1	22.0	8.5	14.1
	JUNE			JULY			AUGUST			SEPTEMBER		
1	20.0	12.0	15.5	23.0	16.5	19.5	23.5	18.0	20.5	22.0	16.5	18.5
2	17.0	12.0	14.5	23.0	16.5	20.0	23.0	17.5	20.0	23.5	15.0	19.0
3	19.5	13.0	15.0	23.0	17.5	20.5	22.0	17.5	19.5	23.5	17.0	19.5
4	19.5	13.5	15.5	24.0	18.5	21.5	21.0	18.0	19.5	22.5	16.5	18.5
5	21.5	13.0	16.5	24.0	19.0	22.0	23.0	17.0	20.0	23.0	15.0	18.5
6	16.0	13.5	14.5	22.0	19.0	20.5	24.0	18.5	21.0	24.0	16.5	19.5
7	20.5	14.0	16.5	24.5	20.0	22.0	23.5	18.0	20.5	24.5	17.5	20.5
8	18.0	14.5	16.0	22.5	19.0	20.0	23.0	18.5	20.5	24.0	17.5	20.5
9	21.5	13.0	17.0	20.0	18.0	19.0	22.0	17.0	19.5	24.5	18.5	21.0
10	18.5	14.5	16.0	19.5	18.0	18.5	24.0	17.0	20.0	23.5	18.0	20.5
11	16.5	15.0	15.5	21.0	16.5	18.5	20.5	18.5	19.0	24.0	18.5	21.0
12	19.0	14.0	16.0	22.0	16.5	19.5	22.0	18.0	20.0	21.5	18.5	20.0
13	22.5	14.5	18.0	22.5	16.5	19.5	24.0	17.0	20.5	21.0	19.0	20.0
14	22.0	15.0	18.0	22.5	17.5	20.0	23.5	18.0	20.5	19.5	18.0	19.0
15	23.5	14.5	18.5	23.5	19.5	21.5	25.0	19.0	21.5	20.0	16.5	18.0
16	23.0	14.5	18.5	23.5	19.5	21.5	26.0	19.0	22.0	21.5	16.5	18.5
17	23.5	14.5	18.5	23.5	19.0	21.0	25.5	18.5	21.5	22.0	16.5	18.5
18	22.0	16.0	18.5	22.5	17.5	20.0	25.0	17.5	21.0	22.5	17.0	19.0
19	22.0	15.0	18.0	22.5	16.0	19.5	25.0	19.0	21.5	18.5	15.5	17.0
20	22.5	13.0	17.5	21.0	18.0	19.5	26.5	19.0	22.0	20.5	13.5	16.5
21	23.0	14.0	18.0	23.0	19.0	21.5	26.5	20.0	22.5	19.5	14.5	17.0
22	23.5	14.5	18.5	23.0	20.0	21.0	25.0	18.5	21.0	19.0	16.0	17.5
23	22.5	15.5	19.0	23.0	17.5	20.0	24.5	17.5	20.5	19.5	14.0	16.5
24	24.0	17.0	20.5	22.5	16.5	19.5	25.0	18.0	21.5	20.0	15.0	17.0
25	24.0	18.0	20.5	23.0	16.5	20.0	25.5	20.0	22.0	18.0	8.5	15.0
26	21.0	17.0	19.0	22.0	18.5	20.0	26.5	19.5	22.5	16.5	14.5	15.5
27	22.5	15.0	18.5	23.5	19.0	21.5	25.0	18.5	21.0	16.0	13.5	14.5
28	21.0	16.5	18.5	22.5	18.0	20.0	25.0	17.0	21.0	15.5	14.0	14.5
29	22.5	18.0	20.0	24.0	17.0	20.0	24.5	19.5	22.0	17.0	12.0	14.5
30	23.0	17.0	19.5	22.5	18.0	20.0	23.0	18.5	20.0	16.0	12.0	13.5
31	---	---	---	23.5	18.0	20.5	20.0	17.0	18.5	---	---	---
MONTH	24.0	12.0	17.5	24.5	16.0	20.3	26.5	17.0	20.7	24.5	8.5	18.0

## 05435943 BADGER MILL CREEK AT VERONA, WI—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	9.9	6.0	7.4	13.8	8.7	10.3	15.9	10.0	12.0	12.2	8.9	10.5
2	7.9	5.6	6.6	14.0	8.5	10.2	16.1	9.9	11.8	12.2	9.7	10.5
3	9.3	6.5	7.5	13.5	8.5	10	14.7	10.4	11.7	11.2	9.2	10
4	7.1	6.4	6.7	14.7	8.6	10.4	14.7	10.0	11.6	11.5	8.9	9.7
5	9.2	6.6	7.6	11.6	8.2	9.2	13.9	9.8	11.3	11.2	8.8	9.4
6	9.3	6.7	7.7	14.8	8.4	10.2	13.5	9.5	11.1	11.3	9.0	9.7
7	10.2	7.3	8.3	14.2	8.2	10.0	14.5	9.4	11.1	11.4	8.9	9.7
8	9.3	7.0	7.9	15.3	8.0	10.1	14.5	9.6	11.3	11.5	8.8	9.6
9	9.2	7.0	7.7	14.8	7.4	9.6	14.1	9.7	11.6	11.0	8.7	9.5
10	8.9	6.9	7.6	13.8	7.3	9.1	14.4	9.2	11.4	11.8	9.4	10.2
11	8.9	6.6	7.4	11.5	7.7	9.0	12.4	9.1	10.4	12.4	10.1	10.7
12	7.4	5.9	6.9	15.1	8.6	10.5	11.4	8.6	9.4	12.2	9.8	10.5
13	10.6	7.4	8.7	15.6	8.4	10.5	12.2	8.8	9.7	12.2	9.8	10.5
14	10.5	7.7	8.8	14.0	8.5	10.0	13.4	8.9	10.1	12.2	9.9	10.6
15	10.3	7.4	8.4	16.1	8.7	11.0	12.4	8.9	9.8	12.1	10.1	10.7
16	10.4	7.4	8.4	16.4	9.1	11.2	12.9	9.2	10.3	12.5	9.4	10.5
17	9.8	7.2	8.1	15.4	9.3	11.1	11.4	9.1	9.8	12.5	10.1	10.8
18	8.8	5.9	7.3	14.1	8.5	10.6	10.0	8.6	9.2	12.3	10.2	10.8
19	11.1	7.0	8.5	16.6	8.6	11.0	11.7	8.7	9.6	13.3	10.0	11.1
20	11.6	8.0	9.3	16.0	8.6	10.7	11.9	8.9	9.8	13.6	10.1	11.1
21	11.7	7.8	9.0	15.8	8.4	10.6	12.8	9.5	10.4	12.7	10.2	11.0
22	11.7	7.8	9.1	17.6	8.8	11.2	12.5	9.5	10.4	13.5	10.4	11.3
23	12.5	8.0	9.4	16.6	9.1	11.2	12.5	10.0	10.7	13.2	10.9	11.5
24	10.2	7.5	8.4	15.5	9.0	11.1	12.3	9.9	10.6	12.7	10.3	11.1
25	9.4	7.4	8.2	16.4	9.8	11.6	11.7	9.8	10.3	13.0	10.3	11.0
26	12.5	7.5	9.2	16.7	9.8	11.7	12.0	9.7	10.5	13.5	10.5	11.5
27	12.5	7.8	9.2	16.0	9.8	11.7	12.1	9.7	10.4	13.2	10.1	11.3
28	13.0	8.0	9.6	16.5	9.6	11.6	12.1	9.5	10.2	11.6	9.7	10.3
29	13.8	8.4	9.9	15.9	9.3	11.2	12.3	9.4	10.2	12.5	10.0	10.7
30	13.7	8.3	10	16.4	9.2	11.8	10.5	8.7	9.4	12.3	9.9	10.7
31	13.9	8.3	10.0	---	---	---	11.8	9.4	10.2	11.5	9.5	10.2
MONTH	13.9	5.6	8.3	17.6	7.3	10.6	16.1	8.6	10.5	13.6	8.7	10.5
	FEBRUARY			MARCH			APRIL			MAY		
1	11.6	9.6	10.2	14.1	9.7	11.2	---	---	---	9.0	7.9	8.2
2	11.7	9.5	10.1	14.5	9.7	11.4	---	---	---	11.3	8.2	9.4
3	10.3	9.2	9.8	14.7	10.2	11.7	---	---	---	12.8	8.5	10.1
4	12.1	10.0	10.8	14.6	10.2	11.6	---	---	---	12.6	8.4	10.2
5	11.8	10.4	10.9	14.8	10.3	11.8	19.2	9.1	12.7	10.7	8.2	9.1
6	11.3	10.0	10.6	13.8	10.2	11.3	20.2	9.1	12.9	14.1	8.2	10.3
7	11.9	10.6	11.1	14.0	10.0	11.2	15.3	8.9	11.2	10.0	8.1	9.0
8	11.9	10.6	11.0	13.8	10.0	11.2	19.0	9.3	12.6	12.3	8.7	9.9
9	12.2	10.7	11.2	13.5	10.7	11.8	20.0	8.8	12.6	11.0	8.3	9.2
10	11.1	9.9	10.5	13.2	10.8	11.6	20.1	8.4	12.3	13.3	7.4	9.9
11	10.9	9.7	10.3	14.0	10.0	11.5	20.2	7.9	12.1	11.2	7.4	9.2
12	10.9	10.0	10.5	15.1	9.7	11.4	20.5	7.9	12.2	13.7	8.8	10.6
13	10.6	9.4	10.2	14.8	9.8	11.4	21.5	7.9	12.5	14.2	8.4	10.6
14	10.9	9.8	10.2	13.4	8.8	10.5	21.8	7.2	12.4	11.1	8.2	9.1
15	12.0	10.0	10.9	13.5	8.3	10	21.8	7.0	12.0	13.8	8.4	10.3
16	11.6	10.4	10.9	14.4	8.1	10.1	18.8	6.8	11.2	14.1	8.3	10.4
17	11.6	10.0	10.6	15.7	8.1	10.6	20.2	7.7	12.1	14.3	8.2	10.4
18	12.2	9.9	10.5	15.1	8.5	10.4	19.4	7.6	11.9	14.9	8.0	10.6
19	11.7	9.6	10.4	14.4	8.9	10.5	---	---	---	10.6	7.4	8.7
20	12.4	9.6	10.5	15.1	8.6	10.8	---	---	---	12.0	7.3	9.3
21	12.4	9.3	10.3	17.1	8.6	11.3	---	---	---	13.3	8.2	10.1
22	12.4	9.3	10.3	18.3	8.8	11.8	---	---	---	13.5	8.1	10.1
23	13.0	9.9	10.9	19.5	8.6	12.3	---	---	---	14.2	7.6	10.1
24	13.1	10.0	11.0	20.5	8.4	12.3	19.0	6.3	11.2	15.1	8.2	10.7
25	12.9	10.5	11.2	21.0	8.4	12.6	17.9	2.8	8.8	16.3	7.9	10.9
26	12.8	10.2	11.0	20.3	8.4	12.6	---	---	---	16.8	7.9	11.2
27	13.4	10.1	11.1	20.4	8.2	11.8	---	---	---	16.5	7.7	10.9
28	14.0	10.0	11.2	11.7	8.2	9.7	---	---	---	14.4	6.4	8.7
29	---	---	---	19.2	9.4	12.9	19.9	7.0	11.2	14.2	7.1	9.7
30	---	---	---	19.5	9.0	12.6	10.5	7.0	8.5	13.2	5.5	8.4
31	---	---	---	20.5	8.0	12.3	---	---	---	9.9	6.3	7.8
MONTH	14.0	9.2	10.7	21.0	8.0	11.4	21.8	2.8	11.7	16.8	5.5	9.8



## 05435943 BADGER MILL CREEK AT VERONA, WI—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	13.0	7.3	9.4	11.9	5.0	7.6	9.9	3.6	6.3	9.9	5.1	6.7
2	12.4	7.0	9.3	11.8	4.7	7.6	10.2	3.9	6.4	8.3	4.5	6.2
3	13.4	7.4	9.2	12.0	4.4	7.2	9.7	3.8	6.2	8.1	4.5	5.7
4	13.9	7.4	9.7	11.3	4.3	6.7	8.7	4.2	6.0	8.4	4.6	5.8
5	13.4	7.0	9.5	11.0	3.8	6.6	9.3	3.9	6.1	8.4	4.7	6.0
6	11.0	6.2	8.2	8.6	3.8	5.7	9.9	3.6	6.0	8.6	4.6	6.0
7	12.9	6.4	9.0	9.7	3.7	5.8	9.7	3.7	5.9	8.7	4.6	5.9
8	11.4	5.6	8.4	8.1	3.6	5.1	9.6	3.7	6.0	8.9	4.6	6.1
9	12.6	6.4	8.9	8.4	3.8	5.8	9.2	3.9	6.0	9.1	4.7	6.2
10	10.3	6.9	8.3	6.8	3.6	4.8	9.8	4.0	6.2	9.3	4.9	6.3
11	10.6	6.7	8.4	8.5	3.5	5.6	7.7	3.8	5.4	9.3	4.8	6.3
12	11.8	7.0	8.8	9.4	3.5	5.8	9.6	4.2	6.2	7.3	4.4	5.5
13	12.5	6.8	9.0	9.2	3.5	5.9	10.0	4.3	6.4	5.9	4.4	5.3
14	12.9	6.6	9.1	9.9	3.5	6.1	10.3	4.1	6.4	5.4	4.4	4.9
15	13.0	6.7	9.1	4.7	3.4	3.9	10.7	4.2	6.5	6.8	5.0	5.9
16	13.1	6.7	9.1	8.2	3.2	5.3	10.8	3.9	6.5	7.9	5.9	6.6
17	13.5	6.8	9.3	8.9	3.7	5.7	11.0	3.9	6.6	8.4	5.9	6.7
18	13.0	6.6	9.0	9.7	3.7	6.1	11.1	4.2	6.7	8.9	5.3	6.9
19	13.8	6.0	9.2	10.0	3.9	6.2	11.2	4.3	6.7	9.4	5.5	7.2
20	13.8	7.0	9.5	9.3	3.7	5.9	11.3	3.9	6.6	9.9	6.5	7.7
21	14.3	6.8	9.6	4.4	3.2	3.8	10.9	3.8	6.3	10.3	6.5	7.8
22	14.8	6.6	9.7	7.2	3.3	4.9	11.2	4.2	6.6	9.9	6.3	7.6
23	13.6	6.0	8.9	9.1	3.8	6.0	11.2	4.3	6.8	10.9	6.8	8.3
24	11.3	5.4	7.4	9.0	4.2	6.0	10.8	4.2	6.6	11.5	6.7	8.3
25	12.3	4.1	6.9	9.5	4.1	6.1	10.3	4.2	6.2	13.6	7.0	8.9
26	11.4	3.2	7.6	9.0	3.9	5.9	9.8	4.0	6.1	10.5	7.0	8.1
27	12.4	5.5	8.1	10.1	3.8	6.1	9.9	4.0	6.3	12.0	7.0	8.7
28	9.8	4.9	6.5	10.4	3.9	6.3	10.1	4.2	6.4	11.9	7.2	8.9
29	10.8	5.0	7.2	10.7	4.2	6.6	9.3	3.6	5.9	12.4	7.6	9.3
30	11.0	5.0	7.4	10.6	3.9	6.5	9.6	4.4	6.3	12.5	7.7	9.5
31	---	---	---	10.5	3.3	6.0	8.3	4.8	6.2	---	---	---
MONTH	14.8	3.2	8.7	12.0	3.2	5.9	11.3	3.6	6.3	13.6	4.4	7.0

05436500 SUGAR RIVER NEAR BROADHEAD, WI

LOCATION.--Lat 42°36'42", long 89°23'53", in SW ¼ sec.26, T.2 N., R.9 E., Green County, Hydrologic Unit 07090004, on left bank at downstream side of highway bridge, 1.2 mi southwest of Broadhead, and 1.9 mi upstream from Sylvester Creek.

DRAINAGE AREA.--523 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1914 to current year. Monthly discharge only for January and February 1914 published in WSP 1308.

REVISED RECORDS.--WSP 1238: 1914-16, 1918, 1922, 1927, 1933. WSP 1508: 1916-17(M), 1919(M), 1920, 1921(M), 1927-28(M), 1930(M), 1931, 1936(M), 1943(M). WDR WI-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 768.14 ft above NGVD of 1929. Prior to Oct. 17, 1938, nonrecording gage 20 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor (see page 11). Some regulation from dam and non-operational powerplant upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	414	276	e220	243	e180	e200	312	395	279	218	190	135
2	378	261	e220	e230	e180	e200	300	578	273	201	181	135
3	379	262	e220	e230	e180	e190	294	644	268	199	176	137
4	471	279	e220	232	e180	e190	298	526	264	200	180	139
5	557	264	e220	258	e180	e190	317	468	256	225	184	126
6	585	262	e220	246	e180	e190	320	486	253	232	177	126
7	536	267	e220	237	e180	e190	311	477	255	233	181	126
8	424	264	e220	237	e180	e190	301	481	265	243	169	112
9	362	262	e220	243	e180	e190	290	667	262	302	164	117
10	329	261	e220	e230	e180	e190	293	693	256	326	163	120
11	323	259	e230	e180	e180	e190	309	677	250	283	161	119
12	315	255	236	e220	e180	e200	305	567	247	263	160	124
13	307	254	238	e210	e180	e220	292	482	244	241	159	154
14	297	254	244	e200	e180	e300	280	447	236	225	157	238
15	293	252	246	e190	e180	e360	262	442	229	242	154	300
16	302	251	e240	e190	e180	418	249	439	220	269	151	297
17	288	247	243	e180	e180	364	267	405	215	250	145	236
18	288	247	265	e180	e200	323	263	370	230	231	144	194
19	292	252	329	e180	e240	308	275	346	234	215	141	178
20	291	256	372	e180	e300	302	304	411	223	206	140	169
21	281	246	329	e180	e270	316	326	456	210	200	142	167
22	288	239	292	e180	e250	311	314	444	205	198	133	169
23	300	249	241	e180	e250	296	291	373	201	204	133	169
24	274	247	237	e180	e240	289	272	339	195	201	131	168
25	286	245	e240	e170	e230	285	260	321	205	187	131	163
26	302	232	e240	e170	e210	281	252	304	267	181	131	162
27	312	217	e240	e170	e200	277	244	291	259	178	127	167
28	305	235	264	e170	e200	303	244	285	232	176	124	169
29	292	265	252	e170	---	378	219	285	232	174	128	166
30	288	e230	254	e170	---	400	244	287	232	171	135	165
31	281	---	252	e180	---	341	---	294	---	177	134	---
TOTAL	10,640	7,590	7,684	6,216	5,650	8,382	8,508	13,680	7,197	6,851	4,726	4,947
MEAN	343	253	248	201	202	270	284	441	240	221	152	165
MAX	585	279	372	258	300	418	326	693	279	326	190	300
MIN	274	217	220	170	180	190	219	285	195	171	124	112
CFSM	0.66	0.48	0.47	0.38	0.39	0.52	0.54	0.84	0.46	0.42	0.29	0.32
IN.	0.76	0.54	0.55	0.44	0.40	0.60	0.61	0.97	0.51	0.49	0.34	0.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
MEAN	287	308	272	293	430	653	463	375	375	303	260	297	287	310	320	296	306	311	318	325	332	339	346	353	360	367	374	381	388	395	402	409	416	423	430	437	444	451	458	465	472	479	486	493	500	507	514	521	528	535	542	549	556	563	570	577	584	591	598	605	612	619	626	633	640	647	654	661	668	675	682	689	696	703	710	717	724	731	738	745	752	759	766	773	780	787	794	801	808	815	822	829	836	843	850	857	864	871	878	885	892	899	906	913	920	927	934	941	948	955	962	969	976	983	990	997	1004	1011	1018	1025	1032	1039	1046	1053	1060	1067	1074	1081	1088	1095	1102	1109	1116	1123	1130	1137	1144	1151	1158	1165	1172	1179	1186	1193	1200	1207	1214	1221	1228	1235	1242	1249	1256	1263	1270	1277	1284	1291	1298	1305	1312	1319	1326	1333	1340	1347	1354	1361	1368	1375	1382	1389	1396	1403	1410	1417	1424	1431	1438	1445	1452	1459	1466	1473	1480	1487	1494	1501	1508	1515	1522	1529	1536	1543	1550	1557	1564	1571	1578	1585	1592	1599	1606	1613	1620	1627	1634	1641	1648	1655	1662	1669	1676	1683	1690	1697	1704	1711	1718	1725	1732	1739	1746	1753	1760	1767	1774	1781	1788	1795	1802	1809	1816	1823	1830	1837	1844	1851	1858	1865	1872	1879	1886	1893	1900	1907	1914	1921	1928	1935	1942	1949	1956	1963	1970	1977	1984	1991	1998	2005	2012	2019	2026	2033	2040	2047	2054	2061	2068	2075	2082	2089	2096	2103	2110	2117	2124	2131	2138	2145	2152	2159	2166	2173	2180	2187	2194	2201	2208	2215	2222	2229	2236	2243	2250	2257	2264	2271	2278	2285	2292	2299	2306	2313	2320	2327	2334	2341	2348	2355	2362	2369	2376	2383	2390	2397	2404	2411	2418	2425	2432	2439	2446	2453	2460	2467	2474	2481	2488	2495	2502	2509	2516	2523	2530	2537	2544	2551	2558	2565	2572	2579	2586	2593	2600	2607	2614	2621	2628	2635	2642	2649	2656	2663	2670	2677	2684	2691	2698	2705	2712	2719	2726	2733	2740	2747	2754	2761	2768	2775	2782	2789	2796	2803	2810	2817	2824	2831	2838	2845	2852	2859	2866	2873	2880	2887	2894	2901	2908	2915	2922	2929	2936	2943	2950	2957	2964	2971	2978	2985	2992	2999	3006	3013	3020	3027	3034	3041	3048	3055	3062	3069	3076	3083	3090	3097	3104	3111	3118	3125	3132	3139	3146	3153	3160	3167	3174	3181	3188	3195	3202	3209	3216	3223	3230	3237	3244	3251	3258	3265	3272	3279	3286	3293	3300	3307	3314	3321	3328	3335	3342	3349	3356	3363	3370	3377	3384	3391	3398	3405	3412	3419	3426	3433	3440	3447	3454	3461	3468	3475	3482	3489	3496	3503	3510	3517	3524	3531	3538	3545	3552	3559	3566	3573	3580	3587	3594	3601	3608	3615	3622	3629	3636	3643	3650	3657	3664	3671	3678	3685	3692	3699	3706	3713	3720	3727	3734	3741	3748	3755	3762	3769	3776	3783	3790	3797	3804	3811	3818	3825	3832	3839	3846	3853	3860	3867	3874	3881	3888	3895	3902	3909	3916	3923	3930	3937	3944	3951	3958	3965	3972	3979	3986	3993	4000	4007	4014	4021	4028	4035	4042	4049	4056	4063	4070	4077	4084	4091	4098	4105	4112	4119	4126	4133	4140	4147	4154	4161	4168	4175	4182	4189	4196	4203	4210	4217	4224	4231	4238	4245	4252	4259	4266	4273	4280	4287	4294	4301	4308	4315	4322	4329	4336	4343	4350	4357	4364	4371	4378	4385	4392	4399	4406	4413	4420	4427	4434	4441	4448	4455	4462	4469	4476	4483	4490	4497	4504	4511	4518	4525	4532	4539	4546	4553	4560	4567	4574	4581	4588	4595	4602	4609	4616	4623	4630	4637	4644	4651	4658	4665	4672	4679	4686	4693	4700	4707	4714	4721	4728	4735	4742	4749	4756	4763	4770	4777	4784	4791	4798	4805	4812	4819	4826	4833	4840	4847	4854	4861	4868	4875	4882	4889	4896	4903	4910	4917	4924	4931	4938	4945	4952	4959	4966	4973	4980	4987	4994	5001	5008	5015	5022	5029	5036	5043	5050	5057	5064	5071	5078	5085	5092	5099	5106	5113	5120	5127	5134	5141	5148	5155	5162	5169	5176	5183	5190	5197	5204	5211	5218	5225	5232	5239

## 05437500 ROCK RIVER AT ROCKTON, IL

LOCATION.--Lat 42°26'55", long 89°04'11", in SW ¼ NE ¼ sec.24, T.46 N., R.1 E., Winnebago County, Hydrologic Unit 07090005, on right bank 750 ft downstream from State Highway 75 in Rockton, 1.0 mi downstream from Pecatonica River, and at mile 156.1.

DRAINAGE AREA.--6,363 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1903 to July 1906, October 1906 to March 1909, July 1914 to September 1919, October 1939 to current year. Published as "below mouth of Pecatonica River at Rockton" 1903-9; as "at Rockford" 1914-19. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORD.--WSP 325: 1903-9. WSP 895: 1904(M). WSP 1508: 1915, 1916-17(M). WDR IL-75-1: Drainage area. WDR IL-97-1: 1996 (Dec. 10-23).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 707.94 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1906, nonrecording gage at site 800 ft upstream at datum about 1 ft higher. Oct. 1, 1906, to Mar. 31, 1909, nonrecording gage at site 800 ft upstream at datum about 2 ft higher. July 30, 1914, to Apr. 30, 1919, nonrecording gage at site at Rockford about 21 mi downstream, at different datum. Oct. 1, 1939, to Aug. 10, 1973, at site 800 ft upstream at same datum.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1937 reached a stage of 14.6 ft (backwater from ice), from floodmark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,800	3,460	2,880	e2,800	2,220	e2,300	3,400	3,060	4,810	2,320	1,850	e980
2	4,020	3,450	2,910	e2,700	2,200	e2,300	3,340	3,750	4,430	2,310	1,870	e950
3	4,120	3,430	2,820	e2,600	e2,400	e2,300	3,310	4,620	4,000	2,320	1,840	e990
4	4,760	3,320	2,540	e2,600	e2,600	e2,200	3,250	5,110	3,920	2,190	1,970	922
5	5,630	3,450	2,750	e2,600	e2,800	e2,100	3,290	5,660	3,930	2,420	1,950	900
6	5,540	3,320	2,720	e2,800	e2,900	e2,100	3,260	5,870	3,440	2,370	1,810	876
7	5,230	3,010	2,900	e2,800	e2,800	e2,100	3,220	5,820	3,410	2,430	1,850	834
8	5,310	2,780	3,090	e2,700	e2,700	e2,200	3,310	5,650	3,280	2,630	1,930	741
9	5,210	3,110	2,960	e2,600	e2,600	e2,200	3,150	6,410	3,240	3,370	1,910	894
10	4,710	3,320	2,840	e2,600	e2,600	e2,200	3,070	7,020	3,430	3,510	1,840	855
11	4,220	3,280	3,090	e2,600	e2,500	e2,200	3,160	7,360	3,180	3,420	1,780	870
12	3,680	3,260	2,990	2,590	e2,500	e2,200	3,070	6,960	2,900	3,050	1,760	882
13	3,520	3,200	3,070	e2,500	e2,500	e2,200	3,130	7,060	3,120	2,930	1,770	952
14	3,470	3,150	3,090	e2,500	e2,600	2,150	3,090	7,260	3,000	2,840	1,780	1,880
15	3,440	3,280	3,090	e2,500	e2,700	e2,300	2,820	7,700	3,180	3,500	1,740	1,860
16	3,420	3,300	3,060	2,710	e2,700	e2,400	2,460	7,930	3,050	3,440	1,690	1,470
17	3,350	3,210	3,160	2,780	e2,600	e2,500	2,570	e7,400	3,170	2,870	1,550	1,470
18	3,410	3,250	3,200	2,730	e2,400	e2,600	2,340	e6,800	3,280	2,780	1,530	1,990
19	3,400	3,210	3,500	2,740	e2,400	e2,800	1,920	e6,200	3,380	2,840	1,480	1,690
20	3,330	3,140	3,490	2,630	e2,400	e3,000	2,430	e6,200	3,130	2,500	1,410	1,170
21	3,310	3,220	3,520	e2,500	e2,400	3,020	2,720	6,860	2,650	2,350	e1,400	1,190
22	3,390	3,200	3,500	e2,400	e2,400	3,160	2,800	6,780	2,550	2,730	e1,300	1,390
23	3,390	3,090	3,320	e2,300	e2,400	3,140	2,920	6,590	2,490	2,520	e1,100	1,260
24	e3,300	3,140	3,010	e2,200	e2,400	3,060	3,190	6,360	2,130	2,450	e1,070	990
25	e3,200	3,130	3,010	e2,100	e2,400	3,230	3,330	5,970	2,060	2,280	e1,100	1,200
26	3,280	3,070	3,000	e2,100	e2,400	3,510	3,210	5,660	2,840	2,110	e1,000	1,200
27	3,250	2,910	3,010	e2,100	e2,400	3,210	3,320	5,410	2,140	1,980	e1,000	1,000
28	3,310	3,100	e3,000	e2,100	e2,300	3,340	2,990	5,200	2,350	1,970	e970	1,110
29	3,560	3,060	e3,000	e2,100	---	3,440	2,650	4,890	2,440	1,950	e980	1,230
30	3,670	3,110	e3,000	e2,100	---	3,440	2,610	4,830	2,370	1,890	e1,000	1,070
31	3,520	---	e2,900	e2,100	---	3,500	---	5,150	---	1,880	e1,000	---
TOTAL	119,750	95,960	94,420	77,180	70,220	82,400	89,330	187,540	93,300	80,150	47,230	34,816
MEAN	3,863	3,199	3,046	2,490	2,508	2,658	2,978	6,050	3,110	2,585	1,524	1,161
MAX	5,630	3,460	3,520	2,800	2,900	3,510	3,400	7,930	4,810	3,510	1,970	1,990
MIN	2,800	2,780	2,540	2,100	2,200	2,100	1,920	3,060	2,060	1,880	970	741
CFSM	0.61	0.50	0.48	0.39	0.39	0.42	0.47	0.95	0.49	0.41	0.24	0.18
IN.	0.70	0.56	0.55	0.45	0.41	0.48	0.52	1.10	0.55	0.47	0.28	0.20

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

MEAN	3,139	3,525	3,286	3,210	3,879	7,194	7,299	5,388	4,555	3,688	2,886	2,880
MAX	13,340	11,320	9,049	9,432	8,365	13,920	18,530	17,770	16,960	17,000	9,039	7,753
(WY)	(1987)	(1986)	(1983)	(1960)	(1997)	(1974)	(1993)	(1973)	(2000)	(1993)	(1993)	(1972)
MIN	857	1,100	1,004	800	1,000	1,692	2,476	1,103	1,248	1,056	793	780
(WY)	(1965)	(1940)	(1959)	(1940)	(1940)	(1954)	(1958)	(1958)	(1977)	(1965)	(1958)	(1958)

## ROCK RIVER BASIN

05437500 ROCK RIVER AT ROCKTON, IL—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003		
ANNUAL TOTAL	1,703,280		1,072,296				
ANNUAL MEAN	4,667		2,938		4,243		
HIGHEST ANNUAL MEAN					9,484	1993	
LOWEST ANNUAL MEAN					1,568	1958	
HIGHEST DAILY MEAN	11,800	Jun 9	,10	7,930	May 16	29,700	Mar 25, 1975
LOWEST DAILY MEAN	2,140	Aug 11		741	Sep 8	501	Sep 14, 1958
ANNUAL SEVEN-DAY MINIMUM	2,270	Sep 13		850	Sep 6	622	Oct 2, 1958
MAXIMUM PEAK FLOW				8,000	May 16	30,000	Mar 25, 1975
MAXIMUM PEAK STAGE				6.26	May 16	15.54	Mar 25, 1975
INSTANTANEOUS LOW FLOW				606	Sep 12		
ANNUAL RUNOFF (CFSM)	0.73		0.46			0.67	
ANNUAL RUNOFF (INCHES)	9.96		6.27			9.06	
10 PERCENT EXCEEDS	7,700		4,660			8,370	
50 PERCENT EXCEEDS	3,930		2,820			3,220	
90 PERCENT EXCEEDS	2,550		1,450			1,310	

(e) Estimated due to ice effect or missing record

05438283 PISCASAW CREEK NEAR WALWORTH, WI

LOCATION.--Lat 42°31'18", long 88°39'39", in NE ¼ NE ¼ sec.25, T.1 N., R.15 E., Walworth County, Hydrologic Unit 07090006, on right bank 0.9 mi upstream from County Trunk Highway B bridge, 3.2 mi southwest of Walworth.

DRAINAGE AREA.--9.58 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Elevation of gage is 935 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair (see page 11). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.0	1.7	1.5	1.3	1.5	1.2	1.6	1.6	1.5	1.1	0.87
2	4.6	2.0	1.7	1.5	1.3	1.5	1.2	1.5	1.5	1.5	1.1	0.85
3	2.5	2.0	1.6	1.5	1.4	1.5	1.2	1.4	1.5	1.5	7.1	0.84
4	6.6	2.0	1.7	1.5	1.4	1.5	1.2	1.4	1.5	1.5	2.0	0.79
5	5.4	2.0	1.7	1.5	1.3	1.5	1.2	2.5	1.4	2.5	1.4	0.82
6	4.2	1.8	1.6	1.5	1.4	1.6	1.2	1.8	1.5	1.6	1.2	0.80
7	3.7	1.8	1.6	1.5	1.5	1.7	1.3	1.7	1.5	1.5	1.2	0.79
8	3.1	1.8	1.5	1.5	1.5	1.7	1.2	1.9	1.5	3.7	1.2	0.79
9	2.7	1.8	1.6	1.5	1.4	1.6	1.2	4.2	1.5	2.1	1.2	0.78
10	2.4	1.8	1.7	1.5	1.4	1.4	1.2	2.6	1.4	1.7	1.1	0.78
11	2.1	1.7	1.7	1.5	1.4	1.3	1.2	2.2	1.4	1.6	1.1	0.80
12	2.2	1.8	1.7	1.5	1.4	1.2	1.4	1.9	1.4	1.5	1.1	0.86
13	2.3	1.8	1.7	1.5	1.4	1.3	1.4	1.7	1.4	1.4	1.2	0.95
14	2.5	1.7	1.7	1.5	1.5	2.3	1.3	2.3	1.5	1.3	1.2	1.0
15	2.4	1.7	1.7	1.4	1.5	1.9	1.3	2.5	1.5	27	1.2	0.94
16	2.2	1.7	1.7	1.3	1.5	1.7	1.4	2.0	1.4	2.5	1.2	0.89
17	2.2	1.7	1.7	1.3	1.5	1.4	1.4	1.8	1.4	2.1	1.1	0.88
18	2.3	1.8	1.9	1.3	1.5	1.3	1.3	1.7	1.4	1.8	1.1	0.87
19	2.2	1.8	2.1	1.3	1.6	1.2	1.3	1.7	1.4	1.6	1.1	0.90
20	2.2	1.8	1.9	1.3	1.6	1.3	1.3	2.7	1.5	1.4	1.1	0.89
21	2.0	1.8	1.8	1.3	1.5	1.3	1.4	2.0	1.6	13	1.1	0.89
22	2.0	1.7	1.7	1.3	1.5	1.3	1.3	1.8	1.7	2.3	1.1	0.96
23	1.9	1.8	1.7	1.2	1.5	1.4	1.3	1.7	1.6	2.1	1.0	0.96
24	2.0	1.7	1.7	1.2	1.5	1.4	1.3	1.5	1.6	1.7	0.85	0.96
25	2.2	1.7	1.7	1.3	1.4	1.4	1.4	1.5	1.7	1.5	0.83	0.93
26	2.1	1.7	1.7	1.3	1.5	1.3	1.5	1.4	1.9	1.3	0.86	1.0
27	2.0	1.7	1.7	1.3	1.4	1.2	1.3	1.4	1.6	1.3	0.85	0.99
28	2.0	1.7	1.6	1.3	1.5	1.3	1.2	2.2	1.6	1.2	0.84	0.99
29	2.0	1.7	1.6	1.3	---	1.2	1.2	1.6	1.5	1.2	0.83	0.97
30	2.0	1.7	1.7	1.3	---	1.2	1.3	2.3	1.5	1.1	0.84	0.97
31	2.0	---	1.5	1.3	---	1.2	---	2.0	---	1.2	0.84	---
TOTAL	81.6	53.7	52.6	43.0	40.6	44.6	38.6	60.5	45.5	89.2	39.94	26.71
MEAN	2.63	1.79	1.70	1.39	1.45	1.44	1.29	1.95	1.52	2.88	1.29	0.89
MAX	6.6	2.0	2.1	1.5	1.6	2.3	1.5	4.2	1.9	27	7.1	1.0
MIN	1.6	1.7	1.5	1.2	1.3	1.2	1.2	1.4	1.4	1.1	0.83	0.78
CFSM	0.27	0.19	0.18	0.14	0.15	0.15	0.13	0.20	0.16	0.30	0.13	0.09
IN.	0.32	0.21	0.20	0.17	0.16	0.17	0.15	0.23	0.18	0.35	0.16	0.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	2.22	2.05	1.98	2.33	4.57	3.95	3.88	3.30	8.43	2.98	2.06	2.12
MAX	3.68	3.29	4.54	5.85	13.1	12.0	12.4	6.92	17.2	6.22	4.27	4.48
(WY)	(1994)	(1993)	(1993)	(1993)	(1997)	(1993)	(1993)	(2000)	(1999)	(1993)	(1993)	(1993)
MIN	1.24	1.08	0.99	1.16	1.23	0.69	1.00	1.95	1.38	1.07	1.02	0.89
(WY)	(1996)	(1997)	(1998)	(1996)	(1995)	(1996)	(1996)	(1995)	(1995)	(1995)	(1995)	(2003)

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1992 - 2003
ANNUAL TOTAL	1,030.5	616.55	
ANNUAL MEAN	2.82	1.69	3.30
HIGHEST ANNUAL MEAN			6.41 1993
LOWEST ANNUAL MEAN			1.32 1995
HIGHEST DAILY MEAN	28 Apr 9	27 Jul 15	251 Feb 21, 1997
LOWEST DAILY MEAN	1.4 Aug 11,12	0.78 Sep 9,10	0.58 Mar 10, 1996
ANNUAL SEVEN-DAY MINIMUM	1.5 Aug 11	0.79 Sep 4	0.62 Mar 9, 1996
MAXIMUM PEAK FLOW		152 Jul 15	(a)571 Jun 13, 1999
MAXIMUM PEAK STAGE		7.10 Jul 15	(b)10.05 Jun 30, 1993
INSTANTANEOUS LOW FLOW		0.74 (c)Aug 24,28-30	0.58 (d)Mar 9, 1996
ANNUAL RUNOFF (CFSM)	0.29	0.18	0.34
ANNUAL RUNOFF (INCHES)	4.00	2.39	4.68
10 PERCENT EXCEEDS	4.2	2.1	4.7
50 PERCENT EXCEEDS	2.3	1.5	2.0
90 PERCENT EXCEEDS	1.6	1.00	1.1

(a) Gage height, 9.69 ft  
 (b) Discharge, 322 ft<sup>3</sup>/s  
 (c) Also occurred Sept. 2-11  
 (d) Also occurred Mar. 10-12, 1996

## 05527800 DES PLAINES RIVER AT RUSSELL, IL

LOCATION.--Lat 42°29'21", long 87°55'35", in SE 1/4 sec.3, T.46 N., R.11 E., Lake County, Hydrologic Unit 07120004, on right bank at upstream side of Russell Road bridge, 0.3 mi west of Russell, 7.2 mi upstream from Mill Creek, and at mile 109.3.

DRAINAGE AREA.--123 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1961-63, and annual maximum, water years 1962-66. June 1967 to current year.

REVISED RECORDS.--WDR IL-75-1: Drainage area. WDR IL-76-1: 1960-68(M), 1973(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 662.00 ft above NGVD of 1929. Oct. 17, 1961, to June 29, 1967, crest-stage gage at left downstream side of bridge at datum 4.29 ft higher.

REMARKS.--Records good except those estimated daily discharges, which are poor (see page 11). Recording rain gage and gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	17	e8.2	e14	e1.4	e1.1	49	48	87	9.2	4.1	0.91
2	14	16	e7.8	e13	e1.5	e1.2	44	86	90	8.2	17	0.68
3	30	16	e7.5	e13	e1.5	e1.2	40	106	84	5.8	20	0.50
4	26	17	e7.2	e13	e1.5	e1.4	41	109	73	4.3	38	0.40
5	48	17	e6.9	e13	e1.4	e1.9	63	144	62	4.6	49	0.29
6	48	18	e6.6	e13	e1.3	e2.4	83	183	54	11	53	0.20
7	35	21	e6.4	e13	e1.3	e3.4	88	198	48	40	50	0.15
8	22	21	e6.1	e12	e1.2	e4.2	81	200	49	70	38	0.22
9	14	14	e5.8	e11	e1.2	e5.6	73	219	57	102	29	0.33
10	9.3	16	e5.7	e10	e1.2	e7.2	84	233	58	102	21	0.05
11	7.5	23	e5.6	e9.0	e1.2	10	104	238	54	83	15	0.00
12	5.6	23	e5.6	e8.0	e1.2	12	112	237	48	65	12	0.00
13	5.2	23	e5.7	e7.0	e1.2	14	110	226	42	52	11	0.00
14	6.3	21	e5.8	e6.2	e1.2	18	96	211	37	41	8.6	0.00
15	4.0	19	e6.0	e5.4	e1.1	29	79	195	34	43	6.7	0.01
16	3.9	17	e7.0	e4.7	e1.1	41	65	175	25	59	6.0	0.05
17	4.1	16	9.2	e4.2	e1.1	56	57	153	19	71	5.2	0.01
18	3.8	16	18	e3.8	e1.1	54	52	129	15	85	4.3	0.00
19	3.4	20	31	e3.4	e1.0	40	49	106	18	72	4.0	0.00
20	3.3	21	47	e3.0	e1.0	37	53	91	22	51	2.9	0.00
21	3.5	34	51	e2.7	e1.0	51	55	84	27	38	2.2	0.00
22	3.5	26	47	e2.4	e1.1	63	52	80	24	37	1.9	0.01
23	3.9	16	38	e2.1	e1.1	59	46	71	20	25	2.1	0.00
24	4.4	12	30	e1.8	e1.1	51	40	62	15	17	2.0	0.00
25	4.9	11	24	e1.7	e1.1	51	34	55	11	12	1.6	0.00
26	8.9	11	20	e1.5	e1.0	55	30	47	9.4	9.1	1.5	0.06
27	13	12	18	e1.4	e1.1	54	27	41	10	7.6	1.4	0.11
28	13	11	16	e1.3	e1.1	52	24	37	7.9	6.6	1.2	0.07
29	15	e9.8	15	e1.3	---	57	21	41	7.6	5.5	1.5	0.09
30	17	e9.0	e15	e1.4	---	59	22	57	8.4	4.6	2.6	0.12
31	17	---	e14	e1.4	---	54	---	76	---	3.9	1.3	---
TOTAL	403.7	523.8	497.1	198.7	33.3	946.6	1,774	3,938	1,116.3	1,145.4	414.1	4.26
MEAN	13.0	17.5	16.0	6.41	1.19	30.5	59.1	127	37.2	36.9	13.4	0.14
MAX	48	34	51	14	1.5	63	112	238	90	102	53	0.91
MIN	3.3	9.0	5.6	1.3	1.0	1.1	21	37	7.6	3.9	1.2	0.00
CFSM	0.11	0.14	0.13	0.05	0.01	0.25	0.48	1.03	0.30	0.30	0.11	0.00
IN.	0.12	0.16	0.15	0.06	0.01	0.29	0.54	1.19	0.34	0.35	0.13	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)	MEAN	MAX	(WY)	MIN	(WY)
	42.7	364	(1987)	0.056	(1995)	68.3	390	(1986)	1.60	(2000)	85.4	382	(1983)	3.06	(1977)	67.4	279	(1993)	1.46	(1977)
	205	673	(1979)	14.9	(1968)	107	327	(1974)	1.19	(2003)	222	718	(1993)	33.4	(1977)	205	673	(1979)	14.9	(1968)
	127	410	(1996)	6.15	(1977)	104	642	(2000)	1.90	(1988)	52.6	363	(1978)	0.78	(1988)	39.2	417	(1978)	0.23	(1999)
	104	642	(2000)	1.90	(1988)	52.6	363	(1978)	0.78	(1988)	39.2	417	(1978)	0.23	(1999)	52.1	410	(1972)	0.060	(1994)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1967 - 2003
ANNUAL TOTAL	22,807.81	10,995.26	
ANNUAL MEAN	62.5	30.1	97.7
HIGHEST ANNUAL MEAN			206
LOWEST ANNUAL MEAN			9.24
HIGHEST DAILY MEAN	513	238	2,100
LOWEST DAILY MEAN	0.57	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	1.2	0.00	0.00
MAXIMUM PEAK FLOW		241	(c)2,130
MAXIMUM PEAK STAGE		5.34	10.75
ANNUAL RUNOFF (CFSM)	0.51	0.24	0.79
ANNUAL RUNOFF (INCHES)	6.90	3.33	10.79
10 PERCENT EXCEEDS	163	79	269
50 PERCENT EXCEEDS	22	13	34
90 PERCENT EXCEEDS	3.1	1.1	2.8

(a) Several days

(b) At times in most years

(c) Gage height, 9.95 ft

(d) March 6, 1976, Sept. 27, 1986

(e) Estimated due to ice effect or missing record

## 05543830 FOX RIVER AT WAUKESHA, WI

LOCATION.--Lat 43°00'17", long 88°14'37", in SW ¼ SW ¼ (revised) sec.3, T.6 N., R.19 E., Waukesha County, Hydrologic Unit 07120006, on left bank 20 ft downstream from Prairie Street bridge in Waukesha, 1.0 mi downstream from dam and 3.2 mi downstream from Pewaukee River.

DRAINAGE AREA.--126 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 793.04 ft above NGVD of 1929 (levels by City of Waukesha).

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). There is occasional regulation from mill dam 1.0 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	70	41	36	27	24	68	251	107	38	41	19
2	164	68	50	41	29	25	62	247	90	37	35	20
3	150	62	46	44	32	26	57	187	90	34	33	22
4	159	61	42	38	32	26	65	144	82	33	34	23
5	169	63	39	41	e29	26	83	217	63	45	39	23
6	134	65	40	42	e28	28	86	224	55	62	41	21
7	107	62	39	43	e27	28	81	192	54	81	45	19
8	89	61	38	45	e26	27	76	195	142	89	43	20
9	79	58	35	45	e25	26	82	313	169	79	37	19
10	68	58	36	38	e25	28	100	343	130	79	35	22
11	61	65	38	36	e24	31	129	383	111	79	31	23
12	55	63	37	34	e23	30	127	418	100	74	29	31
13	54	62	41	33	e23	31	105	385	87	64	28	38
14	54	60	42	31	e23	39	90	326	75	56	26	56
15	77	56	43	e29	23	62	87	283	65	112	26	52
16	83	51	44	e27	23	102	81	245	56	69	24	37
17	61	49	40	e25	24	108	71	195	52	48	22	31
18	59	54	67	e23	25	101	66	158	51	43	22	31
19	64	62	89	e22	25	90	82	142	51	39	22	25
20	59	65	75	e21	25	91	93	179	48	34	23	21
21	54	69	57	e20	26	96	95	154	44	34	23	20
22	71	71	46	e19	26	85	91	132	39	32	22	24
23	82	62	45	e19	27	74	75	101	38	31	20	24
24	82	58	45	e20	28	71	66	82	38	26	18	23
25	104	56	42	e21	25	72	59	75	46	25	21	23
26	111	52	40	e21	25	67	55	67	46	26	23	25
27	101	53	39	22	26	61	55	64	48	27	20	25
28	92	45	37	23	26	68	53	66	67	26	19	23
29	84	46	38	24	---	81	50	70	55	25	21	22
30	76	46	40	26	---	71	70	78	44	31	19	22
31	71	---	43	29	---	67	---	119	---	43	18	---
TOTAL	2,747	1,773	1,394	938	727	1,762	2,360	6,035	2,143	1,521	860	784
MEAN	88.6	59.1	45.0	30.3	26.0	56.8	78.7	195	71.4	49.1	27.7	26.1
MAX	169	71	89	45	32	108	129	418	169	112	45	56
MIN	54	45	35	19	23	24	50	64	38	25	18	19
CFSM	0.70	0.47	0.36	0.24	0.21	0.45	0.62	1.55	0.57	0.39	0.22	0.21
IN.	0.81	0.52	0.41	0.28	0.21	0.52	0.70	1.78	0.63	0.45	0.25	0.23

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

MEAN	76.0	81.6	80.6	65.3	96.4	185	208	136	105	80.4	66.2	76.8
MAX	346	303	207	188	247	451	598	384	370	271	217	385
(WY)	(1987)	(1986)	(1992)	(1973)	(2001)	(1974)	(1993)	(2000)	(1996)	(1993)	(1998)	(1986)
MIN	6.44	8.14	4.80	6.35	6.26	22.5	53.4	26.6	19.0	9.33	8.23	6.44
(WY)	(1964)	(1964)	(1964)	(1964)	(1964)	(1968)	(1963)	(1977)	(1964)	(1963)	(1963)	(1963)

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1963 - 2003
ANNUAL TOTAL	37,134	23,044	
ANNUAL MEAN	102	63.1	106
HIGHEST ANNUAL MEAN			193
LOWEST ANNUAL MEAN			31.6
HIGHEST DAILY MEAN	573	Aug 14	2,160
LOWEST DAILY MEAN	24	Jul 25	18
ANNUAL SEVEN-DAY MINIMUM	28	Jul 19	19
MAXIMUM PEAK FLOW			497
MAXIMUM PEAK STAGE			4.61
ANNUAL RUNOFF (CFSM)	0.81	0.50	0.84
ANNUAL RUNOFF (INCHES)	10.96	6.80	11.46
10 PERCENT EXCEEDS	192	109	235
50 PERCENT EXCEEDS	71	46	67
90 PERCENT EXCEEDS	39	23	21

(a) Ice affected

(b) Also occurred Jan. 1, 1964

(c) Estimated due to ice effect or missing record

## 05544200 MUKWONAGO RIVER AT MUKWONAGO, WI

LOCATION.--Lat 42°51'24", long 88°19'40", in NE ¼ NE ¼ sec.35, T.5 N., R.18 E., Waukesha County, Hydrologic Unit 07120006, on left bank 100 ft upstream from bridge on State Highway 83 in Mukwonago, 100 ft downstream from railroad bridge, and 800 ft downstream from dam.

DRAINAGE AREA.--74.1 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1973 to current year.

REVISED RECORDS.--WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 779.23 ft above NGVD of 1929 (Southeastern Wisconsin Regional Planning Commission bench mark). Prior to Oct. 19, 1981, at datum 0.85 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair (see page 11). Discharge affected by manipulation of gates at dams 800 ft and 11.4 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	30	42	26	32	20	36	83	56	17	21	8.9
2	75	48	40	27	31	16	35	80	37	16	20	8.8
3	79	53	39	29	31	19	34	77	36	15	20	9.4
4	89	39	29	30	40	21	37	52	26	14	21	8.6
5	63	35	26	31	41	25	42	55	21	20	21	8.4
6	50	36	27	31	38	26	42	65	20	23	20	8.4
7	52	36	28	e31	36	27	44	64	21	27	20	8.2
8	43	36	28	e32	28	54	64	28	50	20	20	8.2
9	39	36	29	50	e31	28	61	73	50	68	20	8.3
10	27	36	30	58	28	33	33	79	76	67	19	8.4
11	24	37	30	e57	24	38	28	130	78	55	18	8.4
12	30	37	30	53	e24	36	35	145	50	41	17	9.3
13	51	37	31	48	e25	35	37	71	17	39	16	11
14	55	37	31	44	e25	43	52	48	18	23	15	14
15	30	37	31	23	e25	54	57	50	18	53	15	16
16	20	37	31	16	26	60	34	51	18	42	14	15
17	23	37	31	18	26	48	26	53	17	26	15	14
18	39	37	52	e19	26	42	27	51	17	29	14	14
19	57	38	60	e19	26	43	40	50	17	30	14	15
20	41	36	58	e19	31	49	43	51	16	31	14	13
21	26	36	57	e19	33	63	41	50	16	29	13	13
22	24	35	58	e19	e34	68	40	49	15	26	12	14
23	26	34	58	e16	e33	64	38	46	14	27	11	14
24	28	33	57	e16	e32	46	26	40	14	26	11	14
25	61	32	53	e15	e29	30	21	35	15	24	11	13
26	57	23	36	e15	30	27	22	22	22	22	11	13
27	48	21	29	e15	30	29	23	17	23	20	10	14
28	35	25	30	e16	29	55	23	19	37	19	9.5	14
29	23	41	23	e40	---	74	22	22	44	18	9.7	13
30	24	46	23	35	---	69	46	42	25	18	9.1	13
31	27	---	25	31	---	44	---	71	---	18	9.0	---
TOTAL	1,322	1,081	1,152	898	848	1,260	1,099	1,805	862	933	470.3	350.3
MEAN	42.6	36.0	37.2	29.0	30.3	40.6	36.6	58.2	28.7	30.1	15.2	11.7
MAX	89	53	60	58	41	74	61	145	78	68	21	16
MIN	20	21	23	15	24	16	21	17	14	14	9.0	8.2
CFSM	0.58	0.49	0.50	0.39	0.41	0.55	0.49	0.79	0.39	0.41	0.20	0.16
IN.	0.66	0.54	0.58	0.45	0.43	0.63	0.55	0.91	0.43	0.47	0.24	0.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
	48.4	98.7	(1987)	19.0	(1998)
	55.2	110	(1986)	29.2	(1977)
	52.9	83.7	(1983)	26.2	(1990)
	45.6	77.8	(1974)	22.8	(1977)
	54.1	83.8	(1974)	30.3	(2003)
	72.9	151	(1974)	40.6	(2003)
	76.1	150	(1993)	36.6	(2003)
	63.2	155	(1975)	16.9	(1977)
	53.5	138	(1975)	14.4	(1988)
	41.8	80.8	(1993)	13.3	(1988)
	44.4	83.5	(1979)	15.2	(2003)
	45.6	88.7	(1986)	11.7	(2003)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1973 - 2003	
ANNUAL TOTAL	17,566.7		12,080.6			
ANNUAL MEAN	48.1		33.1		54.3	
HIGHEST ANNUAL MEAN					90.3	
LOWEST ANNUAL MEAN					30.8	
HIGHEST DAILY MEAN	168	Apr 10	145	May 12	275	Mar 6, 1974
LOWEST DAILY MEAN	9.2	Jul 17	8.2	Sep 7,8	1.8	Dec 23, 1975
ANNUAL SEVEN-DAY MINIMUM	10	Jul 17	8.3	Sep 5	6.8	Oct 31, 1988
MAXIMUM PEAK FLOW			170	May 11	(a)300	Mar 5, 1976
MAXIMUM PEAK STAGE			3.22	May 11	3.55	Sep 29, 1986
ANNUAL RUNOFF (CFSM)	0.65		0.45		0.73	
ANNUAL RUNOFF (INCHES)	8.82		6.06		9.96	
10 PERCENT EXCEEDS	79		57		99	
50 PERCENT EXCEEDS	43		30		46	
90 PERCENT EXCEEDS	23		14		21	

(a) Gage height, 2.50 ft, datum then in use

(e) Estimated due to ice effect or missing record



## 05544371 JEWEL CREEK AT MUSKEGO, WI

LOCATION.--Lat 42°55'37", long 88°08'45", in NW ¼ NW ¼ sec.4, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, on right bank 0.4 mi downstream from County Trunk Highway HH, and 0.3 mi upstream from Little Muskego Lake.

DRAINAGE AREA.--8.16 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1999 to current year.

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).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	1.7	1.8	1.9	1.8	1.6	4.0	35	4.9	1.4	1.2	1.0
2	5.4	1.8	1.7	1.9	1.8	1.6	3.8	12	3.9	1.4	1.1	1.0
3	5.4	1.8	1.6	1.9	1.9	1.5	3.4	6.6	3.3	1.4	1.1	1.0
4	5.8	1.8	1.6	1.8	1.8	1.6	4.3	5.6	2.7	1.3	1.2	1.0
5	6.8	1.9	1.6	1.9	1.7	1.6	5.2	25	2.4	1.4	1.3	e0.90
6	3.1	2.0	1.6	1.8	1.7	1.5	4.7	12	2.1	4.1	2.4	e1.0
7	2.5	2.2	1.6	1.9	1.6	1.5	4.4	19	2.1	4.4	3.6	e1.0
8	2.4	2.1	1.5	2.0	1.7	1.6	4.0	20	7.2	4.3	1.5	e1.0
9	5.8	2.0	1.5	2.0	1.6	1.5	5.5	50	4.9	4.2	1.3	1.1
10	1.5	1.9	1.6	1.9	1.6	1.5	10	18	3.5	2.0	1.2	1.1
11	1.9	2.2	1.7	1.7	1.6	1.5	8.7	20	2.6	1.7	1.2	1.1
12	2.2	2.4	1.6	1.7	1.6	1.5	5.4	23	2.2	1.5	1.2	1.1
13	2.2	2.2	1.7	1.7	1.5	1.7	4.5	12	1.9	1.5	1.2	1.2
14	2.5	2.0	1.7	1.7	1.5	3.1	4.0	9.2	1.7	1.4	1.2	2.1
15	2.4	2.0	1.8	1.6	1.6	15	4.1	8.9	1.6	12	1.2	1.7
16	2.1	2.0	1.7	1.7	1.6	9.3	3.6	7.0	1.6	3.2	1.1	1.2
17	2.1	2.0	1.7	1.7	1.6	5.1	3.2	6.2	1.4	1.5	1.1	1.1
18	2.3	2.0	4.3	1.7	1.6	4.1	2.8	5.5	1.4	1.5	1.1	1.1
19	2.2	2.2	5.5	1.8	1.6	3.5	3.4	5.3	1.5	1.4	1.1	1.1
20	2.2	2.2	3.9	1.7	1.8	4.3	4.3	6.7	1.4	1.3	1.1	1.1
21	2.3	2.3	3.1	1.6	1.8	4.0	3.8	5.5	1.4	1.3	e1.1	1.1
22	2.1	2.3	2.5	1.6	1.8	3.1	3.2	4.8	1.4	1.3	e1.0	1.2
23	2.0	2.0	2.1	1.6	1.7	3.1	2.6	4.3	1.4	1.3	e1.0	1.2
24	2.0	2.0	2.0	1.6	1.7	3.1	2.3	3.8	1.4	1.2	e1.0	1.1
25	2.6	1.9	1.9	1.7	1.6	3.2	2.1	3.1	1.3	1.2	e1.0	e1.0
26	2.6	1.8	1.9	1.7	1.6	3.4	1.9	2.5	1.5	1.2	e1.1	e1.1
27	2.1	1.8	1.9	1.6	1.6	3.7	1.9	2.2	1.5	1.2	e1.1	1.1
28	2.0	1.8	1.9	1.6	1.6	4.9	1.9	3.0	2.6	1.2	1.0	1.2
29	4.7	1.8	1.9	1.7	---	5.5	1.8	4.1	2.4	1.2	1.1	e1.1
30	2.1	1.9	2.0	1.7	---	4.3	3.6	3.8	1.5	1.2	1.0	e1.1
31	1.9	---	2.0	1.7	---	3.9	---	8.6	---	1.2	1.0	---
TOTAL	90.0	60.0	64.9	54.1	46.6	106.8	118.4	352.7	70.7	66.4	38.8	34.10
MEAN	2.90	2.00	2.09	1.75	1.66	3.45	3.95	11.4	2.36	2.14	1.25	1.14
MAX	6.8	2.4	5.5	2.0	1.9	15	10	50	7.2	12	3.6	2.1
MIN	1.5	1.7	1.5	1.6	1.5	1.5	1.8	2.2	1.3	1.2	1.0	0.90

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

MEAN	4.45	3.82	3.57	3.64	8.35	7.23	10.5	11.1	10.7	5.54	5.16	5.73
MAX	8.18	6.19	4.87	6.89	18.4	12.5	16.4	16.1	19.7	14.6	9.15	12.6
(WY)	(2002)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2000)	(1999)	(2000)	(2000)	(2000)
MIN	2.62	2.00	2.09	1.75	1.66	3.45	3.95	6.21	2.36	1.80	1.25	1.14
(WY)	(2000)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2003)	(2003)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1999 - 2003

ANNUAL TOTAL	1,961.6	1,103.50	
ANNUAL MEAN	5.37	3.02	6.52
HIGHEST ANNUAL MEAN			9.01
LOWEST ANNUAL MEAN			3.02
HIGHEST DAILY MEAN		50	187
LOWEST DAILY MEAN	(e)1.0	Apr 9	May 9
ANNUAL SEVEN-DAY MINIMUM	(e)1.2	Aug 11	Sep 5
MAXIMUM PEAK FLOW		0.99	0.98
MAXIMUM PEAK STAGE		137	372
INSTANTANEOUS LOW FLOW		4.38	5.59
10 PERCENT EXCEEDS	8.5	5.3	12
50 PERCENT EXCEEDS	2.7	1.8	3.8
90 PERCENT EXCEEDS	1.6	1.1	1.5

(a) Also occurred Apr. 7, 8, result of dam construction upstream

(e) Estimated due to ice effect or missing record

05544371 JEWEL CREEK AT MUSKEGO, WI—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1999 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: June 1999 to current year.

TOTAL-PHOSPHORUS DISCHARGE: June 1999 to current year.

INSTRUMENTATION.--Stage-activated water-quality sampler.

REMARKS.--Chemical analyses are done by the Wisconsin State Laboratory of Hygiene.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 171 tons, June 13, 1999; minimum daily, 0.02 ton, Dec. 2-17, 2002, and Sept. 5, 25, 2003.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 428 lb, July 3, 2000; minimum daily, 0.11 lb, Feb. 13-16, 28, and Mar. 1, 3, 4, 6-12, 2003.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 8.3 tons, May 9; minimum daily, 0.02 ton, Dec. 2-17, and Sept. 5, 25.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 33.7 lb, May 9; minimum daily, 0.11 lb, Feb. 13-16, 28, and Mar. 1, 3, 4, 6-12.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Phos- phorus, water, unfltrd mg/L (00665)	Sus- pended sedi- ment concen- tration mg/L (80154)
OCT 2002					
09...	1515	126	50	--	713
09...	1600	13	50	--	124
29...	1845	12	50	0.068	66
NOV					
05...	1240	1.9	50	0.025	12
DEC					
10...	1110	1.5	70	0.014	4
JAN 2003					
21...	1045	1.6	70	0.014	18
MAR					
26...	1150	3.7	50	0.062	47
26...	1245	3.9	50	0.048	16
APR					
10...	1845	15	50	0.035	23
11...	0130	12	50	0.033	17
MAY					
01...	0100	28	50	0.232	149
01...	0415	47	50	0.149	77
01...	0730	48	50	0.129	54
01...	1045	45	50	0.095	33
01...	2030	21	50	0.106	45
02...	0615	15	50	0.141	90
05...	0030	8.2	50	0.063	21
05...	0345	24	50	0.063	28
05...	0700	32	50	0.064	27
05...	1330	29	50	0.088	36
05...	2000	19	50	0.079	27
06...	0545	13	50	0.060	51
06...	1000	15	50	0.061	18
07...	1715	29	50	0.059	19
07...	2030	37	50	0.071	32
07...	2345	35	50	0.065	34
08...	0615	23	50	0.088	32
09...	0445	51	50	0.086	34
09...	0800	70	50	0.134	72
09...	1115	74	50	0.118	53
09...	1745	46	50	0.153	87
10...	0330	22	50	0.121	47
11...	2200	32	50	0.107	41
12...	0115	34	50	0.080	51
12...	0430	31	50	0.077	33
14...	1045	9.1	50	0.051	62
JUN					
12...	1025	2.2	70	0.079	35
JUL					
15...	0445	25	70	0.219	106
AUG					
27...	1200	1.1	70	0.074	9





## 05544385 MUSKEGO (BIG MUSKEGO) LAKE OUTLET NEAR WIND LAKE, WI

LOCATION.--Lat 42°51'09", long 88°07'50", in SE ¼ NE ¼ sec.33, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, on right bank at dam outlet of Muskego Lake, 700 ft north of Muskego Dam Drive, 2 mi northeast of Wind Lake.

DRAINAGE AREA.--33.9 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1987 to September 1989, October 1995 to current year. Prior to October 1996, published under station number 425109088075000. Prior to October 2000 published as "Muskego Lake Outlet near Wind Lake".

GAGE.--Water-stage recorder. Datum of gage is 760.00 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 18, 1987, nonrecording gage at same site and datum, October 1989 to September 1995, nonrecording gage at same datum.

REMARKS.--Flows for the water year were based on upstream-stage/downstream-stage-discharge ratings for flow through the variably-opened gate or upstream-stage-discharge rating for the dam crest or combination of gate and crest overflow. Records good except for estimated daily discharges, which are fair to poor (see page 11).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.0	e59	e0.6	1.8	e0.0	e0.0	7.1	11.5	3.7	3.5	3.3	3.3
2	0.0	e42	e0.6	1.8	e0.0	e0.0	16.3	17.6	3.7	3.5	3.3	3.3
3	0.0	e28	e0.6	1.5	e0.0	e0.0	14.9	5.5	3.7	3.4	3.3	3.3
4	0.0	e14	e0.6	1.3	e0.0	0.9	18	4.2	3.7	3.4	3.3	3.3
5	0.0	e5.3	e0.6	1.7	e0.0	1.8	7.4	10.3	3.7	3.4	3.3	3.3
6	0.0	0.9	e0.6	1.7	e0.0	1.8	12.1	13.4	3.7	3.4	3.3	3.3
7	0.0	0.4	e0.6	1.7	e0.0	1.8	23.6	21.7	3.7	3.4	3.3	3.3
8	0.0	0.2	e0.6	1.7	e0.0	2	12.2	36.5	3.7	3.4	3.4	3.3
9	0.0	0.3	e0.6	1.5	e0.0	2.3	5.4	59	3.7	3.4	3.3	3.3
10	0.0	1	0.6	1.2	e0.0	2.2	5.4	68.6	3.7	3.4	3.3	3.3
11	0.0	2.6	0.6	e0.0	e0.0	2.2	9.4	46.7	3.8	3.4	3.4	3.2
12	0.0	0.7	0.6	e0.0	e0.0	1.9	12.9	71.7	3.8	3.4	3.4	3.2
13	0.0	0.7	0.6	e0.0	e0.0	2.2	5.6	65.5	3.7	3.4	3.3	3.3
14	0.0	1.8	0.6	e0.0	e0.0	2	2.2	62.2	3.7	3.3	3.3	3.3
15	0.0	3.5	0.7	e0.0	e0.0	2.3	1.6	61.8	3.7	3.3	3.3	3.3
16	0.0	1.8	0.6	e0.0	e0.0	2.7	26.2	56	3.7	3.3	3.3	3.3
17	0.0	0.7	0.6	e0.0	e0.0	3	10.1	53.9	3.7	3.3	3.3	3.3
18	0.0	11.2	2	e0.0	e0.0	3.3	5	47.2	3.7	3.4	3.3	3.3
19	0.0	0.4	3	e0.0	e0.0	4.1	2.7	42.4	3.7	3.3	3.3	3.3
20	0.0	0.7	3.2	e0.0	e0.0	5.8	0.7	43.6	3.7	3.3	e3.3	3.3
21	0.0	3.7	2.3	e0.0	e0.0	5.7	4.2	40.9	3.6	3.3	e3.3	3.3
22	0.0	1.8	2	e0.0	e0.0	6.5	5.1	39.4	3.6	3.3	e3.3	3.2
23	0.0	0.3	1.7	e0.0	e0.0	6	3.2	38.7	3.6	3.3	e3.3	3.2
24	0.0	0.6	1.8	e0.0	e0.0	5.1	2.9	38.5	3.5	3.3	e3.3	3.2
25	0.0	0.6	1.8	e0.0	e0.0	6.3	9.8	37.8	3.5	3.2	e3.3	3.3
26	0.0	e0.6	1.4	e0.0	e0.0	6.3	2.3	37.7	3.5	3.2	e3.3	3.2
27	0.0	e0.6	1.3	e0.0	e0.0	7.6	0.3	5.9	3.5	3.3	e3.3	3.2
28	17	e0.6	1.3	e0.0	e0.0	5.1	0.5	3.7	3.5	3.3	3.3	3.3
29	70.3	e0.6	1.4	e0.0	---	8.4	0.8	3.7	3.5	3.2	3.3	3.3
30	74.9	e0.6	1.5	e0.0	---	6	2.5	3.7	3.5	3.2	3.3	3.3
31	e74	---	1.4	e0.0	---	5.4	---	4.3	---	3.2	3.3	---
TOTAL	236.2	185.20	36.40	15.90	0.00	110.70	230.4	1,053.6	109.5	103.4	102.6	98.3
MEAN	7.62	6.17	1.17	0.51	0.000	3.57	7.68	34.0	3.65	3.34	3.31	3.28
MAX	75	59	3.2	1.8	0.00	8.4	26	72	3.8	3.5	3.4	3.3
MIN	0.00	0.20	0.60	0.00	0.00	0.00	0.30	3.7	3.5	3.2	3.3	3.2
CFSM	0.22	0.18	0.03	0.02	0.00	0.11	0.23	1.00	0.11	0.10	0.10	0.10
IN.	0.26	0.20	0.04	0.02	0.00	0.12	0.25	1.16	0.12	0.11	0.11	0.11

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2003, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	15.7	12.9	12.5	17.1	36.5	25.0	29.2	24.7	27.2	8.12	4.03	7.12				
MAX	44.2	45.6	44.2	43.9	88.6	51.8	55.6	69.7	69.7	39.6	14.8	32.0				
(WY)	(1986)	(1996)	(1988)	(1988)	(2001)	(2001)	(1999)	(2000)	(1999)	(2000)	(1998)	(2000)				
MIN	0.000	0.001	0.46	0.51	0.000	3.57	0.000	0.008	0.003	0.000	0.000	0.000				
(WY)	(1989)	(2000)	(2001)	(2003)	(2003)	(2003)	(1997)	(1997)	(1989)	(1988)	(1988)	(1988)				

## SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1988 - 2003	
ANNUAL TOTAL	4,283.20		2,282.20			
ANNUAL MEAN	11.7		6.25		18.3	
HIGHEST ANNUAL MEAN					28.3	
LOWEST ANNUAL MEAN					6.25	
HIGHEST DAILY MEAN	91	Apr 10	75	Oct 30	198	Jun 15, 1999
LOWEST DAILY MEAN	0.00	Many days	0.00	(a)Oct 1	0.00	Many days
ANNUAL SEVEN-DAY MINIMUM	0.00	Many periods	0.00	Oct 1	0.00	Many periods
ANNUAL RUNOFF (CFSM)	0.35		0.18		0.54	
ANNUAL RUNOFF (INCHES)	4.70		2.50		7.33	
10 PERCENT EXCEEDS	38		12		53	
50 PERCENT EXCEEDS	5.0		3.3		7.2	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

(a) Also occurred Oct. 2-27, and Jan. 11 to Mar. 3

(e) Estimated due to ice effect or missing record

## 423525088260400 GENEVA LAKE AT LAKE GENEVA, WI

LOCATION.--Lat 42°35'25", long 88°26'04" in SE ¼ NW ¼ sec.36, T.2 N., R.17 E., Walworth County, Hydrologic Unit 07120006, at Geneva Lake dam at Center Street at Lake Geneva.

DRAINAGE AREA.--28.7 mi<sup>2</sup>. Area of Lake Geneva, 5,262 acres.

PERIOD OF RECORD.--October 1997 to August 2002, December 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 862.08 ft above NGVD of 1929. Intermittent staff-gage readings October to March.

REMARKS.--Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 3.29 ft, June 13, 2000; minimum gage height, 1.66 ft, Apr. 9, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 3.11 ft, May 9 (affected by wind); minimum gage height, 1.72 ft, Sept. 30.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.30	2.15	---	---	---	---	2.36	2.52	2.58	2.41	2.37	2.06
2	2.42	---	---	---	---	---	2.35	2.52	2.56	2.40	2.37	2.05
3	---	---	---	---	---	---	2.35	2.52	2.56	2.41	2.40	2.05
4	---	---	---	---	---	---	2.37	2.51	2.54	2.40	2.41	2.01
5	---	---	---	---	---	---	2.41	2.60	2.53	2.45	2.40	2.00
6	---	---	---	---	---	---	2.39	2.60	2.52	2.46	2.39	1.99
7	---	---	---	---	---	---	2.39	2.59	2.52	2.48	2.39	1.97
8	---	---	---	---	---	---	2.42	2.59	2.58	2.49	2.37	1.96
9	---	---	---	---	---	---	2.42	2.66	2.57	2.49	2.36	1.96
10	---	---	---	e1.86	---	---	2.42	2.66	2.57	2.51	2.35	1.95
11	---	---	2.08	---	---	---	e2.43	2.73	2.54	2.49	2.34	1.94
12	---	---	---	---	---	---	e2.43	2.67	2.53	2.47	2.32	1.96
13	---	---	2.03	---	---	---	e2.42	2.64	2.52	2.46	2.31	2.01
14	---	---	---	---	---	---	e2.42	2.65	2.51	2.45	2.30	2.03
15	2.34	---	---	---	---	---	e2.42	2.66	2.50	2.56	2.31	2.02
16	---	---	---	---	---	---	e2.41	2.65	2.49	2.57	2.31	2.00
17	---	---	---	---	---	---	e2.41	2.63	e2.49	2.55	2.29	1.98
18	2.31	---	---	---	---	e2.17	2.42	2.62	2.50	2.50	2.28	1.96
19	---	---	---	---	---	---	2.43	2.62	2.48	2.49	2.27	1.96
20	---	2.12	---	---	---	---	2.48	2.66	2.47	2.49	2.27	1.92
21	---	---	---	---	---	---	2.47	2.63	2.46	2.49	2.26	1.91
22	---	---	---	---	---	---	2.46	2.61	2.46	2.46	2.23	1.93
23	---	---	---	---	---	---	2.45	2.60	2.45	2.44	2.21	1.91
24	2.26	---	e2.02	---	---	---	2.44	2.59	2.45	2.43	2.22	1.88
25	---	---	2.01	---	---	e2.30	2.43	2.57	2.45	2.43	2.19	1.86
26	---	---	2.00	---	---	2.29	2.43	2.56	2.48	2.42	2.18	1.85
27	---	---	1.98	---	---	2.29	2.44	2.54	2.45	2.38	2.16	1.86
28	---	---	1.97	---	---	2.33	2.43	2.56	2.42	2.36	2.15	1.82
29	---	---	1.95	e1.88	---	2.35	2.42	2.59	2.43	2.36	2.13	1.81
30	2.20	---	1.95	---	---	2.35	2.44	2.59	2.41	2.37	2.10	1.79
31	---	---	1.94	---	---	2.35	---	2.59	---	2.37	2.09	---
MEAN	---	---	---	---	---	---	2.42	2.60	2.50	2.45	2.28	1.95
MAX	---	---	---	---	---	---	2.48	2.73	2.58	2.57	2.41	2.06
MIN	---	---	---	---	---	---	2.35	2.51	2.41	2.36	2.09	1.79

(e) Estimated due to ice effect or missing record

## 055451345 WHITE RIVER AT CENTER STREET AT LAKE GENEVA, WI

LOCATION.--Lat 42°35'26", long 88°26'01", in SE 1/4 NW 1/4 sec.36, T.2 N., R.17 E., Walworth County, Hydrologic Unit 07120006, on left bank at downstream end of Center Street culvert crossing at Lake Geneva.

DRAINAGE AREA.--28.7 mi<sup>2</sup>.

## Water-Discharge Records

PERIOD OF RECORD.--October 1997 to August 12, 2002, December 24, 2002 to September 2003.

GAGE.--Water-stage recorder. Elevation of gage is 848.22 ft above NGVD of 1929.

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	38	0.70	e0.58	2.2	35	33	4.7	3.2	0.31
2	---	---	---	36	0.66	e0.56	2.0	31	29	4.3	3.8	0.31
3	---	---	---	36	0.66	e0.50	6.3	28	29	5.2	6.2	0.30
4	---	---	---	35	0.66	e0.50	7.4	28	26	5.2	7.4	0.28
5	---	---	---	35	e0.64	e0.50	7.5	55	24	11	4.9	0.28
6	---	---	---	37	e0.62	e0.50	3.7	54	22	14	3.5	0.26
7	---	---	---	37	e0.60	e0.50	3.8	51	22	16	4.2	0.25
8	---	---	---	36	e0.60	e0.50	6.3	52	35	17	3.1	0.25
9	---	---	---	13	e0.60	e0.50	7.0	53	33	17	1.7	0.23
10	---	---	---	1.1	e0.58	e0.50	7.5	49	32	20	1.3	0.23
11	---	---	---	1.2	e0.54	0.51	e8.2	75	25	18	0.60	0.23
12	---	---	---	1.00	e0.54	0.52	e8.2	55	23	13	0.31	0.29
13	---	---	---	0.98	e0.54	0.52	e8.2	46	23	12	0.28	0.16
14	---	---	---	0.98	e0.54	0.54	e8.2	49	22	11	0.27	0.16
15	---	---	---	0.99	0.56	0.53	e8.0	52	20	33	0.30	0.13
16	---	---	---	0.96	e0.54	0.54	e8.0	49	18	32	0.32	0.13
17	---	---	---	0.98	e0.54	0.56	e8.0	45	e17	28	0.32	0.14
18	---	---	---	0.99	0.56	0.50	8.9	42	17	20	0.29	0.13
19	---	---	---	1.0	0.56	0.50	16	42	13	19	0.34	0.13
20	---	---	---	0.99	0.56	0.48	24	53	12	18	0.33	0.13
21	---	---	---	e0.98	0.56	0.39	20	44	12	19	0.34	0.12
22	---	---	---	e0.90	0.54	0.38	16	40	12	15	0.31	0.14
23	---	---	---	e0.80	0.52	0.38	14	36	11	11	0.31	0.13
24	---	---	e36	e0.76	e0.50	0.37	10	33	10	10	0.28	0.11
25	---	---	36	e0.74	e0.50	0.31	9.0	29	11	9.4	0.26	0.08
26	---	---	37	e0.74	e0.50	0.26	9.5	26	14	9.1	0.28	0.07
27	---	---	39	e0.70	e0.50	0.58	11	26	9.0	4.2	0.27	0.06
28	---	---	38	e0.74	e0.54	1.3	11	32	7.1	2.7	0.26	0.06
29	---	---	36	e0.80	---	1.0	10	38	6.6	2.0	0.27	0.06
30	---	---	37	e0.68	---	1.1	15	38	5.3	3.1	0.29	0.06
31	---	---	38	e0.70	---	1.6	---	36	---	3.3	0.29	---
TOTAL	---	---	297	322.71	15.96	18.01	284.9	1,322	573.0	407.2	45.82	5.22
MEAN	---	---	37.1	10.4	0.57	0.58	9.50	42.6	19.1	13.1	1.48	0.17
MAX	---	---	39	38	0.70	1.6	24	75	35	33	7.4	0.31
MIN	---	---	36	0.68	0.50	0.26	2.0	26	5.3	2.0	0.26	0.06
CFSM	---	---	1.29	0.36	0.02	0.02	0.33	1.49	0.67	0.46	0.05	0.01
IN.	---	---	0.38	0.42	0.02	0.02	0.37	1.71	0.74	0.53	0.06	0.01

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

MEAN	6.00	7.90	20.6	28.4	35.9	21.1	30.1	53.3	75.6	21.6	4.16	7.08
MAX	18.9	21.3	37.1	50.7	64.2	61.8	47.6	79.8	127	51.0	10.8	26.4
(WY)	(2002)	(2002)	(2003)	(2001)	(1999)	(2001)	(2002)	(1999)	(1999)	(2000)	(2001)	(2001)
MIN	0.81	0.17	0.46	10.4	0.57	0.58	9.50	32.7	19.1	5.44	0.077	0.17
(WY)	(2000)	(1998)	(2000)	(2003)	(2003)	(2003)	(2003)	(2001)	(2003)	(2002)	(2002)	(2003)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR  
(DECEMBER-SEPTEMBER)

## WATER YEARS 1998 - 2003

ANNUAL TOTAL	6,174.37	3,291.82	
ANNUAL MEAN	26.6	11.7	26.9
HIGHEST ANNUAL MEAN			34.5
LOWEST ANNUAL MEAN			11.7
HIGHEST DAILY MEAN	123	Jun 5	342
LOWEST DAILY MEAN	0.03	Aug 5	0.06
ANNUAL SEVEN-DAY MINIMUM	0.06	Aug 1	0.07
MAXIMUM PEAK FLOW			144
MAXIMUM PEAK STAGE			9.60
ANNUAL RUNOFF (CFSM)	0.93		0.41
ANNUAL RUNOFF (INCHES)	8.00		4.27
10 PERCENT EXCEEDS	58		37
50 PERCENT EXCEEDS	26		3.2
90 PERCENT EXCEEDS	0.12		0.27

(a) Also occurred Aug. 12, 21, 1998

(e) Estimated due to ice effect or missing record

## 055451345 WHITE RIVER AT CENTER STREET AT LAKE GENEVA, WI--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1997 to September 1999, October 2000 to August 2002, December 2002 to September 2003.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1997 to September 1999.

TOTAL-PHOSPHORUS DISCHARGE: October 1997 to September 1999, October 2000 to August 2002, December 2002 to September 2003.

REMARKS.--Records fair. Samples collected by Geneva Lake Environmental Agency using equal-width increment (EWI) method unless otherwise noted. Monitoring suspended from Aug. 12 to Dec. 24, 2002, because of repairs to Geneva Lake dam.

EXTREMES FOR PERIOD OF RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 16 mg/L, APR. 26, 1999; minimum observed, 1 mg/L, on several days.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 3.0 ton, APR. 26, 1999; minimum daily, 0.0 ton, on many days in 1998 and 1999 water years.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.40 mg/L, Sept. 8; minimum observed, <0.005 mg/L, Jan. 6 and Feb. 12, 1998, and May 19, 2003.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 8.86 lb, June 13, 2001; minimum daily, 0.00 lb, on several days in 1998 and 1999 water years, and many days in 2002 water year.

EXTREMES FOR CURRENT YEAR.--

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.028 mg/L, Mar. 28; minimum observed, <0.005 mg/L, May 19.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 3.06 lb, May 30; minimum daily, 0.02 lb, on many days.

PHOSPHORUS, WATER, UNFILTERED, POUNDS PER DAY, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	1.87	0.03	e0.03	0.26	1.60	2.37	0.48	0.36	0.07
2	---	---	---	1.74	0.03	e0.03	0.22	1.39	2.03	0.43	0.44	0.07
3	---	---	---	1.75	0.03	e0.02	0.62	1.22	1.88	0.53	0.74	0.06
4	---	---	---	1.72	0.03	e0.02	0.68	1.16	1.58	0.53	0.91	0.06
5	---	---	---	1.72	e0.03	e0.02	0.64	2.22	1.42	1.12	0.63	0.06
6	---	---	---	1.77	e0.03	e0.02	0.30	2.13	1.22	1.37	0.48	0.06
7	---	---	---	1.78	e0.03	e0.02	0.28	1.95	1.18	1.56	0.58	0.06
8	---	---	---	1.77	e0.03	e0.02	0.43	1.94	1.73	1.72	0.44	0.06
9	---	---	---	0.64	e0.03	e0.02	0.45	1.90	1.57	1.63	0.25	0.05
10	---	---	---	0.06	e0.03	e0.02	0.45	1.72	1.44	1.93	0.20	0.06
11	---	---	---	0.06	e0.03	0.02	0.48	2.56	1.06	1.70	0.09	0.06
12	---	---	---	0.05	e0.03	0.03	e0.48	1.82	0.91	1.28	0.05	0.07
13	---	---	---	0.05	e0.03	0.03	e0.48	1.49	0.88	1.12	0.04	0.04
14	---	---	---	0.05	e0.03	0.03	e0.48	1.52	0.87	0.98	0.04	0.04
15	---	---	---	0.05	0.03	0.03	e0.47	1.58	0.84	3.03	0.05	0.03
16	---	---	---	0.05	e0.03	0.03	e0.47	1.45	0.84	2.86	0.05	0.03
17	---	---	---	0.05	e0.03	0.03	e0.47	1.28	e0.83	2.46	0.05	0.04
18	---	---	---	0.05	0.03	0.02	0.50	1.16	0.90	1.73	0.05	0.04
19	---	---	---	0.05	0.03	0.03	0.89	1.14	0.72	1.64	0.06	0.04
20	---	---	---	0.05	0.03	0.03	1.34	1.57	0.73	1.55	0.06	0.04
21	---	---	---	e0.05	0.03	0.03	1.12	1.45	0.78	1.60	0.06	0.03
22	---	---	---	e0.04	0.03	0.03	0.90	1.44	0.77	1.22	0.06	0.04
23	---	---	---	e0.04	0.03	0.03	0.76	1.46	0.77	0.94	0.06	0.04
24	---	---	e1.70	e0.04	e0.02	0.04	0.56	1.46	0.78	0.82	0.05	0.03
25	---	---	1.77	e0.04	e0.02	0.03	0.48	1.41	0.89	0.80	0.05	0.02
26	---	---	1.81	e0.04	e0.02	0.03	0.50	1.43	1.24	0.79	0.05	0.02
27	---	---	1.88	e0.03	e0.02	0.08	0.57	1.53	0.82	0.38	0.05	0.02
28	---	---	1.86	e0.04	e0.03	0.20	0.57	2.14	0.69	0.25	0.05	0.02
29	---	---	1.76	e0.04	---	0.14	0.49	2.79	0.67	0.19	0.05	0.02
30	---	---	1.81	e0.03	---	0.15	0.71	3.06	0.54	0.32	0.06	0.02
31	---	---	1.87	e0.03	---	0.19	---	2.78	---	0.35	0.06	---
TOTAL	---	---	---	15.75	0.80	1.45	17.05	53.75	32.95	37.31	6.17	1.30

e Estimated



055451345 WHITE RIVER AT CENTER STREET AT LAKE GENEVA, WI--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Phosphorus, water, unfltrd mg/L (00665)
OCT 2002				
15...	1505	1.1	10	0.016
DEC				
27...	1441	38	10	0.009
MAR 2003				
18...	1330	0.51	70	0.009
28...	1510	1.4	10	0.028
APR				
10...	1300	11	10	0.011
25...	1650	12	10	0.010
MAY				
19...	1147	33	10	<0.005
30...	1300	49	10	0.015
JUN				
13...	1157	28	10	0.007
29...	0945	7.6	10	0.019
JUL				
11...	0921	19	10	0.018
24...	1142	9.6	10	0.015
AUG				
08...	1345	2.4	10	0.027

## 05545750 FOX RIVER NEAR NEW MUNSTER, WI

LOCATION.--Lat 42°36'39", long 88°13'33", in NW ¼ NW ¼ sec.26, T.2 N., R.19 E., Kenosha County, Hydrologic Unit 07120006, on right bank 40 ft downstream from bridge on County Trunk Highway JB, 2.2 mi north of New Munster, and 17.0 mi upstream from Fox Chain of Lakes.

DRAINAGE AREA.--811 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1993, published as "at Wilmot" under station number 05546500.

REVISED RECORDS.--WSP 1308: 1943(M), 1945(M). WDR WI-67-1: Drainage area. WDR WI-92-1: 1991.

GAGE.--Water-stage recorder. Datum of gage is 735.72 ft above NGVD of 1929 (Racine County Surveyor bench mark). Prior to Sept. 2 1965, nonrecording gage at bridge 400 ft above dam in Wilmot 11 mi downstream at datum 0.50 ft lower, and Sept. 2 1965 to Sept. 30, 1993, recording gage 100 ft downstream from bridge at the lower datum. Removal of dam due to damage was completed by Sept. 15, 1992.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	323	356	e230	287	e170	e140	396	455	471	219	151	112
2	453	332	e250	288	e180	e140	372	685	423	225	149	91
3	482	365	e240	262	e190	e150	354	636	484	195	187	88
4	441	289	e230	e270	e190	e150	349	592	415	159	199	86
5	558	329	e220	e270	e180	e150	391	790	413	228	195	102
6	500	308	e220	277	e180	e160	409	963	363	217	172	99
7	458	279	e210	280	e180	e160	399	777	317	328	208	96
8	448	279	e210	283	e170	e160	435	895	345	334	205	83
9	324	287	e200	275	e170	e160	445	1,100	435	454	223	103
10	366	308	e200	267	e160	e170	357	1,360	416	434	169	104
11	332	318	e210	e240	e160	e180	457	1,240	478	441	166	87
12	270	334	e210	e210	e150	e180	455	1,320	474	414	169	96
13	290	270	e220	e180	e150	e180	445	1,330	430	338	163	164
14	304	267	e230	e170	e150	e220	405	1,140	364	269	137	159
15	271	306	e230	e160	e140	e320	348	1,190	321	388	154	110
16	295	281	e240	e150	e140	e540	454	1,130	301	525	126	109
17	282	282	e240	e150	e140	578	449	988	243	489	124	105
18	259	287	285	e150	e140	555	273	881	241	441	142	101
19	303	282	367	e140	e140	622	325	793	267	315	116	97
20	342	278	446	e140	e140	562	333	778	279	259	115	88
21	276	302	432	e130	e140	489	367	687	194	281	114	90
22	281	334	e380	e130	e140	453	431	531	233	275	126	107
23	308	262	e320	e130	e150	470	364	589	213	247	95	122
24	266	e260	e280	e130	e150	465	292	515	187	218	95	106
25	307	e260	e260	e130	e140	423	305	450	204	206	120	100
26	369	e260	e250	e140	e140	419	335	402	212	210	124	110
27	396	e260	e240	e140	e140	388	261	405	185	183	114	135
28	418	249	e230	e140	e140	348	226	348	235	157	92	110
29	389	262	e220	e150	---	422	239	447	242	181	98	105
30	360	e250	e220	e150	---	437	278	400	196	133	116	103
31	337	---	e230	e160	---	415	---	397	---	173	114	---
TOTAL	11,008	8,736	7,950	5,979	4,360	10,206	10,949	24,214	9,581	8,936	4,478	3,168
MEAN	355	291	256	193	156	329	365	781	319	288	144	106
MAX	558	365	446	288	190	622	457	1,360	484	525	223	164
MIN	259	249	200	130	140	140	226	348	185	133	92	83
CFSM	0.44	0.36	0.32	0.24	0.19	0.41	0.45	0.96	0.39	0.36	0.18	0.13
IN.	0.50	0.40	0.36	0.27	0.20	0.47	0.50	1.11	0.44	0.41	0.21	0.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

MEAN	391	478	449	423	542	1,094	1,065	717	566	390	331	344
MAX	1,931	1,536	1,755	1,818	1,386	2,434	3,591	2,078	1,748	1,382	902	1,763
(WY)	(1987)	(1986)	(1983)	(1960)	(2001)	(1979)	(1993)	(1973)	(2000)	(1969)	(1952)	(1972)
MIN	79.5	113	91.4	87.7	105	252	256	108	124	69.2	57.2	62.7
(WY)	(1957)	(1950)	(1964)	(1940)	(1940)	(1968)	(1958)	(1958)	(1988)	(1958)	(1958)	(1946)

## 05545750 FOX RIVER NEAR NEW MUNSTER, WI—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	184,039		109,565			
ANNUAL MEAN	504		300		565	
HIGHEST ANNUAL MEAN					1,240	1993
LOWEST ANNUAL MEAN					174	1958
HIGHEST DAILY MEAN	2,420	Jun 6	1,360	May 10	7,100	Apr 1, 1960
LOWEST DAILY MEAN	130	Aug 12	83	Sep 8	35	Sep 9, 1958
ANNUAL SEVEN-DAY MINIMUM	160	Jul 20	92	Sep 2	41	Sep 7, 1958
MAXIMUM PEAK FLOW			1,420	May 12	(a)7,520	Mar 31, 1960
MAXIMUM PEAK STAGE			9.31	May 12	(b)14.10	Feb 21, 1994
INSTANTANEOUS LOW FLOW			79	(c)Sep 8,9	0.00	(d)Oct 26, 1945
ANNUAL RUNOFF (CFSM)	0.62		0.37		0.70	
ANNUAL RUNOFF (INCHES)	8.44		5.03		9.47	
10 PERCENT EXCEEDS	853		476		1,270	
50 PERCENT EXCEEDS	409		260		370	
90 PERCENT EXCEEDS	210		118		127	

(a) Gage height, 9.25 ft, from graph based on gage readings, site and datum then in use

(b) Ice affected

(c) Also occurred Sept. 11,12

(d) Also occurred Aug. 10, 1990

(e) Estimated due to ice effect or missing record

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at miscellaneous sites for both low flows and high flows are given in separate tables.

#### Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

#### Maximum discharge at crest-stage partial-record stations

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)
STREAMS TRIBUTARY TO LAKE SUPERIOR								
04024400 Stony Brook near Superior	Lat 46°35'01", long 92°07'10" in SE 1/4 sec. 4, T.47 N., R.14 W., Douglas County, Hydrologic Unit 04010301, at box culvert on State Highway 35, 12.5 mi south of toll bridge on U.S. Highways 2 and 35 at St. Louis River at Superior; drainage area, 1.86 mi <sup>2</sup> .	1959-03	05-10-03 03-18-03	13.21 G13.41	103	09-02-85	35.23	595
04025200 Pearson Creek near Maple	Lat 46°38'51", long 91°42'55" on common boundary of secs. 11 and 14, T.48 N., R.11 W., Douglas County, Hydrologic Unit 04010301, at box culvert on State Highway 13, 4.0 mi north of Maple; drainage area, 4.07 mi <sup>2</sup> .	1957-03	05-10-03	C	<765	09-02-85	31.83	1,440
04026200 Sand River Tributary near Red Cliff	Lat 46°53'53", long 90°56'47" in NE 1/4 section 14, T.51 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, at box culvert on State Highway 13, 8.0 mi northwest of Red Cliff; drainage area, 1.09 mi <sup>2</sup> .	1959-03	05-11-03	10.74	41	05-23-64	16.86	624
04026300 Sioux River near Washburn	Lat 46°41'20", long 90°57'02" in NE 1/4 sec. 35, T.49 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, on County Trunk Highway C, 2.5 mi west of Washburn; drainage area, 33.9 mi <sup>2</sup> .	1959-65 1966# 1967-03	05-11-03	12.55	539	09-02-85 04-23-01	29.45 21.70	2,200 2,670

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)
STREAMS TRIBUTARY TO LAKE SUPERIOR--CONTINUED								
04026450 Bad River near Mellen	Lat 46°16'14", long 90°42'26" in NE 1/4 NW 1/4 sec.26, T.44 N., R.3 W., Ashland County, Hydrologic Unit 04010302, on left bank 150 ft downstream from bridge on U.S. Forest Service Road, 4.4 mi southwest of Mellen; drainage area, 82.0 mi <sup>2</sup> .	1971-75# 1976-03	05-12-03	9.59	2,880	05-12-03	9.59	2,880
04027200 Pearl Creek at Grandview	Lat 46°22'05", long 91°05'27" in NE 1/4 sec.22, T.45 N., R.6 W., Bayfield County, Hydrologic Unit 04010302, at bbox culvert on U.S. Highway 63, 0.8 mi east of Grandview; drainage area, 16.9 mi <sup>2</sup> .	1960-03	05-11-03	14.25	395	07-02-92	28.47	1,920
STREAMS TRIBUTARY TO LAKE MICHIGAN								
04059900 Allen Creek Tributary near Alvin	Lat 45°58'05", long 88°47'24" on north boundary sec. 7, T.40 N., R.14 E., Forest County, Hydrologic Unit 04030106, at culvert on State Highway 70, 2.2 mi southeast of Alvin; drainage area, 1.22 mi <sup>2</sup> .	1960-03	50-13-03	9.76	9.61	05-22-83	11.38	40
04063640 North Branch Pine River at Windsor Dam near Alvin	Lat 45°55'43", long 88°51'38" in SE 1/4 sec.21, T.40 N., R.13 E., Forest County, Hydrologic Unit 04030108, at bridge on country road, at Windsor Dam, 3.8 mi upstream from confluence of North and South Forks, 4.0 mi southwest of Alvin; drainage area, 27.8 mi <sup>2</sup> .	1967-68# 1970-03	05-13-03 04-13-02 04-13-01 04-21-00	D3.78 D4.43 D3.64 D3.53	B FB FB FB	04-09-80	3.89	165
04067760 Peshtigo River near Cavour	Lat 45°39'20", long 88°38'52" in SW 1/4 sec.29, T.37 N., R.15 E., Forest County, Hydrologic Unit 04040105, at bridge on U.S. Highway 8, 0.7 mi northwest of Cavour; drainage area, 150 mi <sup>2</sup> .	1970-03	04-22-03	12.83	741	04-21-96	15.78	1,600
04069700 North Branch Oconto River near Wabeno	Lat 45°26'19", long 88°37'40" in SW 1/4 sec.9, T.34 N., R.15 E., Forest County, Hydrologic Unit 04030104, at pipe arch culvert on County Trunk Highway C, 0.6 mi east of intersection with State Highway 32 at Wabeno; drainage area, 34.1 mi <sup>2</sup> .	1970-03	04-22-03	12.12	147	04-20-96	14.21	621

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED								
04071700 North Branch Little River near Coleman	Lat 45°00'37", long 88°02'43" on common boundary of secs. 2 and 3, T.29 N., R.20 E., Oconto County, Hydrologic Unit 04030104, at bridge on U.S. Highway 141, 3.8 mi south of Coleman; drainage area, 21.4 mi <sup>2</sup> .	1958-03	04-16-03 03-20-03	12.28 G12.30	171	03-30-67	14.50	640
04071800 Pensaukee River near Pulaski	Lat 44°45'48" long 88°15'07" in NE 1/4 sec.1, T.26 N., R.18 E., Shawano County, Hydrologic Unit 04030103, at bridge on State Highway 32, 6.1 mi north of Pulaski; drainage area, 48.80 mi <sup>2</sup> .	1961-03	04-16-03	13.96	883	06-18-96	16.96	1,810
04072792 Tagatz Creek near Westfield	Lat 43°57'22" long 89°29'38" in SE 1/4 sec.12, T.17 N., R.8 E., Marquette County, Hydrologic Unit 04030201, at culvert on County Trunk Highway H, 5.2 mi north of Westfield.	1996-03	03-27-03	16.89	80	03-27-03	16.89	80
04073400 Bird Creek at Wautoma	Lat 44°04'06", long 89°18'08" in S 1/2 section 34, T.19 N., R.10 E., Waushara County, Hydrologic Unit 04030201, at concrete culvert on State Highway 21, 0.2 mi west of Wautoma; drainage area, 4.14 mi <sup>2</sup> .	1959-03	04-17-03	11.87	66	03-07-73 06-20-02	13.07 15.97	190 B
04074850 Lily River near Lily	Lat 45°20'59", long 88°49'52" in SE 1/4 sec.11, T.33 N., R.13 E., Langlade County, Hydrologic Unit 04030202, at culvert on County Trunk Highway A, 3.2 mi north from junction of State Highways 55 and 52 at Lily; drainage area, 45.6 mi <sup>2</sup> .	1970-03	04-21-03	9.70	127	04-20-96	10.25	167
*04075200 Evergreen Creek near Langlade	Lat 45°10'11", long 88°48'12" in NW 1/4 sec.18, T.31 N., R.14 E., Langlade County, Hydrologic Unit 04030202, on culvert on State Highway 64, 3.5 mi southeast of Langlade; drainage area, 8.09 mi <sup>2</sup> .	1959-65 1966-72# 1973-03	04-16-03	10.95	49	07-11-82	11.66	80
04078891 Maple Creek near Sugar Bush	Lat 44°27'54", long 88°43'20" in NW 1/4 SE 1/4 sec.18, T.23 N., R.15 E., Outagamie County, Hydrologic Unit 04030202, at bridge on County Trunk Highway D, 1.3 mi southeast of Sugar Bush; drainage area, 22.1 mi <sup>2</sup> .	1996-03	04-16-03	12.17	94	1996	13.65	360

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED								
04079700 Spaulding Creek near Big Falls	Lat 44°38'13", long 89°01'20" on common boundary of secs. 14 and 15, T.25 N., R.12 E., Waupaca County, Hydrologic Unit 04030202, at culvert on County Trunk Highway E, 1.5 mi north of Big Falls; drainage area, 5.57 mi <sup>2</sup> .	1959-65 1966# 1967-03	04-16-03	<10.39	<34	05-07-60	11.64	101
04081900 Sawyer Creek at Oshkosh	Lat 44°02'00", long 88°35'00" in SW 1/4 sec.15, T.18 N., R.16 E., Win- nebago County, Hydrologic Unit 04030201, at bridge on U.S. High- way 41, 1.0 mi southwest of bridge on Algoma Street at Fox River, at Oshkosh; drainage area, 12.10 mi <sup>2</sup> .	1961-03	05-11-03	11.48	B	09-11-86	17.47	2,350
04085145 Red River near Dykesville	Lat 44°38'59", long 87°42'47" in SW 1/4 SE 1/4 sec.9, T.25 N., R.23 E., Kewaunee County, Hydrologic Unit 04030102, at upstream crossing of County Highway A, 2.5 mi east of Dykesville; drainage area, 11.8 mi <sup>2</sup> .	1996-03	05-11-03	11.39	76	04-01-98	12.49	215
04085400 Killsnake River near Chilton	Lat 44°03'33", long 88°08'36" in E 1/2 sec.6, T.18 N., R.20 E., Calu- met County, Hydrologic Unit 04030101, at bridge on country road, 2.4 mi northeast of Chilton; drainage area, 29.4 mi <sup>2</sup> .	1961-03	05-12-03	10.36	220	03-30-79	14.37	1,840
040854105 Mud Creek near Valders	Lat 44°02'20", long 87°54'07" in SW 1/4 SW 1/4 sec.8, T.18 N., R.22 E., Manitowoc County, Hydrologic Unit 04030101, at culvert on Marken Road, 0.8 mi south of inter- section with State Highway 151, and 1.7 mi southeast of Valders.	1996-03	05-11-03	13.14	111	06-17-96	13.94	145
04086310 Mink Creek near Beech- wood	Lat 43°36'15", long 88°06'01" in SE 1/4 SE 1/4 sec.9, T.13 N., R.20 E., Sheboygan County, Hydrologic Unit 04040003, at bridge on County Trunk Highway S, 1.2 mi northeast of Beechwood; drainage area, 9.84 mi <sup>2</sup> .	1996-03	03-24-03	16.97	38	06-17-96	18.33	61
04087100 Honey Creek at Milwaukee	Lat 42°58'44", long 87°59'56" in NE 1/4 SW 1/4, sec.15, T.6 N., R.21 E., Milwaukee County, Hydrologic Unit 04040003, 400 ft upstream from bridge on S. 68th Street, 6.0 mi southwest of mouth of Milwau- kee River, at Milwaukee; drainage area, 3.26 mi <sup>2</sup> .	1959-03	08-03-03	21.01	546	08-13-02	25.12	2,290

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED								
04087200 Oak Creek near South Milwaukee	Lat 42°52'58", long 87°53'31" on common boundary of sec. 21 and 22, T.5 N., R.22 E., Milwaukee County, Hydrologic Unit 04040002, at bridge on West Nicholson Road, 3.0 mi southeast of South Milwaukee; drainage area, 13.8 mi <sup>2</sup> .	1958-03	05-09-03	13.76	144	07-02-00	17.74	1,360
04087250 Pike Creek near Kenosha	Lat 42°36'12", long 87°53'41" in W 1/2 sec.27, T.2 N., R.22 E., Kenosha County, Hydrologic Unit 04040002, at box culvert on State Highway 43, 3.0 mi northeast of Kenosha; drainage area, 7.25 mi <sup>2</sup> .	1960-03	05-09-03	11.90	33	06-12-00	18.07	235
ST. CROIX RIVER BASIN								
05340300 Trade River near Frederic	Lat 45°37'41", long 92°29'19" in SW 1/4 sec.4, T.36 N., R.17 W., Polk County, Hydrologic Unit 07030005, at box culvert on State Highways 35 and 48, 2.5 mi south- west of Frederic; drainage area, 6.34 mi <sup>2</sup> .	1958-03	05-20-03	10.98	121	06-12-84	18.89	1,050
05341313 Bull Brook near Amery	Lat 45°17'03", long 92°19'00" in SW 1/4 SE 1/4, sec.2, T.32 N., R.16 W., Polk County, Hydrologic Unit 07030005, on right bank just upstream from 32-ft concrete box culvert on County Trunk Highway F, 1.8 mi south of junction of County Trunk Highway J, and about 2.5 mi southeast of Amery; drainage area, 9.62 mi <sup>2</sup> .	1995-03	05-12-03	12.36	348	04-23-01	12.83	433
05341900 Kinnickin- nic River Tributary at River Falls	Lat 44°49'57", long 92°38'23" in NE 1/4 sec.14, T.27 N., R.19 W., Pierce County, Hydrologic Unit 07030005, at bridge on County Trunk Highway FF, 1.6 mi south- west of River Falls; drainage area, 7.26 mi <sup>2</sup> .	1959-03	05-11-03	13.56	389	08-09-88	15.99	5,200
05346294 Goose Creek at Beldenville	Lat 44°46'27", long 92°31'29" in NW 1/4 NE 1/4 sec.2, T.26 N., R.18 W., Pierce County, Hydrologic Unit 07040001, at bridge on 790th Street, 1.0 mi west of Beldenville; drainage area, 10.8 mi <sup>2</sup> .	2000-03	05-11-03	12.87	1,480	05-11-03	12.87	1,480



Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)
ST. CROIX RIVER BASIN--CONTINUED								
05355315 Lost Creek near Waverly	Lat 44°42'10", long 92°20'16" in SE 1/4 SE 1/4 sec.29, T.26 N., R.16 W., Pierce County, Hydrologic Unit 07040001, at bridge on 465th Ave., 4.4 mi southwest of Waverly; drainage area, 25.2 mi <sup>2</sup> .	2000-03	05-11-03	12.53	984	04-12-01	12.97	1,200
CHIPPEWA RIVER BASIN								
05357360 Bear River near Powell	Lat 46°04'40", long 90°00'52" in NE 1/4 sec.32, T.42 N., R.4 E., Iron County, Hydrologic Unit 07050002, at bridge on State Highway 182, 3.0 mi west of Powell; drainage area, 120 mi <sup>2</sup> .	1970-03	05-13-03	12.42	557	05-11-02 04-21-96	13.08 G13.18	799
05359600 Price Creek near Phillips	Lat 45°43'33", long 90°40'12" in SW 1/4 sec.31, T.38 N., R.2 W., Price County, Hydrologic Unit 07050002, at culvert on County Trunk Highway W, 13.0 mi west of Phillips; drainage area, 16.9 mi <sup>2</sup> .	1958-65 1966# 1967-03	05-13-03	12.91	186	09-15-94	17.43	552
05361400 Hay Creek near Prentice	Lat 45°32'32", long 90°21'37" in SE 1/4 sec.4, T.35 N., R.1 E., Price County, Hydrologic Unit 07050004, at culvert on U.S. Highway 8, 3.5 mi west of Prentice; drainage area, 22.6 mi <sup>2</sup> .	1961-03	05-13-03	12.30	409	09-16-94	15.39	1,650
05361420 Douglas Creek near Prentice	Lat 45°31'06", long 90°15'28" in NE 1/4 sec.17, T.35 N., R.2 E., Price County, Hydrologic Unit 07050004, at culvert on County Trunk Highway C, 2.3 mi southeast of intersection with State Highway 13 at Prentice; drainage area, 25.2 mi <sup>2</sup> .	1970-03	05-13-03	14.24	745	09-15-94	17.66	1,620
05361989 Jump River Tributary near Jump River	Lat 45°21'08", long 90°49'23" in SW 1/4 SW 1/4 sec.12, T.33 N., R.4 W., Taylor County, Hydrologic Unit 07050004, on left bank just upstream from a 23-ft concrete box culvert at a cut-off road at Junction of Hwys 73 and I-94, 1 mi west of Jump River and 7.5 mi northeast of Sheldon; drainage area, 6.77 mi <sup>2</sup> .	1995-03	05-11-03 10-07-02	11.30 G12.07	140	04-11-02 10-07-02	11.66 G12.07	205

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)
CHIPPEWA RIVER BASIN--CONTINUED								
05363775 Babit Creek at Gilman	Lat 45°10'00", long 90°47'49" in NW 1/4 SW 1/4 sec.18, T.31 N., R.3 W., Taylor County, Hydrologic Unit 07050005, on right bank just upstream from a 30 ft concrete cul- vert on State Highway 64 at east side of Gilman; drainage area, 8.49 mi <sup>2</sup> .	1995-03	05-11-03	12.49	298	03-28-98	12.87	367
05364000 Yellow River at Cadott	Lat 44°57'21", long 91°08'48" in NE 1/4 sec.31, T.29 N., R.6 W., Chippewa County, Hydrologic Unit 07050005, at bridge on State High- way 27, at Cadott; drainage area, 364 mi <sup>2</sup> .	1943-61# 1962-03	05-12-03	10.71	4,260	09-22-86	15.82	16,600
05364100 Seth Creek near Cadott	Lat 44°59'24", long 91°08'48" in SW 1/4 sec.17, T.29 N., R.6 W., Chippewa County, Hydrologic Unit 07050005, at culvert on State High- way 27, 3.1 mi north of Cadott; drainage area, 3.25 mi <sup>2</sup> .	1962-03	05-11-03	13.61	259	08-01-01	19.13	1,540
05364500 Duncan Creek at Bloomer	Lat 45°07'00", long 91°30'00" in sec.8, T.30 N., R.9 W., Chippewa County, Hydrologic Unit 07070005, 0.2 mi below Bloomer dam, at Bloomer; drainage area, 50.3 mi <sup>2</sup> .	1945-51# 1958-03	05-12-03	8.33	1,340	06-29-79	11.81	5,400
05366500 Eau Claire River near Fall Creek	Lat 44°48'35", long 91°16'50" in NW 1/4 sec.19, T.27 N., R.7 W., Eau Claire County, Hydrologic Unit 07050006, 500 ft east of County Trunk Highway K, 3.2 mi north of Fall Creek; drainage area, 760 mi <sup>2</sup> .	1943-55# 1958-03	04-18-03	12.27	9,440	06-20-93	19.38	24,500
05367030 Willow Creek near Eau Claire	Lat 44°44'11", long 91°26'48" on common boundary of secs. 14 and 15, T.26 N., R.9 W., Eau Claire County, Hydrologic Unit 07050005, at box culvert on State Highway 93, 4.0 mi south of Eau Claire; drainage area, 3.83 mi <sup>2</sup> .	1958-03	05-11-03	10.13 G10.90	45.1	07-08-59	14.12	400
053674588 Rock Creek Tributary near Canton	Lat 45°27'06", long 90°36'08" in SW 1/4 SW 1/4 sec.3, T.34 N., R.10 W., Barron County, Hydrologic Unit 07050007, 3 mi north of U.S. Hwy 8 on 27th Street, about 40 ft north of intersection of 27th Street and 17th Avenue, and 2.5 mi east and 1.7 mi north of Canton; drainage area, 6.34 mi <sup>2</sup> .	1995-03	05-11-03 04-01-03	12.14 G12.61	237	08-01-01	12.87	340

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)
CHIPPEWA RIVER BASIN--CONTINUED								
05367700 Lightning Creek at Almena	Lat 45°25'17", long 92°01'57" in NW 1/4 sec.19, T.34 N., R.13 W., Barron County, Hydrologic Unit 07050007, at bridge on County Trunk Highway P, at Almena; drainage area, 19.0 mi <sup>2</sup> .	1958-03	05-12-03	11.91	391	03-30-67	12.39	1,550
05369945 Eau Galle River at Low-Water Bridge at Spring Valley	Lat 44°52'02", long 92°15'07" in SE 1/4 NW 1/4 sec.31, T.28 N., R.15 W., St. Croix County, Hydrologic Unit 07050005, on right bank 50 ft downstream from Low-Water Bridge on Boston Road, approximately 550 ft upstream from French Creek, and at Spring Valley. Drainage area, 47.9 mi <sup>2</sup> .	1981-83# 1986-96# 2002-03	05-11-03	8.17	1,470	09-21-86	8.80	6,000
05370900 Spring Creek near Durand	Lat 44°34'13", long 91°57'48" in S 1/2 sec.9, T.24 N., R.13 W., Buffalo County, Hydrologic Unit 07050005, at bridge on country road, 4.0 mi south of bridge on Chippewa River at Durand; drainage area, 6.45 mi <sup>2</sup> .	1962-03	2002	C	B	08-23-75	15.71	860
BUFFALO RIVER BASIN								
05371800 Buffalo River Tributary near Osseo	Lat 44°35'01" long 91°05'40" in S 1/2 sec.3, T.24 N., R.6 W., Jackson County, Hydrologic Unit 07040003, at culvert on U.S. Highway 10, 6.5 mi east of Osseo; drainage area, 1.44 mi <sup>2</sup> .	1960-03	04-16-03	11.12	56	09-12-78	12.85	188
05371920 Buffalo River near Mondovi	Lat 44°31'36" long 91°41'46" in SW 1/4 SE 1/4 sec.27, T.24 N., R.11 W., Buffalo County, Hydrologic Unit 07040003, at bridge on State Highway 88, 4.0 mi south of Mondovi; drainage area, 279 mi <sup>2</sup> .	1974-03	03-27-03	12.80	1,020	09-10-75	15.39	5,180
TREMPEALEAU RIVER BASIN								
05379187 Pine Creek near Taylor	Lat 44°20'07", long 91°05'17" in NE 1/4 NE 1/4 sec.3, T.21 N., R.6 W., Jackson County, Hydrologic Unit 07040005, at bridge on Taylor Road, about 2 mi northeast of Taylor; drainage area, 10.9 mi <sup>2</sup> .	1996-03	2003	<10.04	<75	06-27-98	13.69	405

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)
TREMPEALEAU RIVER BASIN--CONTINUED								
05379288 Bruce Valley Creek near Pleasantville	Lat 44°26'45", long 91°21'40" in SE 1/4 NW 1/4 sec.28, T.23 N., R.8 W., Trempealeau County, Hydrologic Unit 07040005, on left bank, 100 ft upstream from bridge on CTH D, 0.9 mi upstream from Elk Creek, and 2.9 mi west of Pleasantville; drainage area, 10.1 mi <sup>2</sup> .	1996-03	10-04-02	6.01	76	06-27-98	8.18	225
BLACK RIVER BASIN								
05380900 Poplar River near Owen	Lat 44°53'10", long 90°34'17" in NW 1/4 sec.25, T.28 N., R.2 W., Clark County, Hydrologic Unit 07040007, at bridge on County Trunk Highway N, 4.2 mi south of Owen; drainage area, 157 mi <sup>2</sup> .	1958-65 1966# 1967-03	04-16-03	17.51	4,350	06-06-80 06-22-02	20.12 J20.14	12,500 5,900
05380970 Cawley Creek near Neillsville	Lat 44°35'42", long 90°34'31" in SW 1/4 sec.25, T.28 N., R.2 W., Clark County, Hydrologic Unit 07040007, at bridge on State Highway 73, 3.7 mi north of Neillsville; drainage area, 38.6 mi <sup>2</sup> .	1961-03	04-16-03	16.08	1,760	09-22-86	20.62	7,880
05382200 French Creek near Ettrick	Lat 44°11'04", long 91°18'45" (revised) in NW 1/4 NW 1/4 sec.26 (revised), T.20 N., R.8 W., Trempealeau County, Hydrologic Unit 07040007, at bridge on County Trunk Highways D and T, 2.5 mi west of Ettrick; drainage area, 14.7 mi <sup>2</sup> .	1960-03	2003	<9.26	<573	06-12-01	12.58	2,950
BAD AXE RIVER BASIN								
05387100 North Fork Bad Axe River near Genoa	Lat 43°33'10", long 91°08'58" in SW 1/4 sec.36, T.13 N., R.7 W., Vernon County, Hydrologic Unit 07060001, at bridge on State Highway 56, 4.1 mi southeast of Genoa; drainage area, 80.8 mi <sup>2</sup> .	1959-65 1966# 1967-03	C	<9.07	<75	08-27-59	19.59	10,000
WISCONSIN RIVER BASIN								
05391260 Gudegast Creek near Starks	Lat 45°41'41", long 89°15'42" in NW 1/4 sec.16, T.37 N., R.10 E., Oneida County, Hydrologic Unit 07070001, at corrugated culvert on country road, 3.0 mi northwest of Starks; drainage area, 14.0 mi <sup>2</sup> .	1970-03	04-21-03	11.71	60	05-09-90 04-19-02	13.33 13.36	130 126

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)
WISCONSIN RIVER BASIN--CONTINUED								
05391950 Squaw Creek near Harrison	Lat 45°32'47" long 89°29'16" in SW 1/4 sec.3, T.35 N., R.8 E., Lincoln County, Hydrologic Unit 07070001, at culvert on County Trunk Highway A, 5.0 mi northeast of Harrison.; drainage area, 3.23 mi <sup>2</sup> .	1970-03	04-17-03	10.96	30.3	03-03-87	11.35	F51
05392150 Mishonagon Creek near Woodruff	Lat 45°54'41", long 89°45'30" in NE 1/4 sec.32, T.40 N., R.6 E., Vilas County, Hydrologic Unit 07070001, at Twin culverts on Ste Highway 47, 3.0 mi northwest of Woodruff; drainage area, 17.6 mi <sup>2</sup> .	1958-03	05-12-03	10.42	99.3	08-17-72	11.33	117
05392350 Bearskin Creek near Harshaw	Lat 45°38'43", long 89°41'12" in SW 1/4 sec.36, T.37 N., R.6 E., Oneida County, Hydrologic Unit 07070001, at culvert on County Trunk Highway K, 2.1 mi southwest of Harshaw; drainage area, 31.1 mi <sup>2</sup> .	1958-65 1966# 1967-03	05-12-03	10.01	106	06-14-81	10.97	180
05393640 Little Pine Creek near Irma	Lat 45°23'37", long 89°40'20" in NW 1/4 sec.31, T.34 N., R.7 E., Lincoln County, Hydrologic Unit 07070002, at box culvert on U.S. Highway 51, 3.0 mi north of Irma; drainage area, 22.0 mi <sup>2</sup> .	1970-03	04-21-03 04-12-02 04-11-01 09-12-00	14.15 13.49 12.72 12.07	171 F135 F97.7 F70.8	06-14-81	14.38	310
05394200 Devil Creek near Merrill	Lat 45°08'56", long 89°47'13" in N 1/2 sec.30, T.31 N., R.6 E., Lincoln County, Hydrologic Unit 07070002, at culvert on County Trunk Highway F, 5.8 mi southwest of Merrill; drainage area, 9.58 mi <sup>2</sup> .	1961-03	05-12-03	13.27	334	06-13-90	17.98	1,600
05395020 Lloyd Creek near Doering	Lat 45°13'57", long 89°22'04" in SE 1/4, T.32 N., R.9 E., Langlade County, Hydrologic Unit 07070002, at bridge on County Trunk Highway C, 4.5 mi east of Doering; drainage area, 7.80 mi <sup>2</sup> .	1970-03	04-17-03 04-17-03	12.34 D12.91	276	06-13-90	>16.00	>1,000
05395100 Trappe River Tributary near Merrill	Lat 45°08'07" long 89°30'08" in SW 1/4 sec.28, T.31 N., R.8 E., Lincoln County, Hydrologic Unit 07070002, at culvert on County Trunk Highway P, 9.5 mi southeast of Merrill; drainage area, 1.58 mi <sup>2</sup> .	1959-03	04-17-03	12.44	103	08-15-95	17.79	396

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)
WISCONSIN RIVER BASIN--CONTINUED								
05396300 Wisconsin River Tributary at Wausau	Lat 44°57'28", long 89°39'52" in NE 1/4 NW 1/4 sec.34, T.29 N., R.7 E., Marathon County, Hydrologic Unit 07070002, on road right-of-way of 24th Avenue opposite the Ace Motel, 300 ft east of U.S. Highway 51, at Wausau; drainage area, 1.10 mi <sup>2</sup> .	1982-03	04-16-03	H2.80	B	06-12 or 13-90	9.11	740
05397600 Big Sandy Creek near Wausau	Lat 45°01'55", long 89°27'00" in SE 1/4 sec.31, T.30 N., R.9 E., Mara- thon County, Hydrologic Unit 07070002, at bridge on State High- way 52, 10.0 mi northeast of Wau- sau; drainage area, 11.5 mi <sup>2</sup> .	1959-03	04-16-03	12.41	B	09-27-59	15.18	2,120
05400025 Johnson Creek near Knowl- ton	Lat 44°44'19", long 89°36'39" in SE 1/4 NE 1/4 sec.13, T.26 N., R.7 E., Marathon County, Hydrologic Unit 07070002, at bridge on County Trunk Highway X, 2.7 mi east of Knowlton; drainage area, 25.1 mi <sup>2</sup> .	1973-03	04-15-03	14.82	706	06-06-80	21.78	3,700
05401800 Yellow River Tributary near Pittsville	Lat 44°28'58", long 90°07'05" on common boundary of secs.11 and 14, T.23 N., R.3 E., Wood County, Hydrologic Unit 07070003, at bridge on County Trunk Highway C, 2.0 mi north of Pittsville; drain- age area, 7.23 mi <sup>2</sup> .	1959-03	10-04-02	11.32	91	05-02-73	13.82	810
05403700 Dell Creek near Lake Delton	Lat 43°33'05" long 89°51'55" in NW 1/4 sec.2, T.12 N., R.5 E., Sauk County, Hydrologic Unit 07070003, on right bank 50 ft upstream from highway bridge, 6.0 mi southwest of Lake Delton, and 7.0 mi upstream from mouth; drain- age area, 44.9 mi <sup>2</sup> .	1957-65# 1966-70 1971-80# 1983-03	05-11-03	5.33	151	09-14-92	9.80	1,200
05405600 Rowan Creek at Poynette	Lat 43°23'13", long 89°23'25" in S 1/2 sec.35, T.11 N., R.9 E., Columbia County, Hydrologic Unit 07070005, at bridge on U.S. High- way 51, at Poynette; drainage area, 10.4 mi <sup>2</sup> .	1961-03	05-11-03	H10.34	75	09-09-65	17.90	2,260
054062391 Otter Creek near Prairie du Sac	Lat 43°22'22", long 89°47'47" in SW 1/4 NW 1/4 sec.4, T.10 N., R.6 E., Sauk County, Hydrologic Unit 07070005, at bridge on Kings Cor- ner Road, 6.0 mi north, northwest of Prairie du Sac; drainage area, 4.75 mi <sup>2</sup> .	1996-03	05-11-03	13.30	113	06-01-00	19.90	3,680

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)
WISCONSIN RIVER BASIN--CONTINUED								
05406605 Lowery Creek near Spring Green	Lat 43°08'00", long 90°03'52" in SE 1/4 SE 1/4 SW 1/4 sec.30, T.8 N., R.4 E., Iowa County, Hydrologic Unit 07070005, on CTH T, 3.0 mi south of Spring Green; drainage area, 8.76 mi <sup>2</sup> .	1996-03	10-04-02	10.41	B	06-01-00	16.42	780
05407039 Fennimore Fork near Fenni- more	Lat 43°01'40", long 90°33'47" in NE 1/4 SW 1/4 NW 1/4 sec.1, T.6 N., R.2 W., Grant County, Hydrologic Unit 07070005, on Blue School Road, 5.6 mi northeast of Fenni- more; drainage area, 15.3 mi <sup>2</sup> .	1996-03	03-14-03 02-20-03	G10.65 G10.87	E70	06-01-00	16.70	1,160
GRANT RIVER BASIN								
05413400 Pigeon Creek near Lan- caster	Lat 42°49'00", long 90°43'20" in SW 1/4 sec.15, T.4 N., R.3 W., Grant County, Hydrologic Unit 07060003, at culvert on country road, 2.0 mi south of Lancaster; drainage area, 6.93 mi <sup>2</sup> .	1960-65 1966# 1967-03	07-08-03	<9.81	<100	01-24-67	20.85	2,800
PLATTE RIVER BASIN								
05414213 Little Platte River near Platteville	Lat 42°43'23", long 90°31'41" in NE 1/4 NE 1/4 sec.19, T.3 N., R.1 W., Grant County, Hydrologic Unit 07060003, on left bank 150 ft upstream from Stumptown Road, 2.6 mi southwest of Post Office in Platteville; drainage area, 79.7 mi <sup>2</sup> .	1987-90# 1991-03	09-14-03	8.93	438	06-01-00	17.60	9,200
GALENA RIVER BASIN								
05414900 Pats Creek near Elk Grove	Lat 42°40'03", long 90°22'40" in SW 1/4 sec.4, T.2 N., R.1 E., Lafayette County, Hydrologic Unit 07060005, at bridge on State High- way 81, 7.0 mi southeast of Plat- teville; drainage area, 8.50 mi <sup>2</sup> .	1960-03	04-30-03	12.82	455	06-29-69	17.32	7,040
ROCK RIVER BASIN								
05425806 Mud Creek near Danville	Lat 43°17'06", long 88°56'54" in NW 1/4 NW 1/4 NW 1/4 sec.3, T.9 N., R.13 E., Dodge County, Hydrologic Unit 07090002, at bridge on Burr Oak Road, 2.5 mi south of Dan- ville; drainage area, 12.3 mi <sup>2</sup> .	1995-03	2003	C	<10.1	06-02-00	16.33	396

Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)
ROCK RIVER BASIN--CONTINUED								
05430403 Fisher Creek Tributary at Janesville	Lat 42°40'18", long 89°03'31" in SW 1/4 SE 1/4 sec.34, T.3 N., R.12 E., Rock County, Hydrologic Unit 07090001, at culvert on Rockport Road, 0.4 mi west of South Crosby Avenue and 0.6 mi upstream from County Trunk Highway D, at Jan- esville; drainage area, 1.42 mi <sup>2</sup> .	1982-03	07-15-03	7.27	304	06-25-98	8.23	419
05431400 Little Tur- tle Creek at Allens Grove	Lat 42°34'46", long 88°45'33" in NE 1/4 sec.6, T.1 N., R.15 E., Wal- worth County, Hydrologic Unit 07090001, at bridge on country road, 0.2 mi south of Allens Grove; drainage area, 42.4 mi <sup>2</sup> .	1962-03	07-15-03	10.95	576	04-21-73	18.28	8,400
05432055 Livingston Branch Pecatonica River near Living- ston	Lat 42°54'01", long 90°22'23", in SW 1/4 SE 1/4 sec.16, T.5 N., R.1 E., Iowa County, Hydrologic Unit 07090003, on the left bank 75 ft upstream from Enloe Road and 2.7 mi east of Livingston; drainage area, 16.4 mi <sup>2</sup> .	1987-91# 1996-03	05-10-03	7.63	720	06-29-90	13.49	6,260
05432300 Rock Branch near Min- eral Point	Lat 42°50'02", long 90°09'15" in SE 1/4 sec.8, T.4 N., R.3 E., Iowa County, Hydrologic Unit 07090003, at box culvert on State Highway 23, 2.5 mi south of Min- eral Point; drainage area, 4.83 mi <sup>2</sup> .	1959-03	2003	C	B	07-05-93	22.63	3,100
05433500 Yellow- stone River near Blanchardville	Lat 42°46'55", long 89°59'50" in NE 1/4 sec.34, T.4 N., R.4 E., Lafayette County, Hydrologic Unit 07090003, 0.6 mi upstream from bridge on County Trunk Highway F, 7.0 mi west-southwest of Blan- chardville; drainage area, 28.5 mi <sup>2</sup> .	1954-65# 1966-77 1978-79# 1980-03	05-01-03 03-13-03	3.66 G3.96	177	06-29-90	11.40	8,500
05436200 Gill Creek near Brooklyn	Lat 42°49'38", long 89°26'43" in NW 1/4 sec.16, T.4 N., R.9 E., Green County, Hydrologic Unit 07090004, at culvert on State High- way 92, 4.3 mi west of Brooklyn; drainage area, 3.33 mi <sup>2</sup> .	1961-03	10-04-02	E11.08	E32	05-17-99	17.85	960
ILLINOIS RIVER BASIN								
05545100 Sugar Creek at Elkhorn	Lat 42°41'05", long 88°30'50" in SW 1/4 sec.29, T.3 N., R.17 E., Wal- worth County, Hydrologic Unit 07120006, at culvert on State High- way 11, 2.0 mi northeast of Elkhorn; drainage area, 6.63 mi <sup>2</sup> .	1962-03	07-15-03	11.06	42	04-21-73	17.47	900



Station Number and Name	Location and Drainage Area	Period of Record	Water Year 2003 Maximum			Period of Record Maximum		
			Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)
ILLINOIS RIVER BASIN--CONTINUED								
05545200 White River Tributary near Burlington	Lat 42°41'01", long 88°21'41"(revised) in SW 1/4 SW 1/4, sec. 27 (revised), T.3 N., R.18 E., Walworth County, Hydrologic Unit 07120006, at box culvert on State Highway 11, 4.5 mi west of Burlington; drainage area, 2.42 mi <sup>2</sup> .	1958-03	C	<10.37	<5	06-13-99	14.77	354
05548150 North Branch Nippersink Creek near Genoa City	Lat 42°30'15", long 88°23'01" in SW 1/4 NW 1/4 sec.33, T.1 N., R.18 E., Walworth County, Hydrologic Unit 07120006, at bridge on County Trunk Highway B, 3.0 mi west of Genoa City; drainage area, 13.6 mi <sup>2</sup> .	1962-03	07-15-03	9.81	39	06-12-00	14.18	563

# Operated as a continuous-record station

B Discharge not determined

C Peak not recorded

D Backwater

E Estimated

F Revised

G Backwater from ice

H Downstream gage

## DISCHARGE AT MISCELLANEOUS SITES

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft <sup>3</sup> /s)
STREAMS TRIBUTARY TO LAKE SUPERIOR						
04026117 Flag River	Lake Superior	Lat 46°41'25.4", long 91°16'58.5", in SE 1/4 SE 1/4 sec.30, T.49 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, near Port Wing.	0.57	--	11/04/02	0.07
04026120 Flag River	Lake Superior	Lat 46°46'57.6", long 91°22'25.2", in SE 1/4 NW 1/4 sec.28, T.50 N., R.8 W., Bayfield County, Hydrologic Unit 04010301, at Port Wing.	27.7	1964 1969-76 1988	11/04/02	33.7
04026124 East Fork Cranberry River Trib #2	Lake Superior	Lat 46°43'12.8", long 91°11'49.1", in NE 1/4 SE 1/4 SE 1/4 sec.13, T.49 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, near Herbster.	0.08	--	11/04/02	0
040261244 East Fork Cranberry River Tributary	Lake Superior	Lat 46°44'11.8", long 91°11'47.9", in SW 1/4 NW 1/4 SW 1/4 sec.12, T.49 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, near Herbster.	0.34	--	11/04/02	0
040261248 East Fork Cranberry River	Lake Superior	Lat 46°45'34", long 91°14'08", in NW 1/4 NW 1/4 NW 1/4 sec.3, T.49 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, near Lenawee Road, near Herbster.	4.51	--	11/20/02	13.8
04026125 Lenawee Creek Tributary #2	Lake Superior	Lat 46°42'50.5", long 91°13'36.63", in SE 1/4 NW 1/4 NE 1/4 sec.22, T.49 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Sand Trap Road, near Herbster.	0.17	--	11/04/02	0
040261254 Lenawee Creek Tributary	Lake Superior	Lat 46°42'47", long 91°13'42.5", in NW 1/4 SW 1/4 NE 1/4 sec.22, T.49 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Sand Trap Road, near Herbster.	0.14	--	11/04/02	0
040261255 Lenawee Creek Tributary #3	Lake Superior	Lat 46°42'53.5", long 91°13'55.4", in SE 1/4 NE 1/4 NW 1/4 sec.22, T.49 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Sand Trap Road, near Herbster.	0.16	--	11/04/02	0
040261258 Lenawee Creek	Lake Superior	Lat 46°43'47.6", long 91°14'24.3", in SE 1/4 NE 1/4 NE 1/4 sec.16, T.49 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Seven Mile Road, near Herbster.	2.70	--	11/04/02	0.07

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements		
					Date	Dis-charge (ft <sup>3</sup> /s)	
STREAMS TRIBUTARY TO LAKE SUPERIOR--CONTINUED							
04026126 Lenawee Creek	Lake Superior	Lat 46°45'30.9", long 91°14'14.8", in SW 1/4 NW 1/4 NW 1/4 sec.3, T.49 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, near Lenawee Road, near Herbster.	4.16	--	11/04/02	1.55	
040261261 Lenawee Creek Tributary	Lake Superior	Lat 46°45'32", long 91°14'15.3", in SW 1/4 NW 1/4 NW 1/4 sec.3, T.49 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, near Lenawee Road, near Herbster.	0.40	--	11/04/02	0.1	
04026127 East Branch East Fork Cranberry River	Lake Superior	Lat 46°46'53", long 91°14'06.3", in NW 1/4 NW 1/4 NW 1/4 sec.27, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Campbell Road, near Herbster.	4.95	--	11/05/02	3.49	
04026128 East Fork Cranberry River	Lake Superior	Lat 46°47'06", long 91°14'46.8", in NW 1/4 SW 1/4 NE 1/4 sec.28, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Lenawee Road, near Herbster.	17.6	--	11/04/02	22.7	
04026130 East Fork Cranberry River	Lake Superior	Lat 46°47'19.9", long 91°16'24.8", in NE 1/4 NW 1/4 sec.29, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Touve Road, near Herbster.	18.7	1970	11/04/02	25.1	
04026131 South Branch Cranberry River	Lake Superior	Lat 46°47'21.2", long 91°16'36.8", in NE 1/4 NW 1/4 NW 1/4 sec.29, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Touve Road, near Herbster.	5.38	--	11/04/02	1.22	
040261315 Cranberry River Tributary	Lake Superior	Lat 46°48'07.2", long 91°15'30.7", in NE 1/4 NE 1/4 NE 1/4 sec.20, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Lenawee Road, near Herbster.	0.18	--	11/04/02	0.03	
04026132 Cranberry River	Lake Superior	Lat 46°49'47", long 91°16'02", in SW 1/4 SW 1/4 NE 1/4 sec.8, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at old Highway 13, near Herbster.	31.0	1989	11/04/02	(a)	
04026135 Bark River	Lake Superior	Lat 46°47'34.6", long 91°12'17.5", in SE 1/4 SW 1/4 NW 1/4 sec.23, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Bark River Road, near Herbster.	0.92	--	11/05/02	0.53	
04026137 Bark River	Lake Superior	Lat 46°49'17.7", long 91°10'42.3", in SE 1/4 NE 1/4 SW 1/4 sec.12, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, near Bark River Road, near Herbster.	5.86	--	11/05/02	8.97	

## DISCHARGE AT MISCELLANEOUS SITES

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft <sup>3</sup> /s)
STREAMS TRIBUTARY TO LAKE SUPERIOR--CONTINUED						
04026138 Bark River Tributary	Lake Superior	Lat 46°49'21", long 91°10'36", in SE 1/4 SE 1/4 SE 1/4 sec.12, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, near Bark River Road, near Herbster.	0.14	--	11/05/02	0.56
04026139 East Branch Bark River	Lake Superior	Lat 46°49'25", long 91°10'36", in SE 1/4 SE 1/4 sec.12, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, near Bark River Road, near Herbster.	1.08	--	1/08/03	4.00
04026140 Bark River	Lake Superior	Lat 46°50'27.4", long 91°10'48.8", in SW 1/4 SE 1/4 NE 1/4 sec.1, T.50 N., R.7 W., Bayfield County, Hydrologic Unit 04010301, at Highway 13, near Cornucopia.	8.19	--	11/05/02	18.3
04026150 Lost Creek No. 2	Lost Creek	Lat 46°50'33", long 91°08'04", in NE 1/4 SE 1/4 NE 1/4 sec.5, T.50 N., R.6 W., Bayfield County, Hydrologic Unit 04010301, near Cornucopia.	1.94	1970	11/05/02	0.79
04026160 Siskiwit River	Lake Superior	Lat 46°51'17", long 91°05'29", in SW 1/4 SW 1/4 NW 1/4 sec.35, T.51 N., R.6 W., Bayfield County, Hydrologic Unit 04010301, at Cornucopia.	21.6	1950 1970	11/05/02	9.7
04026190 Sand River	Lake Superior	Lat 46°54'00", long 90°57'20", in SW 1/4 NE 1/4 sec.14, T.51 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, near Red Cliff.	26.9	1969-76 1980 1988	11/05/02	7.21
04026200 Sand River Tributary	Sand River	Lat 46°53'53", long 90°56'47", in SE 1/4 SE 1/4 sec.14, T.51 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, near Red Cliff.	1.11	1962 1964 1969	11/05/02	0.2
04026207 Raspberry River Tributary	Lake Superior	Lat 46°53'06", long 90°53'51", in NW 1/4 SE 1/4 NW 1/4 sec.20, T.51 N., R.4 W., Bayfield County, Hydrologic Unit 04010301, at Highway 13, near Red Cliff.	0.31	--	11/05/02	0.06
040262075 Raspberry River	Lake Superior	Lat 46°53'05", long 90°53'47", in NW 1/4 SE 1/4 NW 1/4 sec.20, T.51 N., R.4 W., Bayfield County, Hydrologic Unit 04010301, at Highway 13, near Sand Bay.	0.23	--	11/05/02	0.005
04026209 Raspberry River	Lake Superior	Lat 46°54'52", long 90°51'31", in NW 1/4 SW 1/4 NE 1/4 sec.10, T.51 N., R.4 W., Bayfield County, Hydrologic Unit 04010301, at Highway K, near Sand Bay.	8.17	--	11/05/02	0.86

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft <sup>3</sup> /s)
STREAMS TRIBUTARY TO LAKE SUPERIOR--CONTINUED						
04026211 North Branch Raspberry River	Lake Superior	Lat 46°55'58", long 90°51'12", in NW 1/4 NE 1/4 NE 1/4 sec.3, T.51 N., R.4 W., Bayfield County, Hydrologic Unit 04010301, at Blueberry Road, near Sand Bay.	0.48	--	11/05/02	0
04026213 South Branch Raspberry River	Lake Superior	Lat 46°54'07", long 90°49'01", in NW 1/4 NE 1/4 NE 1/4 sec.13, T.51 N., R.4 W., Bayfield County, Hydrologic Unit 04010301, at Emil Road, near Sand Bay.	0.13	--	11/05/02	0.05
04026215 Raspberry River	Lake Superior	Lat 46°55'24", long 90°49'51", in NW 1/4 SE 1/4 sec.2, T.51 N., R.4 W., Bayfield County, Hydrologic Unit 04010301, near Sand Bay.	13.8	1970	11/05/02	2.32
04026290 Sioux River	Lake Superior	Lat 46°39'16", long 91°00'36", in SE 1/4 NE 1/4 sec.8, T.48 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, near Washburn.	2.50	--	11/04/02	0.47
04026295 Sioux River	Lake Superior	Lat 46°40'35", long 90°59'22", in SE 1/4 SE 1/4 NE 1/4 sec.33, T.49 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, at Church Corner Road, near Washburn.	9.95	--	11/04/02	4.0
04026300 Sioux River	Lake Superior	Lat 46°41'20", long 90°57'02", in NE 1/4 NE 1/4 sec.35, T.49 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, near Washburn.	13.6	--	11/04/02	10.0
04026304 Fourmile Creek Tributary	Lake Superior	Lat 46°42'51", long 91°00'09", in SW 1/4 NE 1/4 SW 1/4 sec.21, T.49 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, at County Highway C, near Washburn.	0.17	--	11/05/02	0.03
04026305 Fourmile Creek	Lake Superior	Lat 46°42'50", long 91°00'02", in NE 1/4 SE 1/4 NW 1/4 sec.21, T.49 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, at County Highway C, near Washburn.	3.98	--	11/05/02	3.81
04026308 Sioux River	Lake Superior	Lat 46°42'37", long 90°55'33", in SE 1/4 SE 1/4 NE 1/4 sec.24, T.49 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, at Big Rock Road, near Washburn.	26.7	--	11/04/02	25.2
04026309 Sioux River	Lake Superior	Lat 46°43'32", long 90°54'27", in SE 1/4 NE 1/4 sec.18, T.49 N., R.4 W., Bayfield County, Hydrologic Unit 04010301, at Friendly Valley Road, near Washburn.	29.3	1970	11/05/02	28.7
04026311 Little Sioux River	Lake Superior	Lat 46°45'37", long 90°58'02", in NE 1/4 NE 1/4 NE 1/4 sec.3, T.49 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, at Little Sioux Road, near Washburn.	2.92	--	11/05/02	1.4

## DISCHARGE AT MISCELLANEOUS SITES

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft <sup>3</sup> /s)
STREAMS TRIBUTARY TO LAKE SUPERIOR--CONTINUED						
04026315 Little Sioux River	Lake Superior	Lat 46°43'35.6", long 90°54'27", in NE 1/4 SE 1/4 NE 1/4 sec.18, T.49 N., R.4 W., Bayfield County, Hydrologic Unit 04010301, near Washburn.	11.6	1970	11/05/02	13.63
04026316 Sioux River	Lake Superior	Lat 46°44'03", long 90°52'35", in SE 1/4 SW 1/4 sec.9, T.49 N., R.4 W., Bayfield County, Hydrologic Unit 04010301, at Highway 13, near Washburn.	43.9	--	11/05/02	(a)
04026318 Boyd Creek	Lake Superior	Lat 46°37'14", long 90°58'10", in NE 1/4 SE 1/4 sec.22, T.48 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, at Ondassagon Road, near Ashland.	3.12	1975-77	11/04/02	0.38
STREAMS TRIBUTARY TO LAKE MICHIGAN						
04072185 Trout Creek	Duck Creek	Lat 44°32'10", long 88°07'48", in NE 1/4 SE 1/4 sec.24, T.24 N., R.19 E., Brown County, Hydrologic Unit 04030103, at culvert on County Highway FF, 2.2 mi southwest of Howard.	15.4	1969 1976 1997-2002	02/18/03 03/19/03 04/21/03 05/20/03 06/09/03 07/17/03 07/31/03 08/11/03 09/11/03	1.01 6.20 18.8 4.34 5.17 0.77 17.6 3.85 0.19
04072233 Lancaster Brook	Duck Creek	Lat 44°33'29", long 88°06'10", in NE 1/4 NW 1/4 sec.17, T.24 N., R.20 E., Brown County, Hydrologic Unit 04030103, at Shawano Avenue at Howard.	--	1997-2002	03/19/03 04/21/03 05/20/03 06/09/03 07/17/03 07/31/03 08/11/03 09/11/03	3.79 15.1 4.50 6.93 1.02 17.7 4.34 0.43
04072490 Portage Canal	Fox River	Lat 43°32'19", long 89°27'32", in NE 1/4 NW 1/4 sec.8, T.12 N., R.9 E., Columbia County, Hydrologic Unit 04030201, at bridge on U.S. Highway 51, at Portage.	0.05	1965-66 1969-71 1974 1983 1991-95 2001	05/06/03	2.31
CHIPPEWA RIVER BASIN						
05357213 Little John Lake Tributary	Allequash Creek	Lat 46°01'29", long 89°39'00", in NE 1/4 NW 1/4 sec.20, T.41 N., R.7 E., Vilas County, Hydrologic Unit 07050002, at confluence with Allequash Creek, near Boulder Junction.	--	1992-2002	10/23/02 05/12/03 09/04/03	0.84 6.42 0.75
05357230 North Creek	Trout River	Lat 46°04'43", long 89°40'02", in SW 1/4 NE 1/4 sec.31, T.42 N., R.7 E., Vilas County, Hydrologic Unit 07050002, at inlet to Trout Lake, 2.6 mi southwest of Boulder Junction.	3.58	1992-96 1998-2002	05/12/03 06/30/03 09/04/03	17.5 1.37 1.22

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft <sup>3</sup> /s)
CHIPPEWA RIVER BASIN--CONTINUED						
05357239 Mann Creek	Trout River	Lat 46°00'41", long 89°40'33", in NW 1/4 NW 1/4 sec.30, T.41 N., R.7 E., Vilas County, Hydrologic Unit 07050002, at County Trunk Highway N, near Boulder Junction.	--	1991-96 1998-2002	05/12/03	16.2
					09/09/03	2.09
05369945 Eau Galle River	Chippewa River	Lat 44°52'02", long 92°15'07", in SE 1/4 NW 1/4 sec. 31, T.28 N., R.15 W., St. Croix County, Hydrologic Unit 07050005, approximately 550 ft upstyeam from French Creek and at Spring Valley.	47.9	(a) 2001	10/01/01	12.0
					11/26/01	23.7
					12/05/01	53.1
					03/14/02	104
					03/28/02	162
					04/11/02	323
					05/23/02	20.2
					05/30/02	15.7
					06/20/02	50.6
					07/16/02	15.0
08/22/02	135					
09/18/02	17.0					
ROCK RIVER BASIN						
05425830 Mauneshia River	Crawfish River	Lat 43°13'10", long 89°08'05", in SW 1/4 NE 1/4 sec. 25, T.9 N., R.11 E., Dane County, Hydrologic Unit 07090002, at country road, 4.7 mi northeast of Sun Prairie.	37.1	1967 1990	09/11/03	0.86
05427800 Token Creek	Yahara River	Lat 43°10'52", long 89°19'28", in SW 1/4 SW 1/4 sec. 4, T.8 N., R.10 E., Dane County, Hydrologic Unit 07090001, 8.0 mi northeast of State Capitol Building in Madison.	24.3	(b)	09/11/03	15.2
05427900 Sixmile Creek	Yahara River	Lat 43°10'29", long 89°25'58", in NE 1/4 NW 1/4 sec. 16, T.8 N., R.9 E., Dane County, Hydrologic Unit 07090002, 1.5 mi southeast of Waunakee.	41.1	(c)	09/11/03	2.28
05428600 West Branch Starkweather Creek	Yahara River	Lat 43°05'58", long 89°20'18", in SE 1/4 NW 1/4 sec. 5, T.7 N., R.10 E., Dane County, Hydrologic Unit 07090001, 2.9 mi northeast of State Capitol Building in Madison.	12.1	1990	09/12/03	0.89
05428650 East Branch Starkweather Creek	Starkweather Creek	Lat 43°05'57", long 89°19'54", in SW 1/4 NE 1/4 sec. 5, T.7 N., R.10 E., Dane County, Hydrologic Unit 07090001, 3.2 mi northeast of State Capitol Building in Madison.	8.89	1990	09/12/03	0.17
05429280 Nine Springs Creek	Yahara River	Lat 43°01'51", long 89°20'50", in NE 1/4 NE 1/4 sec. 31, T.7 N., R.10 E., Dane County, Hydrologic Unit 07090001, at Moorland Road, 3.5 mi northeast of State Capitol Building in Madison.	10.8	1990	09/11/03	7.01

## DISCHARGE AT MISCELLANEOUS SITES

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
ROCK RIVER BASIN--CONTINUED						
05429580 Door Creek	Yahara River	Lat 43°02'54", long 89°13'54", in NE 1/4 NE 1/4 sec. 30, T.7 N., R.11 E., Dane County, Hydrologic Unit 07090001, 2.5 mi southwest of Cottage Grove.	15.3	(d)	09/11/03	1.28
05429720 Yahara River	Rock River	Lat 42°52'52", long 89°12'39", in NE 1/4 SE 1/4 sec. 20, T.5 N., R.11 E., Dane County, Hydrologic Unit 07090001, at dam, 2.5 mi south of Stoughton.	414	1990	09/11/03	31.0
05436000 Mt. Vernon Creek	West Branch Sugar River	Lat 42°55'20", long 89°37'30", in NW 1/4 SW 1/4 sec. 12, T.5 N., R.7 E., Dane County, Hydrologic Unit 07090004, 2.5 mi southeast of Mt. Vernon.	16.4	(e)	09/11/03	11.5

- (a) Discharge not measured because of backwater effects from Lake Superior  
 (b) Continuous-record station 1964-66, 1976-81  
 (c) Continuous-record station 1976-82  
 (d) Continuous-record station 1976-79  
 (e) Continuous-record station 1954-65, 1976-80



WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

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Water-quality data in this section are for samples collected at gaging stations and other sites on streams for reconnaissance or other purposes on a non-continuous basis.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfiltered uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, water field, mg/L as CaCO3 (39086)	Bicarbonate, water field, titr., mg/L (00453)	Carbonate, water field, titr., mg/L (00452)	Chloride, water, field, mg/L (00940)	Sulfate, water, field, mg/L (00945)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	1245	4.9	10	742	8.6	7.5	810	10.5	172	208	1	75.9	134
NOV													
05...	0840	4.4	40	738	12.6	7.9	1,130	--	293	352	2	113	136
DEC													
04...	1245	2.2	40	743	15.6	7.8	1,640	0.5	417	502	3	200	143
JAN 2003													
08...	1330	4.9	40	723	12.2	7.6	1,490	0.0	345	418	1	191	140
FEB													
05...	1450	3.5	40	742	10.8	7.2	1,670	-0.2	423	513	1	228	92.8
MAR													
04...	1315	4.6	40	739	13.0	7.4	2,350	-0.2	467	565	2	425	117
18...	1350	190	10	743	15.1	7.4	401	-0.2	81	98	<1	--	--
APR													
10...	1350	29	10	738	13.2	7.8	898	6.4	211	251	3	86.6	105
23...	0930	114	10	749	10.8	7.8	834	7.3	220	269	<1	--	--
MAY													
06...	0745	102	10	737	9.3	7.7	768	8.9	203	248	<1	63.3	86.3
13...	1210	258	10	740	9.7	7.7	733	11.9	216	263	<1	--	--
29...	1025	9.2	40	740	8.2	7.9	900	15.4	273	321	6	--	--
JUN													
03...	1430	15	40	742	11.2	8.1	852	17.9	283	323	11	75.0	69.4
18...	1100	17	10	741	7.6	7.6	948	19.9	267	325	<1	--	--
JUL													
08...	1145	1.9	40	735	5.4	7.7	1,060	20.6	273	332	3	103	131
22...	1145	0.86	40	743	6.4	7.6	913	20.4	286	348	4	--	--
AUG													
06...	1300	287	10	734	6.9	7.5	492	20.7	159	194	0.0	25.0	40.2
SEP													
03...	1015	1.3	40	749	7.8	7.8	911	18.0	301	355	6	100	47.5

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat fit inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat fit incrm. titr., field, mg/L (00453)	Carbonate, wat fit incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	1150	3.1	10	746	8.0	7.8	603	12.9	131	156	2	89.1	34.4
NOV													
04...	1455	0.96	40	747	16.5	8.5	1,330	6.0	220	254	6	248	79.9
DEC													
03...	1500	1.4	40	754	E16.2	7.9	5,210	-0.1	199	240	1	1,490	82.4
FEB 2003													
03...	1105	13	40	731	13.2	7.8	1,820	-0.3	74	89	<1	440	52.0
MAR													
06...	1100	1.5	40	746	12.7	7.6	12,800	-0.3	148	179	1	4,270	117
19...	1045	1.9	40	740	13.4	7.8	4,590	3.7	165	198	1	--	--
APR													
08...	1200	7.1	40	753	13.1	8.1	13,100	2.5	122	147	<1	3,800	101
22...	0945	4.5	40	744	12.3	7.8	2,540	7.8	174	205	3	--	--
MAY													
08...	1035	9.8	10	743	15.3	8.5	13,100	13.7	188	203	13	262	55.1
12...	1020	18	10	739	16.3	8.5	1,150	12.2	194	226	5	--	--
28...	0930	2.6	10	739	6.5	7.6	2,120	16.2	266	324	<1	--	--
JUN													
02...	1010	2.5	10	745	7.6	7.6	1,570	14.6	237	289	<1	337	59.0
19...	1105	2.4	40	748	10.7	7.8	1,620	18.9	234	285	<1	--	--
JUL													
07...	1055	17	10	739	6.9	7.6	506	22.2	82	100	<1	79.6	18.5
21...	1110	3.6	40	737	13.2	8.1	1,360	23.4	190	213	9	--	--
AUG													
07...	1100	2.2	10	744	10.2	7.9	643	26.0	112	129	3	115	25.9
SEP													
02...	1215	1.8	40	752	11.5	8.1	1,020	21.4	182	206	7	195	48.9

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	1,4-Naphthoquinone, water, fltrd, ug/L (61611)	1-Naphthol, water, fltrd 0.7u GF ug/L (49295)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	0.53	<0.04	0.56	E.004	0.22	0.05	0.26	0.4	<0.1	0.4	7.7	--	--
NOV													
05...	0.82	<0.04	1.87	0.008	0.07	0.04	0.096	0.2	<0.1	0.2	10.8	--	--
DEC													
04...	0.93	E.04	3.96	0.013	0.11	0.05	0.165	0.3	<0.1	0.3	10.5	--	--
JAN 2003													
08...	1.8	1.01	2.70	0.034	0.22	<0.02	0.24	0.1	<0.1	0.1	7.0	--	--
FEB													
05...	1.4	0.64	6.80	0.116	0.10	0.09	0.158	0.5	<0.1	0.5	6.0	--	--
MAR													
04...	4.7	3.49	6.18	0.139	0.08	0.16	0.172	1.0	<0.1	1.0	8.6	--	--
18...	4.3	0.53	3.27	0.184	0.32	--	0.55	--	--	--	--	--	--
APR													
10...	1.2	0.06	3.63	0.027	0.04	0.06	0.091	0.3	<0.1	0.3	13.9	--	--
23...	1.6	E.03	6.62	0.039	0.05	--	0.096	--	--	--	--	--	--
MAY													
06...	1.7	0.10	1.64	0.034	0.11	0.21	0.20	1.3	<0.1	1.3	17.9	--	--
13...	1.9	<0.04	6.75	0.057	0.07	--	0.138	--	--	--	--	--	--
29...	1.6	0.07	1.03	0.046	0.17	--	0.24	--	--	--	--	--	--
JUN													
03...	1.9	<0.04	0.85	0.028	0.13	0.06	0.28	0.4	<0.1	0.4	22.3	--	--
18...	1.9	<0.04	5.34	0.090	0.14	--	0.22	--	--	--	--	--	--
JUL													
08...	1.3	0.10	0.33	0.009	0.40	0.10	0.50	0.6	<0.1	0.6	16.6	--	--
22...	1.5	0.07	0.28	E.006	0.45	--	0.53	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	0.09	--	0.8	<0.1	0.8	21.8	--	--
SEP													
03...	1.5	<0.04	0.54	E.006	0.35	0.13	0.44	1.0	<0.1	1.0	18.6	--	--
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	0.29	<0.04	0.55	0.028	0.09	0.04	0.135	0.3	<0.1	0.3	4.9	<0.05	<0.09
NOV													
04...	0.24	<0.04	0.43	E.004	0.07	<0.02	0.077	<0.1	<0.1	<0.1	2.9	<0.05	<0.09
DEC													
03...	0.55	0.23	0.70	0.028	0.19	0.05	0.21	0.5	<0.1	0.5	3.1	<0.05	<0.09
FEB 2003													
03...	2.7	1.35	3.76	0.127	0.26	0.59	0.42	12.6	<0.1	12.6	16.3	<0.05	<0.09
MAR													
06...	1.1	0.38	0.47	0.058	0.17	0.08	0.28	0.9	<0.1	0.9	7.7	<0.05	<0.09
19...	E.83	E.21	E.84	E.047	E.10	--	E.175	--	--	--	--	<0.05	<0.09
APR													
08...	0.53	0.13	0.86	0.040	0.05	0.10	0.111	1.3	<0.1	1.3	5.1	<0.05	<0.09
22...	0.45	<0.04	0.58	0.008	0.06	--	0.113	--	--	--	--	<0.05	<0.09
MAY													
08...	0.37	<0.04	0.94	<0.008	0.03	0.06	E.072	0.4	<0.1	0.4	4.3	<0.05	<0.09
12...	0.48	<0.04	0.95	0.014	0.02	--	0.067	--	--	--	--	<0.05	<0.09
28...	0.58	0.07	0.23	0.036	0.19	--	0.25	--	--	--	--	<0.05	<0.09
JUN													
02...	0.47	0.05	0.48	0.021	0.19	0.06	0.25	0.5	<0.1	0.5	3.8	<0.05	<0.09
19...	0.48	0.04	0.25	0.012	0.20	--	0.26	--	--	--	--	<0.05	<0.09
JUL													
07...	0.62	0.07	0.42	0.033	0.12	0.15	0.195	0.9	<0.1	0.9	6.2	--	--
21...	0.43	<0.04	<0.06	<0.008	0.33	--	0.39	--	--	--	--	<0.05	<0.09
AUG													
07...	0.39	<0.04	0.07	0.020	0.15	0.03	0.199	0.2	<0.1	0.2	7.0	<0.05	<0.09
SEP													
02...	0.46	<0.04	<0.06	<0.008	0.32	0.03	0.37	0.2	<0.1	0.2	3.6	<0.05	<0.09

WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2-(4-t-Butyl-phenoxy)cyclohexanol wat flt ug/L (61637)	2,5-Di-chloro-aniline water, fltrd, ug/L (61614)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	2-[(2-Et-6-Me-Ph)-amino]propan-1-ol, ug/L (61615)	2Amino-N-iso-propyl-benz-amide, wat flt ug/L (61617)	2Chloro-2,6-'diethyl acet-anilide wat flt ug/L (61618)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl-6-methyl-aniline water, fltrd, ug/L (61620)	3-(Tri-fluoro-methyl)aniline water, fltrd, ug/L (61630)	3,4-Di-chloro-aniline water fltrd, ug/L (61625)	3,5-Di-chloro-aniline water, fltrd, ug/L (61627)	3-Phen-oxyl-benzyl alcohol water, fltrd, ug/L (61629)	4-(MeOH)-pendi-meth-alin, wat flt ug/L (61665)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	--	--	<0.006	--	--	--	E.021	--	--	--	--	--	--
NOV													
05...	--	--	<0.006	--	--	--	E.035	--	--	--	--	--	--
DEC													
04...	--	--	<0.006	--	--	--	E.033	--	--	--	--	--	--
JAN 2003													
08...	--	--	<0.006	--	--	--	E.018	--	--	--	--	--	--
FEB													
05...	--	--	<0.006	--	--	--	E.054	--	--	--	--	--	--
MAR													
04...	--	--	<0.006	--	--	--	E.043	--	--	--	--	--	--
18...	--	--	<0.006	--	--	--	E.036	--	--	--	--	--	--
APR													
10...	--	--	<0.006	--	--	--	E.029	--	--	--	--	--	--
23...	--	--	<0.006	--	--	--	E.040	--	--	--	--	--	--
MAY													
06...	--	--	<0.006	--	--	--	E.026	--	--	--	--	--	--
13...	--	--	<0.006	--	--	--	E.075	--	--	--	--	--	--
29...	--	--	<0.006	--	--	--	E.046	--	--	--	--	--	--
JUN													
03...	--	--	<0.006	--	--	--	E.063	--	--	--	--	--	--
18...	--	--	<0.006	--	--	--	E.177	--	--	--	--	--	--
JUL													
08...	--	--	<0.006	--	--	--	E.057	--	--	--	--	--	--
22...	--	--	<0.006	--	--	--	E.063	--	--	--	--	--	--
AUG													
06...	--	--	<0.006	--	--	--	E.146	--	--	--	--	--	--
SEP													
03...	--	--	<0.006	--	--	--	E.037	--	--	--	--	--	--
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	<0.01	<0.03	<0.006	--	<0.005	<0.005	E.007	<0.004	<0.01	<0.004	<0.005	--	--
NOV													
04...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.012	<0.004	<0.01	<0.004	<0.005	<0.05	--
DEC													
03...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.012	<0.004	<0.01	<0.004	<0.005	<0.05	<0.1
FEB 2003													
03...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.012	<0.004	<0.01	<0.004	<0.005	<0.05	<0.1
MAR													
06...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	<0.020	<0.004	<0.01	<0.004	<0.005	<0.05	<0.1
19...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.013	<0.004	<0.01	<0.004	<0.005	<0.05	<0.1
APR													
08...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.011	<0.004	<0.01	<0.004	<0.005	<0.05	--
22...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.033	<0.004	<0.01	<0.004	<0.005	<0.05	<0.1
MAY													
08...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.038	<0.004	<0.01	<0.004	<0.005	<0.05	<0.1
12...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.027	<0.004	<0.01	<0.004	<0.005	<0.05	<0.1
28...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.018	<0.004	<0.01	0.063	<0.005	<0.05	<0.1
JUN													
02...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.070	<0.004	<0.01	0.084	<0.005	<0.05	<0.1
19...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.021	<0.004	<0.01	0.038	<0.005	<0.05	<0.1
JUL													
07...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.029	<0.004	<0.01	0.018	<0.005	<0.05	<0.1
21...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.014	<0.004	<0.01	0.014	<0.005	--	--
AUG													
07...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	<0.007	<0.004	<0.01	0.009	<0.005	<0.05	--
SEP													
02...	<0.01	<0.03	<0.006	<0.1	<0.005	<0.005	E.013	<0.004	<0.01	0.009	<0.005	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	4,4-Di' chloro-benzo-phen-one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl-methyl sulfone, water, fltrd, ug/L (61634)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-Endo-sulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl oxon, water, fltrd, ug/L (61635)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	--	--	--	<0.006	<0.004	--	<0.005	--	106	0.050	--	<0.050	<0.010
NOV													
05...	--	--	--	<0.006	<0.004	--	<0.005	--	104	0.062	--	<0.050	<0.010
DEC													
04...	--	--	--	<0.006	<0.004	--	<0.005	--	103	0.053	--	<0.050	<0.010
JAN 2003													
08...	--	--	--	<0.006	<0.004	--	<0.005	--	98.1	0.042	--	<0.050	<0.010
FEB													
05...	--	--	--	<0.006	<0.004	--	<0.005	--	99.1	0.041	--	<0.050	<0.010
MAR													
04...	--	--	--	<0.006	<0.004	--	<0.005	--	92.4	0.041	--	<0.050	<0.010
18...	--	--	--	<0.006	<0.004	--	<0.005	--	92.0	0.076	--	<0.050	<0.010
APR													
10...	--	--	--	<0.006	<0.004	--	<0.005	--	86.2	0.053	--	<0.050	<0.010
23...	--	--	--	0.008	<0.004	--	<0.005	--	85.6	0.079	--	<0.050	<0.010
MAY													
06...	--	--	--	0.013	E.004	--	<0.005	--	93.5	0.070	--	<0.050	<0.010
13...	--	--	--	0.127	0.239	--	<0.005	--	108	0.556	--	<0.050	<0.010
29...	--	--	--	0.026	0.007	--	<0.005	--	86.5	0.134	--	<0.050	<0.010
JUN													
03...	--	--	--	0.047	0.015	--	<0.005	--	80.0	0.211	--	<0.050	<0.010
18...	--	--	--	0.208	0.007	--	<0.005	--	88.6	2.19	--	<0.050	<0.010
JUL													
08...	--	--	--	E.005	<0.004	--	<0.005	--	99.1	0.362	--	<0.050	<0.010
22...	--	--	--	<0.006	<0.004	--	<0.005	--	103	0.289	--	<0.050	<0.010
AUG													
06...	--	--	--	0.016	<0.010	--	<0.005	--	88.8	0.403	--	<0.050	<0.010
SEP													
03...	--	--	--	<0.006	<0.004	--	<0.005	--	106	0.123	--	<0.050	<0.010
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	<0.003	E.006	--	<0.006	<0.004	<0.005	<0.005	111	108	0.013	<0.02	<0.050	<0.010
NOV													
04...	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	93.2	102	0.012	<0.02	<0.050	<0.010
DEC													
03...	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	103	102	0.015	<0.02	<0.050	<0.010
FEB 2003													
03...	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	99.1	100	0.022	<0.02	<0.050	<0.010
MAR													
06...	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	85.2	95.4	0.017	<0.02	<0.050	<0.010
19...	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	91.7	95.3	E.016	<0.02	<0.050	<0.010
APR													
08...	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	83.5	85.3	0.031	<0.02	<0.070	<0.010
22...	<0.003	E.004	<0.03	0.049	0.006	<0.005	<0.005	90.8	85.6	0.121	<0.02	<0.050	<0.010
MAY													
08...	<0.003	<0.006	<0.03	0.050	<0.004	<0.005	<0.005	95.3	95.4	0.062	<0.02	<0.050	<0.010
12...	<0.003	E.008	<0.03	0.042	<0.004	<0.005	<0.005	98.1	107	0.045	<0.02	<0.050	<0.010
28...	<0.003	E.003	<0.03	<0.006	<0.004	<0.005	<0.005	94.7	89.2	0.025	<0.02	<0.050	<0.010
JUN													
02...	<0.003	E.007	<0.03	0.051	0.008	<0.005	<0.005	93.6	108	0.297	<0.02	<0.050	<0.010
19...	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	104	91.6	0.051	<0.02	<0.050	<0.010
JUL													
07...	<0.003	<0.006	<0.03	0.009	<0.004	<0.005	<0.005	86.1	95.4	0.062	<0.02	<0.050	<0.010
21...	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	83.7	103	0.022	<0.03	<0.050	<0.010
AUG													
07...	<0.003	E.007	<0.03	<0.006	<0.004	<0.005	<0.005	89.4	96.4	0.016	<0.02	<0.050	<0.010
SEP													
02...	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	90.4	81.3	0.018	<0.02	<0.050	<0.010

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	beta-Endo-sulfan, water, fltrd, ug/L (34357)	Bifen-thrin, water, fltrd, ug/L (61580)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd, 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd, 0.7u GF ug/L (82674)	Chlor-pyri-fos, water, fltrd, ug/L (61636)	Chlor-pyri-fos, water, fltrd, ug/L (38933)	cis-Per-methrin, water, fltrd, 0.7u GF ug/L (82687)	cis-Propi-cona-zole, water, fltrd, ug/L (79846)	Cyana-zine, water, fltrd, ug/L (04041)	Cyclo-ate, water, fltrd, ug/L (04031)	Cyflu-thrin, water, fltrd, ug/L (61585)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	0.018	--	--	--
NOV													
05...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
DEC													
04...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	E.014	--	--	--
JAN 2003													
08...	--	--	0.004	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
FEB													
05...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
MAR													
04...	--	--	<0.010	<0.041	<0.020	--	<0.005	<0.006	--	E.009	--	--	--
18...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
APR													
10...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
23...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
MAY													
06...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
13...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
29...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
JUN													
03...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
18...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
JUL													
08...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
22...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
AUG													
06...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
SEP													
03...	--	--	<0.002	<0.041	<0.020	--	<0.005	<0.006	--	<0.018	--	--	--
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	<0.01	<0.005	<0.002	E.009	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
NOV													
04...	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
DEC													
03...	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
FEB 2003													
03...	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
MAR													
06...	<0.01	<0.005	<0.002	<0.041	<0.040	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
19...	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
APR													
08...	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
22...	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
MAY													
08...	<0.01	<0.005	<0.002	E.005	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
12...	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
28...	<0.01	<0.005	<0.002	E.005	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
JUN													
02...	<0.01	<0.005	<0.002	E.016	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
19...	<0.01	<0.005	<0.002	E.012	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
JUL													
07...	<0.01	<0.005	<0.002	E.034	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
21...	<0.01	<0.005	<0.002	E.005	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
AUG													
07...	<0.01	<0.005	<0.002	E.038	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009
SEP													
02...	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.008	<0.009

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cypermethrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diazi-non-d10 sur2002 /9002, wat unf percent recovry (99223)	Diazi-non-d10 surrog, wat flt 0.7u GF percent recovry (91063)	Dicro-tophos, water, fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	e-Di-metho-morph, water, fltrd, ug/L (79844)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	--	<0.003	<0.004	0.006	--	125	--	<0.005	--	--	--	<0.02	--
NOV													
05...	--	<0.003	<0.004	<0.005	--	126	--	<0.005	--	--	--	<0.02	--
DEC													
04...	--	<0.003	<0.004	<0.005	--	107	--	<0.005	--	--	--	<0.02	--
JAN 2003													
08...	--	<0.003	<0.004	<0.005	--	124	--	<0.005	--	--	--	<0.02	--
FEB													
05...	--	<0.003	<0.004	<0.005	--	110	--	<0.005	--	--	--	<0.02	--
MAR													
04...	--	<0.003	<0.004	<0.005	--	107	--	<0.005	--	--	--	<0.02	--
18...	--	<0.003	<0.004	<0.005	--	129	--	<0.005	--	--	--	<0.02	--
APR													
10...	--	<0.003	<0.004	<0.005	--	120	--	<0.005	--	--	--	<0.02	--
23...	--	<0.003	<0.004	<0.005	--	105	--	<0.005	--	--	--	<0.02	--
MAY													
06...	--	<0.003	<0.004	<0.005	--	114	--	<0.005	--	--	--	<0.02	--
13...	--	<0.003	<0.004	<0.005	--	107	--	<0.005	--	--	--	<0.02	--
29...	--	<0.003	<0.004	<0.005	--	116	--	<0.005	--	--	--	<0.02	--
JUN													
03...	--	<0.003	<0.004	<0.005	--	89.2	--	<0.005	--	--	--	<0.02	--
18...	--	<0.003	<0.004	<0.005	--	127	--	<0.005	--	--	--	<0.02	--
JUL													
08...	--	<0.003	<0.004	<0.005	--	100	--	<0.005	--	--	--	<0.02	--
22...	--	<0.003	<0.004	<0.005	--	112	--	<0.005	--	--	--	<0.02	--
AUG													
06...	--	<0.003	<0.004	<0.005	--	99.1	--	<0.005	--	--	--	<0.02	--
SEP													
03...	--	<0.003	<0.004	<0.005	--	130	--	<0.005	--	--	--	<0.02	--
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	<0.009	<0.003	<0.004	0.066	102	126	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
NOV													
04...	<0.009	<0.003	<0.004	0.006	89.8	133	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
DEC													
03...	<0.009	<0.003	<0.004	E.009	112	111	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
FEB 2003													
03...	<0.009	<0.003	<0.004	<0.005	103	113	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
MAR													
06...	<0.009	<0.003	<0.004	0.027	105	127	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
19...	<0.009	<0.003	<0.004	<0.005	114	E125	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
APR													
08...	<0.009	<0.003	<0.004	<0.005	95.3	112	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
22...	<0.009	<0.003	<0.004	0.007	96.3	108	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
MAY													
08...	<0.009	<0.003	<0.004	0.014	116	113	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
12...	<0.009	<0.003	<0.004	0.013	103	115	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
28...	<0.009	<0.003	<0.004	0.009	102	113	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
JUN													
02...	<0.009	<0.003	<0.004	0.024	110	125	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
19...	<0.009	<0.003	<0.004	0.025	98.1	138	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
JUL													
07...	<0.009	E.002	<0.004	0.056	106	104	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
21...	<0.009	<0.003	<0.004	0.010	87.1	117	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
AUG													
07...	<0.009	<0.003	<0.004	0.027	107	94.8	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02
SEP													
02...	<0.009	<0.003	<0.004	E.004	90.9	121	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Endo- sulfan ether, water, fltrd, ug/L (61642)	Endo- sulfan sulfate water, fltrd, ug/L (61590)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal- flur- alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Fenami- phos sulfone water, fltrd, ug/L (61645)	Fenami- phos sulf- oxide, water, fltrd, ug/L (61646)	Fenami- phos, water, fltrd, ug/L (61591)	Fen- thion sulf- oxide, water, fltrd, ug/L (61647)	Fen- thion, water, fltrd, ug/L (38801)	Desulf- inyl- fipro- nil amide, wat flt ug/L (62169)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	--	--	<0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
NOV													
05...	--	--	<0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
DEC													
04...	--	--	0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
JAN 2003													
08...	--	--	0.003	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
FEB													
05...	--	--	<0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
MAR													
04...	--	--	0.003	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
18...	--	--	<0.004	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
APR													
10...	--	--	<0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
23...	--	--	<0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
MAY													
06...	--	--	0.005	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
13...	--	--	0.007	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
29...	--	--	E.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
JUN													
03...	--	--	<0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
18...	--	--	<0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
JUL													
08...	--	--	E.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
22...	--	--	<0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
AUG													
06...	--	--	<0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
SEP													
03...	--	--	<0.002	<0.009	--	--	<0.005	--	--	--	--	--	<0.009
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
NOV													
04...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
DEC													
03...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
FEB 2003													
03...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
MAR													
06...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
19...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
APR													
08...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
22...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
MAY													
08...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
12...	<0.004	<0.006	<0.045	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
28...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
JUN													
02...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
19...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
JUL													
07...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
21...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
AUG													
07...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009
SEP													
02...	<0.004	<0.006	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.02	<0.009



## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Flumetralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexazinone, water, fltrd, ug/L (04025)	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF (82666)	Malaoxon, water, fltrd, ug/L (61652)	Malathion, water, fltrd, ug/L (39532)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	<0.005	<0.005	E.004	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
NOV													
05...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
DEC													
04...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
JAN 2003													
08...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
FEB													
05...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
MAR													
04...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
18...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	--
APR													
10...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
23...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
MAY													
06...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
13...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
29...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
JUN													
03...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
18...	<0.005	<0.005	E.003	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
JUL													
08...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
22...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
AUG													
06...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
SEP													
03...	<0.005	<0.005	<0.007	--	--	<0.003	--	--	--	<0.004	<0.035	--	<0.027
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
NOV													
04...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
DEC													
03...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
FEB 2003													
03...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
MAR													
06...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
19...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	E.020	<0.035	<0.008	<0.027
APR													
08...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.010	<0.035	<0.008	<0.027
22...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
MAY													
08...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
12...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
28...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
JUN													
02...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
19...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	M	<0.003	<0.004	<0.035	<0.008	<0.027
JUL													
07...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
21...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027
AUG													
07...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	0.034
SEP													
02...	<0.005	<0.005	<0.007	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004	<0.035	<0.008	<0.027

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Meta-laxyl, water, fltrd, ug/L (61596)	Methi-althion water, fltrd, ug/L (61598)	c-Per-methric acid methyl ester, wat flt ug/L (79842)	Methyl para-oxon, water, fltrd, ug/L (61664)	Methyl para-thion, water, fltrd, 0.7u GF ug/L (82667)	t-Per-methric acid methyl ester, wat flt ug/L (79843)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd, 0.7u GF ug/L (82671)	Myclo-butanil water, fltrd, ug/L (61599)	Naprop-amide, water, fltrd, 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phos-phothioate wat flt ug/L (61660)	Oxy-fluor-fen, water, fltrd, ug/L (61600)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	--	--	--	--	<0.006	--	0.063	<0.006	<0.002	--	<0.007	--	--
NOV													
05...	--	--	--	--	<0.006	--	0.076	<0.006	<0.002	--	<0.007	--	--
DEC													
04...	--	--	--	--	<0.006	--	0.078	<0.006	<0.002	--	<0.007	--	--
JAN 2003													
08...	--	--	--	--	<0.006	--	0.068	<0.006	<0.002	--	<0.007	--	--
FEB													
05...	--	--	--	--	<0.006	--	0.022	<0.006	<0.002	--	<0.007	--	--
MAR													
04...	--	--	--	--	<0.006	--	0.031	<0.006	<0.002	--	<0.007	--	--
18...	--	--	--	--	<0.006	--	0.156	<0.006	<0.002	--	<0.007	--	--
APR													
10...	--	--	--	--	<0.006	--	0.028	<0.006	<0.002	--	<0.007	--	--
23...	--	--	--	--	<0.006	--	0.046	<0.006	<0.002	--	<0.007	--	--
MAY													
06...	--	--	--	--	<0.006	--	0.129	<0.006	<0.002	--	<0.007	--	--
13...	--	--	--	--	<0.006	--	0.375	<0.006	<0.002	--	<0.007	--	--
29...	--	--	--	--	<0.006	--	0.092	<0.006	<0.002	--	<0.007	--	--
JUN													
03...	--	--	--	--	<0.006	--	0.152	<0.006	<0.002	--	<0.007	--	--
18...	--	--	--	--	<0.006	--	1.20	0.017	<0.002	--	<0.007	--	--
JUL													
08...	--	--	--	--	<0.006	--	0.099	<0.006	<0.002	--	<0.007	--	--
22...	--	--	--	--	<0.006	--	0.088	<0.006	<0.002	--	<0.007	--	--
AUG													
06...	--	--	--	--	<0.006	--	0.318	<0.006	<0.002	--	<0.007	--	--
SEP													
03...	--	--	--	--	<0.006	--	0.042	<0.006	<0.002	--	<0.007	--	--
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.006	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
NOV													
04...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	<0.013	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
DEC													
03...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.001	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
FEB 2003													
03...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.013	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
MAR													
06...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	<0.013	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
19...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	<0.013	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
APR													
08...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.011	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
22...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.053	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
MAY													
08...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.031	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
12...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.032	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
28...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.013	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
JUN													
02...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.065	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
19...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.010	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
JUL													
07...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.011	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
21...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.003	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
AUG													
07...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.005	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007
SEP													
02...	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	<0.013	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	p,p'- DDE, water, fltrd, ug/L (34653)	Para- oxon, water, fltrd, ug/L (61663)	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd, 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd, 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd, 0.7u GF ug/L (82664)	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste- bupirim water, fltrd, ug/L (61602)	Pro- fenofos water, fltrd, ug/L (61603)	Prome- ton, water, fltrd, ug/L (04037)	Prome- tryn, water, fltrd, ug/L (04036)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	E.01	--
NOV													
05...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	<0.01	--
DEC													
04...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	E.01	--
JAN 2003													
08...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	E.01	--
FEB													
05...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	E.01	--
MAR													
04...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	E.01	--
18...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	<0.01	--
APR													
10...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	<0.01	--
23...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	<0.01	--
MAY													
06...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	M	--
13...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	<0.01	--
29...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	E.01	--
JUN													
03...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	<0.01	--
18...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	M	--
JUL													
08...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	0.03	--
22...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	0.01	--
AUG													
06...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	<0.01	--
SEP													
03...	<0.003	--	<0.010	<0.004	<0.022	--	<0.011	--	--	--	--	E.01	--
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.02	<0.005
NOV													
04...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.02	<0.005
DEC													
03...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	E.01	<0.005
FEB 2003													
03...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.02	<0.005
MAR													
06...	<0.003	<0.008	<0.010	--	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	E.01	<0.005
19...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	E.03	<0.005
APR													
08...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.02	<0.005
22...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.02	<0.005
MAY													
08...	<0.003	<0.008	<0.010	<0.004	0.029	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.02	<0.005
12...	<0.003	<0.008	<0.010	<0.004	0.028	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.02	<0.005
28...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.03	<0.005
JUN													
02...	<0.003	<0.008	<0.010	<0.004	E.013	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.03	<0.005
19...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.02	<0.005
JUL													
07...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.02	<0.005
21...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.02	<0.005
AUG													
07...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	0.07	<0.005
SEP													
02...	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005	<0.006	E.01	<0.005

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pron- amide, water, fltrd 0.7u GF ug/L (82676)	Pro- chlor, water, fltrd ug/L (04024)	Pro- panil, water, fltrd 0.7u GF ug/L (82679)	Propar- gite, water, fltrd 0.7u GF ug/L (82685)	Propet- amphos, water, fltrd, ug/L (61604)	Sima- zine, water, fltrd, ug/L (04035)	Sulfo- tepp, water, fltrd, ug/L (61605)	Sulpro- fos, water, fltrd, ug/L (38716)	Tebu- pirim- phos- oxon, water, fltrd, ug/L (61669)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Teflu- thrin metab- olite R119365 wat flt ug/L (61671)	Teflu- thrin metab- olite R152913 wat flt ug/L (61672)	Teflu- thrin, water, fltrd, ug/L (61606)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	<0.004	<0.010	<0.011	<0.02	--	0.012	--	--	--	<0.02	--	--	--
NOV													
05...	<0.004	<0.010	<0.011	<0.02	--	<0.005	--	--	--	<0.02	--	--	--
DEC													
04...	<0.004	<0.010	<0.011	<0.02	--	0.006	--	--	--	<0.02	--	--	--
JAN 2003													
08...	<0.004	<0.010	<0.011	<0.02	--	0.006	--	--	--	<0.02	--	--	--
FEB													
05...	<0.004	<0.010	<0.011	<0.02	--	<0.005	--	--	--	<0.02	--	--	--
MAR													
04...	<0.004	<0.010	<0.011	<0.02	--	E.005	--	--	--	E.01	--	--	--
18...	<0.010	<0.010	<0.011	<0.02	--	0.155	--	--	--	<0.02	--	--	--
APR													
10...	<0.004	<0.010	<0.011	<0.02	--	0.024	--	--	--	<0.02	--	--	--
23...	<0.004	<0.010	<0.011	<0.02	--	0.075	--	--	--	<0.02	--	--	--
MAY													
06...	<0.004	<0.010	<0.011	<0.02	--	0.017	--	--	--	<0.02	--	--	--
13...	<0.004	<0.010	<0.011	<0.02	--	0.044	--	--	--	<0.02	--	--	--
29...	<0.004	<0.010	<0.011	<0.02	--	0.022	--	--	--	<0.02	--	--	--
JUN													
03...	<0.004	<0.010	<0.011	<0.02	--	0.023	--	--	--	<0.02	--	--	--
18...	<0.004	<0.010	<0.011	<0.02	--	0.020	--	--	--	<0.02	--	--	--
JUL													
08...	<0.004	<0.010	<0.011	<0.02	--	0.009	--	--	--	<0.02	--	--	--
22...	<0.004	<0.010	<0.011	<0.02	--	0.084	--	--	--	<0.02	--	--	--
AUG													
06...	<0.004	<0.010	<0.011	<0.02	--	<0.005	--	--	--	<0.02	--	--	--
SEP													
03...	<0.004	<0.010	<0.011	<0.02	--	0.006	--	--	--	<0.02	--	--	--
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	<0.004	<0.010	<0.011	<0.02	<0.004	0.012	<0.003	<0.02	<0.006	0.03	<0.02	<0.01	<0.008
NOV													
04...	<0.004	<0.010	<0.011	<0.02	<0.004	<0.005	<0.003	<0.02	<0.006	0.06	<0.02	<0.01	<0.008
DEC													
03...	<0.004	<0.010	<0.011	<0.02	<0.004	<0.005	<0.003	<0.02	<0.006	0.06	<0.02	<0.01	<0.008
FEB 2003													
03...	<0.030	<0.010	<0.011	<0.02	<0.004	<0.005	<0.003	<0.02	<0.006	<0.02	<0.02	<0.01	<0.008
MAR													
06...	<0.004	<0.010	<0.011	<0.02	<0.004	<0.010	<0.003	<0.02	<0.006	<0.07	<0.02	<0.01	<0.008
19...	<0.004	<0.010	<0.011	<0.02	<0.004	<0.005	<0.003	<0.02	<0.006	<0.02	<0.02	<0.01	<0.008
APR													
08...	<0.004	<0.010	<0.011	<0.02	<0.004	<0.010	<0.003	<0.02	<0.006	<0.02	--	--	<0.008
22...	<0.004	<0.010	<0.011	<0.02	<0.004	0.010	<0.003	<0.02	<0.006	0.04	--	--	<0.008
MAY													
08...	<0.004	<0.010	<0.011	<0.02	<0.004	0.010	<0.003	<0.02	<0.006	E.04	--	--	<0.008
12...	<0.004	<0.010	<0.011	<0.02	<0.004	0.009	<0.003	<0.02	<0.006	0.04	--	--	<0.008
28...	<0.004	<0.010	<0.011	<0.02	<0.004	0.049	<0.003	<0.02	<0.006	E.08	--	--	<0.008
JUN													
02...	<0.004	<0.010	<0.011	<0.02	<0.004	0.122	<0.003	<0.02	<0.006	<0.02	--	--	<0.008
19...	<0.004	<0.010	<0.011	<0.02	<0.004	0.012	<0.003	<0.02	<0.006	0.03	--	--	<0.008
JUL													
07...	<0.004	<0.010	<0.011	<0.02	<0.004	0.019	<0.003	<0.02	<0.006	E.01	--	--	<0.008
21...	<0.004	<0.010	<0.011	<0.02	<0.004	<0.005	<0.003	<0.02	<0.006	0.04	--	--	<0.008
AUG													
07...	<0.004	<0.010	<0.011	<0.02	<0.004	<0.005	<0.003	<0.02	<0.006	<0.03	--	--	<0.008
SEP													
02...	<0.004	<0.010	<0.011	<0.02	<0.004	<0.005	<0.003	<0.02	<0.006	0.02	--	--	<0.008

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Temephos, water, fltrd, ug/L (61607)	Terbacil, water, fltrd, 0.7u GF ug/L (82665)	Terbufos oxon sulfone water, fltrd, ug/L (61674)	Terbufos, water, fltrd, 0.7u GF ug/L (82675)	Terbutylazine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd, 0.7u GF ug/L (82681)	trans-Propi-conazole, water, fltrd, ug/L (79847)	Tri-allate, water, fltrd, 0.7u GF ug/L (82678)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd, 0.7u GF ug/L (82661)	z-Di-metho-morph, water, fltrd, ug/L (79845)	Di-chloro-vos, water fltrd, ug/L (38775)	Sus-pended sedi-ment concen-tration mg/L (80154)
04072050 DUCK CREEK AT SEMINARY ROAD NEAR ONEIDA, WI (LAT 44 27 57N LONG 088 13 08W)													
OCT 2002													
08...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	2
NOV													
05...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	105
DEC													
04...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	134
JAN 2003													
08...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	--
FEB													
05...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	22
MAR													
04...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	74
18...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	27
APR													
10...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	60
23...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	5
MAY													
06...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	20
13...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	12
29...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	6
JUN													
03...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	100
18...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	140
JUL													
08...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	100
22...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	52
AUG													
06...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	70
SEP													
03...	--	<0.034	--	<0.02	--	<0.005	--	<0.002	--	<0.009	--	--	88
040869415 LINCOLN CREEK AT 47TH STREET AT MILWAUKEE, WI (LAT 43 05 49N LONG 087 58 20W)													
OCT 2002													
07...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	1
NOV													
04...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	14
DEC													
03...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	2
FEB 2003													
03...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	93
MAR													
06...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	6
19...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	8
APR													
08...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	5
22...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	5
MAY													
08...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	E.002	<0.05	<0.01	3
12...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	E.002	<0.05	<0.01	4
28...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	22
JUN													
02...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	170
19...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	157
JUL													
07...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	53
21...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	105
AUG													
07...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	58
SEP													
02...	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01	63

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	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)	Alkalinity, wat fltrd end lab, mg/L as CaCO3 (29801)
04066500 PIKE RIVER AT AMBERG, WI (LAT 45 30 00N LONG 088 00 00W)													
APR 2003													
10...	0930	226	70	747	12.1	8.1	202	2.5	23.9	11.0	1.42	1.97	100
15...	0940	497	40	730	10.8	7.8	128	7.0	13.3	6.21	1.36	1.44	57
MAY													
08...	0915	388	70	741	10.7	7.6	156	8.5	17.3	8.09	1.10	1.82	79
13...	1000	635	40	738	11.3	7.4	121	7.0	13.9	6.23	0.99	1.75	54
JUN													
05...	0840	192	70	737	11.6	7.4	225	14.0	27.1	12.2	1.20	2.27	108
12...	1115	492	40	738	9.8	7.5	145	15.0	16.4	7.59	0.70	2.42	66
JUL													
02...	0900	123	70	735	8.4	8.1	252	17.5	30.2	13.6	1.30	2.31	125
AUG													
04...	0930	280	70	737	8.6	7.8	203	17.0	23.6	11.0	1.09	1.95	97
27...	0850	98	70	742	9.6	7.8	262	18.0	32.5	14.4	1.41	2.50	127
SEP													
15...	0945	233	70	739	8.8	8.1	222	14.5	26.3	12.6	1.39	2.08	107
04075365 EVERGREEN RIVER BLW EVERGREEN FALLS NR LANGLADE, WI (LAT 45 03 57N LONG 088 40 34W)													
APR 2003													
10...	0945	60	70	739	13.6	7.7	293	2.6	34.0	16.3	1.62	2.04	--
17...	1210	211	40	735	15.4	7.2	144	0.9	16.1	8.25	1.73	1.31	66
MAY													
06...	1100	155	70	731	13.0	7.5	200	5.4	23.0	11.4	1.32	1.75	113
13...	0830	113	70	734	12.4	7.6	222	6.7	26.9	12.8	1.20	1.80	108
21...	1015	83	70	739	12.4	7.9	274	8.3	34.1	16.4	1.40	2.07	140
JUN													
04...	1000	71	70	738	10.9	8.2	312	12.3	36.8	18.0	1.33	2.26	159
JUL													
08...	0805	61	70	735	10.2	7.8	331	15.9	41.3	19.8	1.45	2.38	166
AUG													
06...	0820	64	70	734	10.0	7.7	322	16.2	35.8	18.0	1.40	2.35	159
26...	1015	61	70	735	10.6	7.9	323	17.5	37.9	18.8	1.41	2.20	164
04087204 OAK CREEK AT SOUTH MILWAUKEE, WI (LAT 42 55 30N LONG 087 52 12W)													
NOV 2002													
04...	1000	2.1	--	--	--	--	--	--	--	--	--	--	--
07...	1015	2.7	--	--	--	--	--	--	--	--	--	--	--
13...	1000	3.3	--	--	--	--	--	--	--	--	--	--	--
APR 2003													
09...	1010	15	70	738	13.1	7.8	M	0.8	112	41.4	9.03	1,020	--
MAY													
01...	1115	137	40	740	9.8	7.6	978	9.0	34.6	13.1	4.14	129	88
05...	1010	154	70	729	10.1	7.5	889	8.8	38.1	15.0	3.93	105	107
09...	1055	265	40	744	9.9	7.5	750	10.3	42.2	17.3	4.79	78.8	144
20...	1000	24	70	740	9.3	7.7	1,510	15.0	82.0	36.2	4.64	173	223
JUN													
03...	1000	8.1	70	742	9.8	7.5	1,570	12.3	85.7	36.9	4.73	148	255
JUL													
09...	1000	21	70	739	6.5	7.2	729	19.6	41.5	15.7	3.61	86.5	125
AUG													
05...	1000	5.3	70	743	6.7	7.2	854	19.2	48.5	19.2	4.05	89.7	141
25...	1005	0.54	70	748	7.3	7.4	1,480	21.7	100	43.5	3.84	129	260

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	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)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01119)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01114)	Zinc, water, fltrd, ug/L (01090)
04066500 PIKE RIVER AT AMBERG, WI (LAT 45 30 00N LONG 088 00 00W)													
APR 2003													
10...	2.39	8.0	0.28	0.05	0.17	<0.02	<0.04	--	--	132	--	--	--
15...	1.58	5.1	0.54	0.08	0.11	<0.02	E.02	--	--	225	--	--	--
MAY													
08...	2.62	6.8	0.43	<0.04	0.12	<0.02	E.02	--	--	144	--	--	--
13...	2.19	5.3	0.62	<0.04	0.13	<0.02	<0.04	--	--	165	--	--	--
JUN													
05...	2.80	7.3	0.33	<0.04	E.06	--	<0.04	--	--	159	--	--	--
12...	2.10	4.7	0.59	<0.04	E.06	<0.02	<0.04	--	--	207	--	--	--
JUL													
02...	3.15	8.1	0.23	<0.04	0.07	<0.02	<0.04	--	--	124	--	--	--
AUG													
04...	2.24	7.4	0.41	<0.04	0.08	<0.02	<0.04	--	--	166	--	--	--
27...	3.64	7.7	0.24	<0.04	E.05	<0.02	<0.04	--	--	95	--	--	--
SEP													
15...	2.94	8.4	0.31	<0.04	0.07	<0.18	<0.04	--	--	83	--	--	--
04075365 EVERGREEN RIVER BLW EVERGREEN FALLS NR LANGLADE, WI (LAT 45 03 57N LONG 088 40 34W)													
APR 2003													
10...	--	--	0.18	E.03	0.98	E.01	E.03	--	--	18	--	--	--
17...	2.33	5.6	0.57	0.10	0.45	<0.02	E.02	--	--	108	--	--	--
MAY													
06...	2.75	7.1	0.49	E.02	0.60	<0.02	E.02	--	--	87	--	--	--
13...	3.19	7.3	0.37	<0.04	0.47	<0.02	<0.04	--	--	71	--	--	--
21...	3.27	8.0	0.25	<0.04	0.59	<0.02	<0.04	--	--	34	--	--	--
JUN													
04...	3.74	8.3	0.14	<0.04	0.51	<0.02	<0.04	--	--	18	--	--	--
JUL													
08...	3.69	8.5	0.15	<0.04	0.73	E.01	E.03	--	--	18	--	--	--
AUG													
06...	3.57	8.2	0.17	<0.04	0.65	E.01	E.02	--	--	24	--	--	--
26...	3.52	7.8	0.14	<0.04	0.66	E.01	<0.04	--	--	18	--	--	--
04087204 OAK CREEK AT SOUTH MILWAUKEE, WI (LAT 42 55 30N LONG 087 52 12W)													
NOV 2002													
04...	--	--	--	--	--	--	--	M	1	--	<1	<1	<20
07...	--	--	--	--	--	--	--	M	2	--	M	<1	<20
13...	--	--	--	--	--	--	--	M	2	--	<1	<1	<20
APR 2003													
09...	--	--	0.76	0.15	0.96	<0.02	<0.04	--	--	55	--	--	--
MAY													
01...	220	29.5	0.63	0.19	0.77	<0.02	E.03	--	--	33	--	--	--
05...	187	34.9	0.71	0.12	0.76	E.02	0.04	--	--	38	--	--	--
09...	130	35.7	0.73	0.14	1.29	0.03	0.05	--	--	32	--	--	--
20...	301	77.9	0.53	E.02	0.71	<0.02	<0.04	--	--	57	--	--	--
JUN													
03...	272	81.0	0.63	0.04	0.46	<0.02	<0.04	--	--	71	--	--	--
JUL													
09...	129	30.4	0.68	0.14	0.56	0.04	0.07	--	--	74	--	--	--
AUG													
05...	149	46.3	0.50	0.08	0.38	0.03	0.05	--	--	34	--	--	--
25...	239	120	0.34	E.04	0.27	E.02	E.02	--	--	27	--	--	--







## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd, uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd, mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
04072185 TROUT CREEK NEAR HOWARD, WI (LAT 44 32 10N LONG 088 07 48W)													
OCT 2002													
17...	1250	1.0	8,010	745	14.2	8.2	837	6.0	0.38	0.41	<0.04	1.03	0.010
NOV													
11...	1140	E1.0	70	748	7.2	7.3	639	4.3	0.28	0.45	<0.04	1.15	0.009
DEC													
04...	1345	0.76	70	751	18.0	--	--	--	0.35	0.40	<0.04	3.38	0.008
JAN 2003													
21...	1140	E.50	70	752	12.3	7.3	1,610	0.0	1.1	1.5	0.44	5.34	0.505
FEB													
18...	1430	1.0	70	741	13.7	--	--	-0.3	0.56	0.62	0.12	4.62	0.070
MAR													
19...	1325	6.2	10	741	12.2	7.8	441	0.0	2.0	2.2	0.87	1.97	0.071
26...	1220	E11	70	745	14.7	7.5	861	0.2	1.4	1.5	0.49	3.57	0.117
APR													
21...	1145	19	10	737	10.8	8.0	740	9.1	1.2	1.6	0.04	5.52	0.077
MAY													
20...	1500	4.3	10	752	12.8	8.7	650	19.4	1.1	1.2	<0.04	0.23	0.014
JUN													
09...	1150	5.2	10	739	9.8	8.1	805	14.2	0.82	0.85	<0.04	0.91	0.057
JUL													
17...	1000	0.77	70	747	7.9	8.3	794	20.4	0.51	0.65	<0.04	0.74	0.011
31...	1300	18	10	741	8.9	7.5	493	18.9	0.61	1.6	<0.04	0.95	0.014
AUG													
11...	1305	3.9	10	746	8.6	7.8	784	19.3	0.70	0.79	<0.04	1.15	E.004
SEP													
11...	1040	0.19	70	754	8.7	8.0	--	19.0	0.42	0.55	<0.04	0.64	E.004
04072233 LANCASTER BROOK AT SHAWANO AVENUE AT HOWARD, WI (LAT 44 33 29N LONG 088 06 10W)													
OCT 2002													
17...	1155	1.6	10	745	14.0	7.9	837	5.3	0.34	0.40	<0.04	1.63	0.006
NOV													
11...	1110	E3.4	70	748	6.3	6.9	641	--	<0.10	0.43	<0.04	1.56	0.014
DEC													
04...	1545	2.0	70	751	16.8	8.0	972	-0.2	0.26	0.33	<0.04	3.60	0.010
JAN 2003													
21...	1245	E1.0	70	752	14.5	7.5	1,190	0.0	0.54	0.59	0.20	5.27	0.084
FEB													
19...	0750	E.10	70	747	12.5	7.6	845	-0.3	0.51	0.55	0.17	3.69	0.049
MAR													
19...	1155	3.8	10	731	12.2	7.7	656	0.0	1.1	1.4	0.31	1.28	0.038
26...	1120	8.3	10	745	14.6	7.5	737	0.3	0.79	0.93	0.27	1.46	0.032
APR													
21...	1245	15	10	737	11.0	8.1	806	8.5	0.61	0.74	E.04	1.24	0.012
MAY													
20...	1550	4.5	10	752	8.3	8.3	779	17.1	0.52	0.57	<0.04	0.68	0.026
JUN													
09...	1305	6.9	10	739	9.7	8.0	836	14.6	0.78	0.83	<0.04	1.38	0.133
JUL													
17...	0905	1.0	70	745	8.0	8.1	828	18.8	0.47	0.65	<0.04	1.51	0.014
31...	1415	18	10	741	9.0	7.6	442	18.8	0.70	0.93	<0.04	0.43	0.066
AUG													
11...	1120	4.3	10	746	8.7	7.7	786	18.5	0.45	0.59	<0.04	1.70	E.005
SEP													
11...	1150	0.43	70	754	9.1	7.9	560	19.2	0.35	0.43	<0.04	1.52	E.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
04072185 TROUT CREEK NEAR HOWARD, WI (LAT 44 32 10N LONG 088 07 48W)													
OCT 2002													
17...	<0.02	0.034	0.043	<0.002	E.037	<0.004	<0.002	<0.005	100	0.051	<0.050	<0.010	<0.002
NOV													
11...	<0.02	0.014	0.022	<0.006	E.028	<0.006	<0.004	<0.005	93.0	0.040	<0.050	<0.010	<0.002
DEC													
04...	<0.02	0.008	0.013	<0.006	E.043	<0.006	<0.004	<0.005	102	0.060	<0.050	<0.010	<0.002
JAN 2003													
21...	0.03	0.041	0.107	<0.006	E.099	<0.006	<0.004	<0.005	103	0.112	<0.050	<0.010	<0.002
FEB													
18...	E.01	0.024	0.035	<0.006	E.072	<0.006	<0.020	<0.005	112	0.082	<0.050	<0.010	<0.002
MAR													
19...	0.27	0.32	0.39	<0.006	E.031	<0.006	<0.004	<0.005	95.6	0.041	<0.050	<0.010	<0.002
26...	0.06	0.092	0.132	<0.006	E.036	<0.006	<0.004	<0.005	86.4	0.032	<0.050	<0.010	<0.002
APR													
21...	0.04	0.069	0.148	<0.006	E.073	0.023	E.004	<0.005	107	0.139	<0.050	<0.010	<0.002
MAY													
20...	0.02	0.051	0.085	<0.006	E.026	0.011	<0.004	<0.005	92.7	0.047	<0.050	<0.010	<0.002
JUN													
09...	0.03	0.079	0.110	<0.006	E.032	0.007	<0.004	<0.005	102	0.354	<0.050	<0.010	<0.002
JUL													
17...	0.13	0.163	0.193	<0.006	E.032	<0.006	<0.004	<0.005	80.8	0.114	<0.050	<0.010	<0.002
31...	0.05	0.077	0.39	<0.006	E.014	<0.006	<0.004	<0.005	109	0.038	<0.050	<0.010	<0.002
AUG													
11...	0.09	0.115	0.154	<0.006	E.049	<0.006	<0.004	<0.005	92.8	0.068	<0.050	<0.010	<0.002
SEP													
11...	0.08	0.106	0.142	<0.006	E.025	<0.006	<0.004	<0.005	87.2	0.050	<0.050	<0.010	<0.002
04072233 LANCASTER BROOK AT SHAWANO AVENUE AT HOWARD, WI (LAT 44 33 29N LONG 088 06 10W)													
OCT 2002													
17...	<0.02	0.011	0.016	<0.002	E.025	<0.004	<0.002	<0.005	96.6	0.018	<0.050	<0.010	<0.002
NOV													
11...	<0.02	0.012	0.020	<0.006	E.017	<0.006	<0.004	<0.005	92.7	0.014	<0.050	<0.010	<0.002
DEC													
04...	<0.02	0.006	0.011	<0.006	E.032	<0.006	<0.004	<0.005	100	0.019	<0.050	<0.010	<0.002
JAN 2003													
21...	E.01	0.014	0.016	<0.006	E.044	<0.006	<0.004	<0.005	91.1	0.026	<0.050	<0.010	<0.002
FEB													
19...	<0.02	0.011	0.017	<0.006	E.034	<0.006	<0.004	<0.005	99.0	0.017	<0.050	<0.010	<0.002
MAR													
19...	0.06	0.085	0.148	<0.006	E.013	<0.006	<0.004	<0.005	93.5	0.014	<0.050	<0.010	<0.002
26...	E.01	0.032	0.062	<0.006	E.012	<0.006	<0.004	<0.005	92.7	0.010	<0.050	<0.010	<0.002
APR													
21...	<0.02	0.021	0.051	<0.006	E.018	0.008	<0.004	<0.005	106	0.042	<0.050	<0.010	<0.002
MAY													
20...	<0.02	0.016	0.031	<0.006	E.015	0.017	<0.004	<0.005	85.5	0.026	<0.050	<0.010	<0.002
JUN													
09...	<0.02	0.031	0.055	<0.006	E.028	E.005	0.005	<0.005	100	1.11	<0.050	<0.010	<0.002
JUL													
17...	0.04	0.065	0.100	<0.006	E.022	<0.006	<0.004	<0.005	106	0.037	<0.050	<0.010	<0.002
31...	<0.02	0.056	0.177	<0.006	E.023	<0.006	<0.004	<0.005	108	0.072	<0.050	<0.010	<0.002
AUG													
11...	0.04	0.051	0.092	<0.006	E.015	<0.006	<0.004	<0.005	88.1	0.019	<0.050	<0.010	<0.002
SEP													
11...	0.03	0.049	0.066	<0.006	E.015	<0.006	<0.004	<0.005	93.9	0.017	<0.050	<0.010	<0.002

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diazinon-d10 surrog. wat flt 0.7u GF percent recovry (91063)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfuralin, water, fltrd 0.7u GF ug/L (82663)
04072185 TROUT CREEK NEAR HOWARD, WI (LAT 44 32 10N LONG 088 07 48W)													
OCT 2002													
17...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	114	<0.005	<0.02	<0.002	<0.009
NOV													
11...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	106	<0.005	<0.02	<0.002	<0.009
DEC													
04...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	108	<0.005	<0.02	<0.002	<0.009
JAN 2003													
21...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	116	<0.005	<0.02	<0.002	<0.009
FEB													
18...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	127	<0.005	<0.02	<0.002	<0.009
MAR													
19...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	132	<0.005	<0.02	<0.002	<0.009
26...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	98.3	<0.005	<0.02	<0.002	<0.009
APR													
21...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	126	<0.005	<0.02	<0.002	<0.009
MAY													
20...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	107	<0.005	<0.02	<0.002	<0.009
JUN													
09...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	0.007	117	<0.005	<0.02	0.003	<0.009
JUL													
17...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	0.009	90.6	<0.005	<0.02	0.002	<0.009
31...	E.009	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	131	<0.005	<0.02	<0.002	<0.009
AUG													
11...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	103	<0.005	<0.02	<0.002	<0.009
SEP													
11...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	109	<0.005	<0.02	<0.002	<0.009
04072233 LANCASTER BROOK AT SHAWANO AVENUE AT HOWARD, WI (LAT 44 33 29N LONG 088 06 10W)													
OCT 2002													
17...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	109	<0.005	<0.02	<0.002	<0.009
NOV													
11...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	108	<0.005	<0.02	<0.002	<0.009
DEC													
04...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	105	<0.005	<0.02	<0.002	<0.009
JAN 2003													
21...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	112	<0.005	<0.02	<0.002	<0.009
FEB													
19...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	118	<0.005	<0.02	<0.002	<0.009
MAR													
19...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	127	<0.005	<0.02	<0.002	<0.009
26...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	101	<0.005	<0.02	<0.002	<0.009
APR													
21...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	125	<0.005	<0.02	<0.002	<0.009
MAY													
20...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	97.1	<0.005	<0.02	<0.002	<0.009
JUN													
09...	<0.041	<0.020	<0.007	<0.006	<0.018	<0.003	<0.004	0.012	117	<0.005	<0.02	<0.002	<0.009
JUL													
17...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	0.039	113	<0.005	<0.02	<0.002	<0.009
31...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	0.024	127	<0.005	<0.02	<0.002	<0.009
AUG													
11...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	E.002	102	<0.005	<0.02	<0.002	<0.009
SEP													
11...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	105	<0.005	<0.02	<0.002	<0.009

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Desulf- inyl- fipro- nil amide, wat flt ug/L (62169)	Fipro- nil sulfide water, fltrd, ug/L (62167)	Fipro- nil sulfone water, fltrd, ug/L (62168)	Fipro- nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala- thion, water, fltrd, ug/L (39532)	Methyl para- thion, water, fltrd 0.7u GF ug/L (82667)	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Moli- nate, water, fltrd 0.7u GF ug/L (82671)
04072185 TROUT CREEK NEAR HOWARD, WI (LAT 44 32 10N LONG 088 07 48W)													
OCT 2002													
17...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.020	<0.006	<0.002
NOV													
11...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	E.013	<0.006	<0.002
DEC													
04...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	E.010	<0.006	<0.002
JAN 2003													
21...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.019	<0.006	<0.002
FEB													
18...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.019	<0.006	<0.002
MAR													
19...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	--	<0.006	0.040	<0.006	<0.002
26...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.031	<0.006	<0.002
APR													
21...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.128	<0.006	<0.002
MAY													
20...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.032	<0.006	<0.002
JUN													
09...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.558	<0.006	<0.002
JUL													
17...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	0.004	<0.035	<0.027	<0.006	0.133	<0.006	<0.002
31...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.045	<0.006	<0.002
AUG													
11...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.109	<0.006	<0.002
SEP													
11...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.021	<0.006	<0.002
04072233 LANCASTER BROOK AT SHAWANO AVENUE AT HOWARD, WI (LAT 44 33 29N LONG 088 06 10W)													
OCT 2002													
17...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	E.012	<0.006	<0.002
NOV													
11...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	E.009	<0.006	<0.002
DEC													
04...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	E.005	<0.006	<0.002
JAN 2003													
21...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	E.008	<0.006	<0.002
FEB													
19...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002
MAR													
19...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	--	<0.006	0.026	<0.006	<0.002
26...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.014	<0.006	<0.002
APR													
21...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.023	<0.006	<0.002
MAY													
20...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.033	<0.006	<0.002
JUN													
09...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	1.83	<0.006	<0.002
JUL													
17...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.020	<0.006	<0.002
31...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	0.083	<0.006	<0.002
AUG													
11...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	E.011	<0.006	<0.002
SEP													
11...	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	E.009	<0.006	<0.002

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	p,p'- DDE, water, fltrd, ug/L (34653)	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome- ton, water, fltrd, ug/L (04037)	Pron- amide, water, fltrd 0.7u GF ug/L (82676)	Propa- chlor, water, fltrd, ug/L (04024)	Pro- panil, water, fltrd 0.7u GF ug/L (82679)	Propar- gite, water, fltrd 0.7u GF ug/L (82685)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)
04072185 TROUT CREEK NEAR HOWARD, WI (LAT 44 32 10N LONG 088 07 48W)													
OCT 2002													
17...	<0.007	<0.003	<0.007	<0.002	<0.010	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	E.010	<0.02
NOV													
11...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.011	<0.02
DEC													
04...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.011	<0.02
JAN 2003													
21...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.024	<0.02
FEB													
18...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.017	<0.02
MAR													
19...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.007	<0.02
26...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	0.007	<0.02
APR													
21...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	0.007	<0.02
MAY													
20...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02
JUN													
09...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	E.005	<0.02
JUL													
17...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.007	<0.02
31...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.010	<0.02
AUG													
11...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.007	<0.02
SEP													
11...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.010	<0.02
04072233 LANCASTER BROOK AT SHAWANO AVENUE AT HOWARD, WI (LAT 44 33 29N LONG 088 06 10W)													
OCT 2002													
17...	<0.007	<0.003	<0.007	<0.002	<0.010	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	E.011	<0.02
NOV													
11...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.010	<0.02
DEC													
04...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.012	<0.02
JAN 2003													
21...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.022	<0.02
FEB													
19...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02
MAR													
19...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.013	<0.02
26...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.010	<0.02
APR													
21...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.224	<0.02
MAY													
20...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.022	<0.02
JUN													
09...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.016	M
JUL													
17...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	0.04	<0.004	<0.010	<0.011	<0.02	0.031	<0.02
31...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.009	<0.02
AUG													
11...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	0.08	<0.004	<0.010	<0.011	<0.02	0.014	<0.02
SEP													
11...	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.011	<0.02

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	Suspended sediment concentration mg/L (80154)
04072185 TROUT CREEK NEAR HOWARD, WI (LAT 44 32 10N LONG 088 07 48W)						
OCT 2002						
17...	<0.034	<0.02	<0.005	<0.002	<0.009	48
NOV						
11...	<0.034	<0.02	<0.005	<0.002	<0.009	127
DEC						
04...	<0.034	<0.02	<0.005	<0.002	<0.009	179
JAN 2003						
21...	<0.034	<0.02	<0.005	<0.002	<0.009	177
FEB						
18...	<0.034	<0.02	<0.005	<0.002	<0.009	128
MAR						
19...	<0.034	<0.02	<0.005	<0.002	<0.009	50
26...	<0.034	<0.02	<0.005	<0.002	<0.009	67
APR						
21...	<0.034	<0.02	<0.005	<0.002	<0.009	98
MAY						
20...	<0.034	<0.02	<0.005	<0.002	<0.009	9
JUN						
09...	<0.034	<0.02	<0.005	<0.002	<0.009	65
JUL						
17...	<0.034	<0.02	<0.005	<0.002	<0.009	65
31...	<0.034	<0.02	<0.005	<0.002	<0.009	236
AUG						
11...	<0.034	<0.02	<0.005	<0.002	<0.009	197
SEP						
11...	<0.034	<0.02	<0.005	<0.002	<0.009	--
04072233 LANCASTER BROOK AT SHAWANO AVENUE AT HOWARD, WI (LAT 44 33 29N LONG 088 06 10W)						
OCT 2002						
17...	<0.034	<0.02	<0.005	<0.002	<0.009	45
NOV						
11...	<0.034	<0.02	<0.005	<0.002	<0.009	99
DEC						
04...	<0.034	<0.02	<0.005	<0.002	<0.009	108
JAN 2003						
21...	<0.034	<0.02	<0.005	<0.002	<0.009	63
FEB						
19...	<0.034	<0.02	<0.005	<0.002	<0.009	21
MAR						
19...	<0.034	<0.02	<0.005	<0.002	<0.009	60
26...	<0.034	<0.02	<0.005	<0.002	<0.009	76
APR						
21...	<0.034	<0.02	<0.005	<0.002	<0.009	117
MAY						
20...	<0.034	<0.02	<0.005	<0.002	<0.009	16
JUN						
09...	<0.034	<0.02	<0.005	<0.002	<0.009	93
JUL						
17...	<0.034	<0.02	<0.005	<0.002	<0.009	110
31...	<0.034	<0.02	<0.005	<0.002	<0.009	--
AUG						
11...	<0.034	<0.02	<0.005	<0.002	<0.009	100
SEP						
11...	<0.034	<0.02	<0.005	<0.002	<0.009	--

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Phosphorus, water, unfltrd mg/L (00665)
04073470 PUCHYAN RIVER AT GREEN LAKE, WI (LAT 43 50 48N LONG 088 57 36W)				
OCT 2002				
16...	1145	17	10	0.019
NOV 29...	1455	13	10	0.014
JAN 2003				
03...	1243	12	10	0.018
30...	1456	15	10	0.025
FEB 28...	1130	22	10	0.029
MAR 18...	1215	24	10	0.037
APR 01...	1525	14	10	0.046
22...	1125	49	10	0.031
MAY 07...	1015	48	10	0.031
13...	1630	283	10	0.037
JUN 24...	0908	61	10	0.070
JUL 10...	1205	46	10	0.037
31...	1215	27	10	0.036
SEP 10...	1200	13	10	0.048

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Chloride, water, fltrd, mg/L (00940)	Sulfate, water, fltrd, mg/L (00945)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
040780885 MID BR EMBARRASS R @ ELAND RD NR ELAND, WI (LAT 44 52 13N LONG 089 10 08W)													
NOV 2002													
07...	1400	16	10	720	13.5	7.8	E348	364	13.0	2.9	7.09	7.4	0.36
040780895 PACKARD CREEK AT BLUEBIRD ROAD NEAR ELAND, WI (LAT 44 52 18N LONG 089 10 25W)													
NOV 2002													
07...	1200	13	10	739	13.0	7.7	33	380	7.5	2.5	3.08	3.1	0.46
040780922 MID BR EMBARRASS R @ TOWNLINE RD NR WITTENBERG, WI (LAT 44 51 21N LONG 089 09 51W)													
NOV 2002													
07...	1500	--	10	720	13.8	7.9	363	372	12.0	3.0	8.24	7.3	0.38
MAR 2003													
21...	0955	--	10	719	13.2	7.1	--	224	5.5	-0.2	10.8	7.0	1.6
JUN 11...	1350	240	30	--	8.2	8.1	--	184	--	12.9	--	--	--
05381255 VALENTINE CREEK AT MORRISON ROAD NEAR HATFIELD, WI (LAT 44 21 21N LONG 090 44 29W)													
NOV 2002													
08...	1030	1.0	10	727	11.2	6.0	43	38	14.0	6.4	3.14	4.7	0.31
05381260 DICKEY CREEK @ COUNTY TRUNK HGHWY K NR HATFIELD, WI (LAT 44 20 30N LONG 090 44 46W)													
NOV 2002													
08...	1200	6.2	10	727	11.4	5.7	374	28	16.0	5.7	13.0	7.0	1.1
05381265 MORRISON CREEK AT MOUTH NEAR BLACK RIVER FALLS, WI (LAT 44 21 23N LONG 090 45 58W)													
NOV 2002													
08...	0930	68	10	739	12.3	5.6	31	27	7.5	4.2	1.78	3.7	0.46
MAR 2003													
20...	1240	--	10	733	16.7	5.6	--	30	5.0	-0.2	2.32	3.9	0.71







WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Prometon, water, fltrd, ug/L (04037)	Pronamide, water, fltrd, 0.7u GF (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd, 0.7u GF (82679)	Propargite, water, fltrd, 0.7u GF (82685)	Simazine, water, fltrd, ug/L (04035)	Tebu-thiuron, water, fltrd, 0.7u GF (82670)	Terbacil, water, fltrd, 0.7u GF (82665)	Terbufos, water, fltrd, 0.7u GF (82675)	Thio-bencarb, water, fltrd, 0.7u GF (82681)	Tri-allate, water, fltrd, 0.7u GF (82678)	Tri-fluralin, water, fltrd, 0.7u GF (82661)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)
040780885 MID BR EMBARRASS R @ ELAND RD NR ELAND, WI (LAT 44 52 13N LONG 089 10 08W)													
NOV 2002 07...	--	--	--	--	--	--	--	--	--	--	--	--	45
040780895 PACKARD CREEK AT BLUEBIRD ROAD NEAR ELAND, WI (LAT 44 52 18N LONG 089 10 25W)													
NOV 2002 07...	--	--	--	--	--	--	--	--	--	--	--	--	59
040780922 MID BR EMBARRASS R @ TOWNLINE RD NR WITTENBERG, WI (LAT 44 51 21N LONG 089 09 51W)													
NOV 2002 07...	--	--	--	--	--	--	--	--	--	--	--	--	55
MAR 2003 21...	--	--	--	--	--	--	--	--	--	--	--	--	62
JUN 11...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	--
05381255 VALENTINE CREEK AT MORRISON ROAD NEAR HATFIELD, WI (LAT 44 21 21N LONG 090 44 29W)													
NOV 2002 08...	--	--	--	--	--	--	--	--	--	--	--	--	63
05381260 DICKEY CREEK @ COUNTY TRUNK HGHWY K NR HATFIELD, WI (LAT 44 20 30N LONG 090 44 46W)													
NOV 2002 08...	--	--	--	--	--	--	--	--	--	--	--	--	72
05381265 MORRISON CREEK AT MOUTH NEAR BLACK RIVER FALLS, WI (LAT 44 21 23N LONG 090 45 58W)													
NOV 2002 08...	--	--	--	--	--	--	--	--	--	--	--	--	74
MAR 2003 20...	--	--	--	--	--	--	--	--	--	--	--	--	79

Date	Suspended sediment concentration mg/L (80154)
040780885 MID BR EMBARRASS R @ ELAND RD NR ELAND, WI (LAT 44 52 13N LONG 089 10 08W)	
NOV 2002 07...	4
040780895 PACKARD CREEK AT BLUEBIRD ROAD NEAR ELAND, WI (LAT 44 52 18N LONG 089 10 25W)	
NOV 2002 07...	5
040780922 MID BR EMBARRASS R @ TOWNLINE RD NR WITTENBERG, WI (LAT 44 51 21N LONG 089 09 51W)	
NOV 2002 07...	6
MAR 2003 21...	9
JUN 11...	--
05381255 VALENTINE CREEK AT MORRISON ROAD NEAR HATFIELD, WI (LAT 44 21 21N LONG 090 44 29W)	
NOV 2002 08...	7
05381260 DICKEY CREEK @ COUNTY TRUNK HGHWY K NR HATFIELD, WI (LAT 44 20 30N LONG 090 44 46W)	
NOV 2002 08...	6
05381265 MORRISON CREEK AT MOUTH NEAR BLACK RIVER FALLS, WI (LAT 44 21 23N LONG 090 45 58W)	
NOV 2002 08...	6
MAR 2003 20...	9

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Beginning Date	Beginning Time	Ending date	Ending time	Sam-pling method, code (82398)	Tur-bidity, NTU (00076)	pH, water, unfltrd lab, std units (00403)	Specif. conduc-tance, wat unf lab, uS/cm 25 degC (90095)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recover-able, mg/L (00916)	Magnes-ium, water, fltrd, mg/L (00925)	Magnes-ium, water, unfltrd recover-able, mg/L (00921)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Alka-linity, wat flt fxd end lab, mg/L as CaCO3 (29801)	
443203088035400 ST. MARYS HOSPITAL ROOF AT GREEN BAY, WI (LAT 44 32 03N LONG 088 03 54W)														
OCT 2002	04...	0414	20021004	1219	50	2.0	7.4	62	--	7.2	--	2.7	21	--
MAY 2003	07...	1419	20030,07	1640	50	<1.0	7.6	104	--	--	--	--	33	--
	09...	0355	20030509	0658	50	--	--	--	--	--	--	--	--	--
	10...	2206	20030511	0457	50	1.6	7.4	58	--	--	--	--	20	--
	30...	2125	20030531	0112	50	2.1	7.5	110	--	--	--	--	28	--
JUN	10...	0616	20030610	0908	50	<1.0	7.5	43	--	--	--	--	15	--
	24...	0751	20030624	0818	50	--	7.5	94	--	--	--	--	20	--
	28...	1010	20030628	1,344	50	<1.0	7.3	67	7.40	7.5	2.40	2.6	20	--
JUL	04...	0743	20030704	0833	50	1.4	7.0	60	6.00	14.6	1.80	6.7	16	--
	26...	0723	20030726	[1017	50	<1.0	--	--	6.90	11.8	2.30	4.8	--	--
443205088035500 ST. MARYS HOSPITAL INLET PIPE AT GREEN BAY, WI (LAT 44 32 05N LONG 088 03 55W)														
OCT 2002	04...	0411	20021004	1103	50	5.2	7.2	79	--	6.8	--	2.6	16	--
APR 2003	15...	1730	20030415	1922	50	--	--	--	--	--	--	--	--	--
MAY	07...	1417	20030507	1647	50	<1.0	7.7	493	--	--	--	--	45	--
	09...	0314	20030509	0800	50	--	--	--	--	--	--	--	--	--
	10...	2154	20030511	0509	50	2.9	8.0	340	--	--	--	--	31	--
	30...	2041	20030531	0500	50	3.8	6.9	692	--	--	--	--	31	--
JUN	10...	0616	20030610	0758	50	--	--	--	--	--	--	--	--	--
	10...	0720	20030610	0905	50	--	--	--	--	--	--	--	--	--
	24...	0749	20030624	0823	50	--	7.7	544	--	--	--	--	38	--
	28...	0946	20030628	1348	50	<1.0	7.3	208	12.4	13.1	4.00	4.9	26	--
JUL	04...	0741	20030704	0825	50	1.2	8.0	292	19.9	83.6	4.70	32	44	37
	26...	0721	20030726	1004	50	5.4	8.1	209	16.7	86.3	3.50	36	101	43

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Residue on evap. at 105degC wat unf mg/L (00500)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01119)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01094)	1-Methylnaphthalene, water, unfltrd ug/L (81696)	2-Methylnaphthalene, water, unfltrd ug/L (30194)
443203088035400 ST. MARYS HOSPITAL ROOF AT GREEN BAY, WI (LAT 44 32 03N LONG 088 03 54W)													
OCT 2002													
04...	<50	54	5	0.21	<0.022	0.009	0.019	M	6	40	50	<0.046	<0.034
MAY 2003													
07...	74	62	3	--	--	0.009	0.018	M	11	80	100	<0.046	<0.034
09...	--	60	6	--	--	0.009	0.025	--	--	--	--	--	--
10...	--	<50	18	--	--	0.007	0.033	M	11	60	90	<0.046	<0.034
30...	--	70	6	--	--	0.008	0.023	10	13	80	100	<0.046	<0.034
JUN													
10...	--	<50	9	--	--	0.011	0.024	M	9	40	70	--	--
24...	--	74	18	--	--	0.051	0.112	--	--	--	--	--	--
28...	--	<50	3	--	--	0.016	0.026	10	12	60	70	<0.046	<0.034
JUL													
04...	--	<50	82	--	--	0.006	0.113	10	47	210	500	--	--
26...	--	--	40	--	--	0.007	0.069	10	22	70	150	--	--
443205088035500 ST. MARYS HOSPITAL INLET PIPE AT GREEN BAY, WI (LAT 44 32 05N LONG 088 03 55W)													
OCT 2002													
04...	76	<50	20	0.36	<0.022	0.015	0.052	M	6	20	40	0.1	<0.2
APR 2003													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
07...	382	296	59	--	--	0.029	0.129	M	10	<20	80	<0.1	<0.1
09...	--	708	60	--	--	0.006	0.095	--	--	--	--	--	--
10...	--	198	152	--	--	0.021	0.153	M	12	<20	90	0.4	<0.6
30...	--	456	31	--	--	<0.005	0.072	M	11	40	60	<0.046	--
JUN													
10...	--	--	33	--	--	--	0.080	--	--	--	--	--	--
10...	--	--	18	--	--	--	0.057	--	--	--	--	--	--
24...	--	328	110	--	--	0.079	0.220	--	--	--	--	--	--
28...	--	116	15	--	--	0.056	0.093	M	7	30	50	<0.046	<0.034
JUL													
04...	--	192	362	--	--	0.036	0.394	M	56	30	220	--	--
26...	--	140	539	--	--	0.030	0.462	M	28	<20	180	--	--



WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phenanthrene, water, unfltrd ug/L (34461)	Pyrene, water, unfltrd ug/L (34469)	Naphthalene, water, unfltrd ug/L (34696)	Suspended sediment concentration mg/L (80154)	Runoff, volume Thousands of cubic feet (99904)
443203088035400 ST. MARYS HOSPITAL ROOF AT GREEN BAY, WI (LAT 44 32 03N LONG 088 03 54W)					
OCT 2002					
04...	<0.040	M	<0.038	--	1.4
MAY 2003					
07...	<0.040	<0.070	<0.038	2	0.29
09...	--	--	--	--	0.13
10...	M	M	<0.038	17	1.0
30...	<0.040	M	<0.038	--	0.24
JUN					
10...	--	--	--	10	1.2
24...	--	--	--	--	0.13
28...	<0.040	<0.070	<0.038	3	1.0
JUL					
04...	--	--	--	--	0.49
26...	--	--	--	--	0.73
443205088035500 ST. MARYS HOSPITAL INLET PIPE AT GREEN BAY, WI (LAT 44 32 05N LONG 088 03 55W)					
OCT 2002					
04...	15	24	M	--	13
APR 2003					
15...	--	--	--	435	--
MAY					
07...	14	32	M	70	0.75
09...	--	--	--	--	1.2
10...	62	90	M	175	8.5
30...	4	8	<0.038	--	2.1
JUN					
10...	--	--	--	--	8.2
10...	--	--	--	--	9.7
24...	--	--	--	--	1.5
28...	--	--	M	--	7.0
JUL					
04...	--	--	--	--	7.0
26...	--	--	--	--	7.9

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)
05333974 CRYSTAL BROOK AT HWY 70 NEAR SPOONER, WI (LAT 45 48 51N LONG 091 46 32W)					
OCT 2002					
24...	1450	20	70	0.033	0.041
DEC					
20...	0910	19	10	--	0.051
MAR 2003					
18...	1140	19	70	0.030	0.049
APR					
29...	1300	18	70	0.027	0.041

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)
05358177 BUTTERNUT LAKE TRIBUTARY AT CTH B NR BUTTERNUT, WI (LAT 45 59 05N LONG 090 30 55W)					
MAR 2003					
20...	1650	0.01	70	--	0.138
APR					
17...	1805	0.82	70	--	0.040
21...	1425	2.3	70	--	0.036
MAY					
13...	0925	2.0	70	--	0.032
05358179 SCHNUR LAKE OUTLET AT LAKESIDE DR NR PARK FALLS, WI (LAT 45 58 32N LONG 090 30 43W)					
NOV 2002					
15...	0900	0.79	70	0.009	0.027
DEC					
12...	1215	0.48	70	0.009	0.036
JAN 2003					
16...	0955	0.36	70	0.008	0.030
FEB					
13...	1415	0.40	70	0.005	0.032
MAR					
11...	1120	0.43	70	0.017	0.025
20...	1710	0.60	70	0.007	0.023
APR					
15...	1130	1.4	70	0.010	0.020
18...	1135	2.2	70	0.006	0.017
21...	1545	7.2	70	<0.005	0.020
MAY					
13...	1025	9.4	70	0.009	0.021
JUN					
17...	1840	0.98	70	0.008	0.016
JUL					
16...	1455	0.25	70	--	0.020
AUG					
12...	2005	E.10	70	--	0.025
05358186 SE TRIB TO BUTTERNUT L @ LAKESIDE DR NR PARK FALLS (LAT 45 57 22N LONG 090 30 51W)					
NOV 2002					
15...	0840	0.06	70	--	0.031
DEC					
12...	1315	0.03	70	--	0.037
JAN 2003					
16...	1045	0.01	70	--	0.090
FEB					
13...	1500	0.01	70	--	0.039
MAR					
20...	1755	0.14	70	--	0.066
APR					
15...	1210	0.54	70	--	0.079
18...	1210	0.43	70	--	0.049
21...	1610	0.71	70	--	0.054
MAY					
13...	1055	0.48	70	--	0.026
JUN					
17...	1920	0.06	70	--	0.040
AUG					
12...	0815	E.01	70	--	0.072
SEP					
16...	1900	E.05	70	--	0.045



WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)
053581865 SW TRIB NO.1 TO BUTTERNUT L @ CTH B NR PARK FALLS (LAT 45 57 17N LONG 090 31 49W)					
DEC 2002					
12...	0930	0.01	70	--	0.142
MAR 2003					
20...	1410	0.45	70	--	0.339
APR					
14...	1955	0.25	70	--	0.053
17...	1830	0.94	70	--	0.124
21...	1305	4.4	70	--	0.115
MAY					
13...	1325	3.7	70	--	0.086
05358187 SW TRIB NO.2 TO BUTTERNUT L @ CTH B NR PARK FALLS (LAT 45 57 14N LONG 090 31 53W)					
NOV 2002					
14...	1700	0.19	70	--	0.070
DEC					
12...	0855	0.01	70	--	0.149
MAR 2003					
20...	1630	0.22	70	--	0.222
APR					
14...	2005	0.48	70	--	0.135
17...	1845	1.3	70	--	0.114
21...	1235	4.2	70	--	0.088
MAY					
13...	1300	3.6	70	--	0.068
JUN					
17...	1720	0.05	70	--	0.300
JUL					
15...	1325	0.01	70	--	0.208
05358188 MUD LAKE OUTLET NR BUTTERNUT LAKE NR PARK FALLS,WI (LAT 45 56 38N LONG 090 31 32W)					
NOV 2002					
15...	0800	0.88	70	0.025	0.033
DEC					
12...	0800	0.37	70	0.032	0.044
JAN 2003					
16...	1120	0.01	70	0.058	0.137
MAR					
21...	1030	1.1	70	0.033	0.080
APR					
15...	0745	0.96	70	0.027	0.064
18...	0825	1.9	70	0.037	0.065
21...	1640	6.7	70	0.021	0.052
MAY					
13...	1155	10	70	0.023	0.040
JUN					
17...	1620	0.53	70	0.032	0.048
JUL					
15...	1110	0.29	70	---	0.062

WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES  
WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unf 25 degC (00095)	Temperature, water, deg C (00010)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)
05390680 MUSKELLUNGE CK-MUSKELLUNGE L OTL-NR EAGLE RIVER,WI (LAT 45 57 06N LONG 089 23 24W)									
OCT 2002									
11...	1200	--	70	--	--	--	--	0.013	0.037
29...	0800	3.4	70	--	--	--	--	0.015	0.036
JAN 2003									
09...	1305	2.5	70	10.0	7.2	91	2.4	0.018	0.043
MAR									
12...	1545	2.6	70	9.9	6.7	106	0.8	0.009	0.011
MAY									
06...	1310	4.4	70	--	--	--	--	0.014	0.046
JUN									
17...	1150	3.4	70	--	--	--	--	0.021	0.060
JUL									
16...	0845	1.5	70	--	--	--	--	0.024	0.040
AUG									
13...	0920	1.1	70	--	--	--	--	0.012	0.040
SEP									
25...	0800	1.5	70	--	--	--	--	0.015	0.040
05390681 MUSKELLUNGE CK AT TRAIL CROSSING NR EAGLE RIVER,WI (LAT 45 56 52N LONG 089 24 10W)									
OCT 2002									
11...	1105	19	70	--	--	--	--	0.020	0.041
29...	0900	4.6	70	--	--	--	--	0.018	0.037
JAN 2003									
09...	1200	2.8	70	11.9	7.4	88	0.6	0.033	0.054
MAR									
12...	1630	3.9	70	10.0	6.8	98	0.0	0.023	0.049
MAY									
06...	1335	7.8	70	--	--	--	--	0.022	0.058
JUN									
17...	1210	5.6	70	--	--	--	--	0.031	0.073
JUL									
16...	0915	3.2	70	--	--	--	--	0.027	0.047
AUG									
13...	0945	1.9	70	--	--	--	--	0.026	0.043
SEP									
25...	0850	2.1	70	--	--	--	--	0.023	0.039
05390685 MUSKELLUNGE CREEK NEAR ST. GERMAIN, WI (LAT 45 56 01N LONG 089 25 29W)									
OCT 2002									
29...	1030	8.9	70	--	--	--	--	0.020	0.032
JAN 2003									
09...	1100	5.9	70	10.8	7.4	83	0.0	0.030	0.049
MAR									
12...	1745	6.1	70	8.1	6.9	91	0.0	0.020	0.042
MAY									
06...	1450	11	70	--	--	--	--	0.027	0.068
JUN									
17...	1315	7.5	70	--	--	--	--	0.043	0.064
JUL									
16...	1040	5.4	70	--	--	--	--	0.038	0.060
AUG									
13...	0800	4.6	70	--	--	--	--	0.037	0.048
SEP									
25...	1005	4.7	70	--	--	--	--	0.025	0.035

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Phosphorus, water, unfltrd mg/L (00665)
05390701 LITTLE SAINT GERMAIN CREEK NEAR EAGLE RIVER, WI (LAT 45 53 55N LONG 089 27 10W)								
OCT 2002								
11...	1235	--	70	--	--	--	--	0.044
29...	0655	20	70	--	--	--	--	0.029
JAN 2003								
09...	1605	14	70	9.0	7.2	85	2.5	0.043
MAR								
13...	0820	5.6	70	7.1	6.5	106	0.3	0.040
MAY								
06...	1230	2.2	70	--	--	--	--	0.033
JUN								
17...	1050	7.2	70	--	--	--	--	0.036
JUL								
16...	0745	6.2	70	--	--	--	--	0.036
AUG								
13...	1100	6.7	70	--	--	--	--	0.081
SEP								
25...	1025	6.1	70	--	--	--	--	0.065

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water unfltrd mg/L (00665)
054279505 TRIB TO PHEASANT BRANCH TRIB AT MIDDLETON, WI (LAT 43 07 20N LONG 089 29 19W)								
MAR 2003								
15...	1530	E.40	70	35	43	--	0.027	9.47
MAY								
09...	0245	E1.6	50	3,200	150	54.0	0.005	37.1
10...	2240	>1.6	50	4,470	37	--	0.152	16.0
430734089291500 TRIB TO PHEASANT BRANCH TRIB SITE2 AT MIDDLETON, WI (LAT 43 07 34N LONG 089 29 15W)								
MAR 2003								
15...	1545	E.40	70	66	62	--	0.059	12.7
MAY								
09...	0230	>1.6	50	2,400	74	22.6	0.096	21.6
10...	2230	>1.6	50	7,880	43	--	0.108	18.4

WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES  
 WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
430327088224900 NAGAWICKA LAKE TRIB AT GARRISON CT AT DELAFIELD,WI (LAT 43 03 27N LONG 088 22 49W)						
MAY 2003						
01...	1200	--	50	--	0.737	1,210
01...	1215	--	50	--	0.739	1,230
05...	1145	--	70	--	0.132	8
09...	0930	0.46	70	--	0.118	12
JUL						
06...	1200	--	50	--	0.358	410
15...	1200	--	50	--	0.687	1,040
SEP						
14...	0800	--	50	--	0.368	321

430328088230300 NAGAWICKA LAKE TRIB @ MILWAUKEE ST AT DELAFIELD,WI (LAT 43 03 28N LONG 088 23 03W)						
DEC 2002						
16...	1445	0.61	10	--	0.022	53
JAN 2003						
08...	1150	0.45	10	--	0.025	20
FEB						
13...	1315	0.39	70	--	0.015	13
MAY						
05...	1225	1.1	70	--	0.094	22
09...	1000	2.2	70	--	0.117	33
JUN						
03...	1105	0.51	70	--	0.155	32
AUG						
04...	1350	0.34	70	0.023	0.155	10
SEP						
03...	1430	--	70	--	0.021	14

430501088235400 NAGAWICKA LAKE TRIBUTARY NR NASHOTAH, WI (LAT 43 05 01N LONG 088 23 54W)						
MAY 2003						
01...	1200	--	50	--	1.18	36
01...	1215	--	50	--	1.18	24
01...	1230	--	50	--	1.16	18
09...	1245	--	70	--	0.298	60

054064509 BLACK EARTH CREEK LOW FLOW #3 NR CROSS PLAINS, WI (LAT 43 05 49N LONG 089 37 32W)

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Turbidity, wat unflab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. 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)
APR 2003													
29...	1130	1.5	50	6.8	756	15.6	8.4	632	13.0	--	--	--	--
JUN													
12...	1315	1.0	10	7.1	740	11.3	8.2	631	15.5	--	--	--	--
JUL													
24...	1215	0.84	10	4.6	747	10.3	8.1	638	19.0	--	--	--	--
AUG													
12...	1100	0.66	10	9.4	753	11.1	8.2	657	18.5	77.3	41.5	1.08	9.27
26...	1430	0.52	10	9.6	730	8.9	8.1	656	25.0	--	--	--	--
SEP													
25...	1000	0.52	10	4.7	757	11.0	8.4	662	9.5	--	--	--	--

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

## 054064509 BLACK EARTH CREEK LOW FLOW #3 NR CROSS PLAINS, WI (LAT 43 05 49N LONG 089 37 32W)

Date	ANC, wat unfixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	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)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)
APR 2003													
29...	290	25.5	<0.17	--	16.5	--	0.60	<0.04	2.66	0.019	E.02	<0.04	0.09
JUN 12...	302	21.9	<0.2	--	12.0	--	0.49	E.04	2.81	0.043	0.06	0.06	0.11
JUL 24...	306	23.4	<0.2	--	12.6	--	0.36	<0.04	2.83	0.036	0.10	0.11	0.15
AUG 12...	--	21.4	<0.2	18.8	14.6	382	0.26	E.03	3.42	0.066	0.11	0.12	0.16
26...	316	22.0	<0.2	--	13.5	--	0.35	<0.04	3.36	0.056	0.12	0.15	0.17
SEP 25...	264	23.9	<0.2	--	14.4	--	0.18	E.03	4.19	0.024	0.08	0.08	0.10

Date	COD, high level, water, unfltrd mg/L (00340)	Fecal coliform, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Arsenic water unfltrd ug/L (01002)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover-able, ug/L (01034)	Cobalt water, unfltrd recover-able, ug/L (01037)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, unfltrd recover-able, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)
APR 2003													
29...	20	37	--	--	--	--	--	--	--	--	--	--	--
JUN 12...	20	200	--	--	--	--	--	--	--	--	--	--	--
JUL 24...	<10	200	--	--	--	--	--	--	--	--	--	--	--
AUG 12...	<10	360	940	<2	12	<0.2	0.8	<3.4	E.7	E7	490	M	65.8
26...	10	380	--	--	--	--	--	--	--	--	--	--	--
SEP 25...	<10	210	--	--	--	--	--	--	--	--	--	--	--

Date	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, unfltrd recoverable, ug/L (01067)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment concentration mg/L (80154)
APR 2003					
29...	--	--	--	--	5
JUN 12...	--	--	--	--	17
JUL 24...	--	--	--	--	17
AUG 12...	104	<0.02	<2.0	5	23
26...	--	--	--	--	50
SEP 25...	--	--	--	--	32

Date	Time	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
AUG 2003					
15...	0520	8.1	8.0	666	18.2
15...	0550	8.1	8.1	666	18.1
15...	0620	8.1	8.1	666	18.0
15...	0650	8.2	8.1	666	17.9
15...	0720	8.3	8.1	666	17.9
15...	0750	8.4	8.1	667	17.9
15...	0820	8.6	8.1	667	18.0
15...	0850	8.8	8.1	667	18.2
15...	0920	8.9	8.1	666	18.5
15...	0950	9.1	8.1	666	18.9



## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

05427270 KOSHKONONG CREEK NEAR SUN PRAIRIE, WI (LAT 43 08 58N LONG 089 14 13W)

Date	Manganese, water, unfltrd recover- able, ug/L (01055)	Mercury water, unfltrd recover- able, ug/L (71900)	Nickel, water, unfltrd recover- able, ug/L (01067)	Zinc, water, unfltrd recover- able, ug/L (01092)	Sus- pended sediment concentration mg/L (80154)
APR 2003					
30...	--	--	--	--	4
JUN					
12...	--	--	--	--	7
JUL					
23...	--	--	--	--	2
AUG					
13...	11.9	<0.02	E1.9	28	2
26...	--	--	--	--	10
SEP					
29...	--	--	--	--	1

Date	Time	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
AUG 2003					
13...	0530	7.8	7.8	1,750	19.0
13...	0600	7.6	7.9	1,730	18.9
13...	0630	7.6	7.9	1,700	18.9
13...	0700	7.9	7.9	1,680	18.8
13...	0730	8.7	8.0	1,670	18.9
13...	0745	9.2	8.0	1,670	19.0
13...	0800	9.8	8.1	1,670	19.1
13...	0830	11.2	8.1	1,700	19.4
13...	0900	12.5	8.2	1,770	19.7
13...	0930	13.1	8.3	1,770	19.9
13...	1000	13.3	8.3	1,760	20.0
13...	1030	13.4	8.3	1,740	20.1





## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

05427507 KOSHKONONG CREEK NEAR ROCKDALE, WI (LAT 42 57 05N LONG 089 01 37W)

Date	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, unfltrd recoverable, ug/L (01067)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment concentration mg/L (80154)
APR 2003					
30...	--	--	--	--	82
JUN					
12...	--	--	--	--	180
JUL					
23...	--	--	--	--	89
AUG					
11...	165	0.03	2.8	11	115
26...	--	--	--	--	82
SEP					
29...	--	--	--	--	17

Date	Time	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)
AUG 2003					
11...	0530	7.9	8.1	922	21.1
11...	0600	7.9	8.1	917	20.9
11...	0630	7.9	8.1	913	20.8
11...	0700	7.9	8.2	910	20.8
11...	0730	7.9	8.2	908	20.8
11...	0800	8.0	8.2	906	20.8
11...	0815	8.0	8.2	905	21.0
11...	0830	8.0	8.2	904	20.9
11...	0900	8.1	8.2	904	21.0
11...	0930	8.2	8.2	903	21.0
11...	1000	8.3	8.2	903	21.2
11...	1030	8.4	8.2	903	21.3



## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

054235980 WEST BRANCH SUGAR RIVER NEAR MT. VERNON, WI (LAT 42 54 47N LONG 089 37 19W)

Date	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, unfltrd recoverable, ug/L (01067)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment concentration mg/L (80154)
MAY 2003					
19...	--	--	--	--	48
JUN					
13...	--	--	--	--	84
JUL					
24...	--	--	--	--	63
AUG					
14...	57.5	<0.02	<2.0	5	78
27...	--	--	--	--	60
SEP					
25...	--	--	--	--	33

Date	Time	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
AUG 2003					
22...	0520	7.1	7.9	718	18.5
22...	0550	7.1	8.0	716	18.2
22...	0620	7.2	8.0	714	18.0
22...	0650	7.3	8.0	713	17.7
22...	0720	7.4	8.0	713	17.5
22...	0750	7.6	8.0	712	17.4
22...	0820	7.8	8.0	712	17.3
22...	0850	8.3	8.0	713	17.4
22...	0920	8.9	8.1	715	17.5
22...	0950	9.4	8.1	719	17.6

Water-quality data were collected at the following sites for the period May to October 2003. Samples are either equal-width increment (EWI) samples (sample code 10) or grab samples (sample code 70).

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd mg/L as N (00608)	Nitrite + nitrate water fltrd mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
STREAMS TRIBUTARY TO LAKE SUPERIOR													
04027500 WHITE RIVER NEAR ASHLAND, WI (LAT 46 29 54N LONG 090 54 11W)													
MAY 2003													
22...	0732	670	70	11.2	7.6	94	13.0	0.86	0.020	<0.022	0.020	0.054	20
JUN 19...	1400	209	70	8.5	8.0	176	19.3	0.22	0.035	<0.022	0.017	0.045	16
JUL 16...	1537	190	30	9.0	7.7	177	19.9	0.25	0.029	<0.022	0.018	0.045	11
AUG 20...	1225	183	70	8.3	8.1	182	22.8	0.17	0.041	<0.022	0.016	0.050	16
SEP 17...	1137	180	30	9.8	7.9	187	15.3	0.27	0.017	<0.022	0.014	0.036	9
OCT 15...	1135	177	70	10.5	8.1	187	10.2	0.26	<0.013	<0.022	0.013	0.028	7
STREAMS TRIBUTARY TO LAKE MICHIGAN													
04067500 MENOMINEE RIVER NEAR MC ALLISTER, WI (LAT 45 19 33N LONG 087 39 48W)													
MAY 2003													
20...	1355	7,260	30	11.7	7.8	145	14.9	0.37	0.030	0.142	0.012	0.026	6
JUN 16...	1630	4,040	30	10.4	8.0	209	22.2	0.45	0.034	0.127	0.012	0.051	14
JUL 15...	0839	1,500	30	9.1	8.2	284	23.5	0.31	0.024	<0.022	0.011	0.027	2
AUG 19...	0940	1,490	30	--	8.1	275	25.2	0.26	0.013	<0.022	0.010	0.025	3
SEP 16...	0859	2,240	30	8.1	8.2	293	18.4	0.37	<0.013	0.041	0.019	0.042	5
OCT 14...	0900	1,650	30	9.8	8.4	292	13.4	0.46	<0.013	<0.022	0.008	0.024	<2
04069500 PESHTIGO RIVER AT PESHTIGO, WI (LAT 45 02 49N LONG 087 44 40W)													
MAY 2003													
20...	1135	1,410	30	8.9	7.9	217	15.7	0.59	0.074	0.228	0.016	0.029	3
JUN 16...	1430	1,160	30	9.0	7.8	246	21.0	0.62	0.063	0.249	0.019	0.039	3
JUL 15...	1004	448	30	8.4	8.0	264	23.1	0.51	0.018	0.210	0.014	0.031	<2
AUG 19...	0800	477	30	--	8.1	283	24.9	0.43	0.017	0.100	0.009	0.024	<2
SEP 16...	0719	1,570	30	6.6	8.0	310	17.1	0.64	0.045	0.301	0.024	0.038	2
OCT 14...	0740	396	30	9.1	9.1	296	14.1	0.41	<0.013	0.271	0.009	0.026	2
04071000 OCONTO RIVER NEAR GILLETT, WI (LAT 44 51 55N LONG 088 18 00W)													
MAY 2003													
19...	1903	887	30	9.0	7.7	214	15.6	0.65	0.032	0.139	0.012	0.030	7
JUN 17...	0725	689	30	8.6	7.8	232	18.8	0.72	0.036	0.208	0.020	0.054	19
JUL 14...	1716	346	30	9.7	8.4	287	22.9	0.35	0.014	0.201	0.012	0.032	7
AUG 18...	1710	315	30	8.3	8.5	283	26.5	0.27	0.019	0.206	0.011	0.025	5
SEP 15...	1626	760	30	9.0	7.7	277	18.0	0.75	0.029	0.228	0.022	0.065	19
OCT 13...	1552	324	30	10.8	8.1	298	13.6	0.37	<0.013	0.050	0.008	0.027	2

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Field turbidity (NTU) 99905 (99905)	Secchi Tube (cm) 99910 (99910)
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## STREAMS TRIBUTARY TO LAKE SUPERIOR--Continued

04027500 WHITE RIVER NEAR ASHLAND, WI (LAT 46 29 54N LONG 090 54 11W)

MAY 2003		
22...	--	35.000
JUN		
19...	35.9	40.000
JUL		
16...	--	40.000
AUG		
20...	--	30.000
SEP		
17...	--	30.000
OCT		
15...	--	65.000

## STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued

04067500 MENOMINEE RIVER NEAR MC ALLISTER, WI (LAT 45 19 33N LONG 087 39 48W)

MAY 2003		
20...	--	120.00
JUN		
16...	4.80	120.00
JUL		
15...	--	120.00
AUG		
19...	--	120.00
SEP		
16...	--	100.00
OCT		
14...	--	120.00

04069500 PESHTIGO RIVER AT PESHTIGO, WI (LAT 45 02 49N LONG 087 44 40W)

MAY 2003		
20...	--	120.00
JUN		
16...	3.80	120.00
JUL		
15...	--	120.00
AUG		
19...	--	120.00
SEP		
16...	--	120.00
OCT		
14...	--	120.00

04071000 OCONTO RIVER NEAR GILLETT, WI (LAT 44 51 55N LONG 088 18 00W)

MAY 2003		
19...	--	120.00
JUN		
17...	15.5	92.000
JUL		
14...	--	120.00
AUG		
18...	--	120.00
SEP		
15...	--	80.000
OCT		
13...	--	120.00

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued													
040719496 SOUTH BRANCH SUAMICO RIVER AT KUNESH (LAT 44 37 03N LONG 088 11 12W)													
MAY 2003													
20...	0832	4.1	10	7.6	7.6	800	14.6	0.49	0.058	0.936	0.023	0.030	4
JUN 16...	1145	3.4	10	11.7	8.1	844	17.4	1.6	0.076	8.67	0.124	0.148	<2
JUL 14...	1844	0.13	70	7.1	7.2	1,220	18.7	1.1	0.039	6.86	0.140	0.198	<2
AUG 18...	1810	0.42	70	6.7	8.0	826	23.9	1.2	0.051	2.25	0.268	0.295	4
SEP 15...	1725	5.9	70	5.5	7.2	540	17.0	1.7	0.049	1.02	0.541	0.606	5
OCT 13...	1731	0.14	30	3.5	7.2	1,030	13.7	2.6	0.022	1.40	0.618	1.07	15
04073500 FOX RIVER AT BERLIN, WI (LAT 43 57 14N LONG 088 57 08W)													
MAY 2003													
19...	1330	2,010	30	6.4	7.9	356	17.3	1.5	0.038	0.183	0.020	0.100	30
JUN 16...	1412	1,280	30	8.1	8.2	376	24.2	1.6	0.070	0.270	0.025	0.128	52
JUL 14...	1141	824	30	10.9	8.6	363	24.1	2.2	0.015	0.305	0.014	0.148	61
AUG 20...	1615	438	30	12.7	9.0	343	28.0	1.8	<0.013	<0.022	0.011	0.137	54
SEP 15...	1051	606	30	8.2	8.1	361	18.6	1.7	0.023	0.450	0.015	0.149	58
OCT 17...	0859	534	30	9.6	8.4	375	10.1	0.97	<0.013	0.521	0.008	0.069	22
04077400 WOLF RIVER NEAR SHAWANO, WI (LAT 44 50 09N LONG 088 37 30W)													
MAY 2003													
19...	1710	E1280	10	9.1	7.9	196	15.7	0.78	0.050	0.371	0.029	0.046	6
JUN 17...	0950	E970	30	7.8	7.9	220	21.4	0.46	0.073	0.191	0.021	0.045	8
JUL 14...	1505	E360	70	7.6	8.2	289	22.8	0.73	0.049	0.260	0.016	0.036	5
AUG 18...	1510	E290	70	5.3	8.2	271	24.7	0.41	0.044	0.112	0.014	0.032	4
SEP 15...	1449	E400	70	9.4	8.0	251	16.9	0.65	0.031	0.127	0.015	0.032	7
OCT 13...	1415	E290	70	9.8	8.2	280	13.4	0.40	<0.013	0.165	0.006	0.024	4
04077601 WEST BRANCH RED RIVER NEAR NEOPIT, WI (LAT 44 57 51N LONG 088 59 18W)													
MAY 2003													
19...	1435	45	10	9.8	8.1	323	13.0	2.0	0.072	4.04	0.106	0.135	2
JUN 17...	1200	28	10	10.2	8.1	381	16.9	0.52	0.036	1.23	0.037	0.059	8
JUL 14...	1245	22	10	10.5	7.8	430	17.9	0.33	0.021	1.45	0.036	0.052	4
AUG 18...	1245	16	70	8.6	8.1	458	19.9	0.31	0.015	1.34	0.042	0.053	<2
SEP 15...	1219	43	30	9.9	7.3	326	13.7	1.0	0.030	0.589	0.043	0.074	12
OCT 13...	1206	24	70	10.7	8.5	408	10.5	0.40	<0.013	1.02	0.015	0.025	4

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Field turbidity (NTU) 99905 (99905)	Secchi tube (cm) 99910 (99910)
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## STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued

040719496 SOUTH BRANCH SUAMICO RIVER AT KUNESH (LAT 44 37 03N LONG 088 11 12W)

MAY 2003 20...	--	120.00
JUN 16...	2.10	120.00
JUL 14...	--	120.00
AUG 18...	--	120.00
SEP 15...	--	80.000
OCT 13...	--	30.000

04073500 FOX RIVER AT BERLIN, WI (LAT 43 57 14N LONG 088 57 08W)

MAY 2003 19...	25.8	42.000
JUN 16...	--	25.000
JUL 14...	--	22.000
AUG 20...	54.0	26.000
SEP 15...	--	23.000
OCT 17...	17.5	45.000

04077400 WOLF RIVER NEAR SHAWANO, WI (LAT 44 50 09N LONG 088 37 30W)

MAY 2003 19...	--	120.00
JUN 17...	6.80	92.000
JUL 14...	--	120.00
AUG 18...	--	120.00
SEP 15...	--	120.00
OCT 13...	--	120.00

04077601 WEST BRANCH RED RIVER NEAR NEOPIT, WI (LAT 44 57 51N LONG 088 59 18W)

MAY 2003 19...	--	120.00
JUN 17...	7.50	120.00
JUL 14...	--	120.00
AUG 18...	--	120.00
SEP 15...	--	105.00
OCT 13...	--	120.00

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Dis-charge, cfs (00060)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued													
04078500 EMBARRASS RIVER NEAR EMBARRASS, WI (LAT 44 43 29N LONG 088 44 10W)													
MAY 2003 20...	1030	--	452	30	9.1	8.2	325	14.9	0.73	0.060	1.11	0.034	0.047
JUN 17...	0909	--	316	70	7.3	7.9	330	19.7	0.74	0.089	1.11	0.055	0.083
JUL 15...	0733	--	160	30	7.0	8.2	470	21.3	0.57	0.036	1.71	0.046	0.067
AUG 20...	0730	--	110	30	6.3	8.2	476	23.1	0.46	0.019	1.04	0.025	0.040
SEP 15...	1645	--	490	30	9.1	8.2	364	17.9	0.94	0.059	0.786	0.048	0.078
OCT 16...	0844	--	160	30	9.5	8.0	479	8.8	0.50	<0.013	1.24	0.018	0.025
04079000 WOLF RIVER AT NEW LONDON, WI (LAT 44 23 32N LONG 088 44 25W)													
MAY 2003 20...	0745	--	4,130	30	5.7	7.6	307	16.3	1.1	0.062	0.316	0.071	0.095
JUN 16...	1826	--	3,140	70	--	7.5	302	20.7	1.1	0.083	0.430	0.091	0.136
JUL 14...	1711	--	1,160	30	10.6	8.3	421	24.0	0.67	0.020	1.08	0.045	0.102
AUG 20...	0945	--	928	30	7.3	8.3	420	24.9	0.59	0.026	0.254	0.041	0.102
SEP 15...	1524	--	1,290	30	8.1	8.2	425	19.0	0.66	0.078	0.687	0.063	0.141
OCT 16...	1351	--	926	70	9.6	8.1	465	11.0	0.41	<0.013	0.810	0.023	0.041
04080000 LITTLE WOLF RIVER AT ROYALTON, WI (LAT 44 24 45N LONG 088 51 55W)													
MAY 2003 19...	1905	--	E930	70	8.8	8.1	354	16.9	0.79	0.057	1.16	0.033	0.052
JUN 16...	1613	--	E730	10	9.1	8.2	367	23.3	0.91	0.068	1.01	0.049	0.073
JUL 14...	1608	--	E330	70	14.2	8.6	447	23.5	0.41	0.026	1.49	0.025	0.040
AUG 20...	1130	--	E280	30	9.2	8.3	461	24.2	0.42	0.042	1.23	0.022	0.036
SEP 15...	1435	--	E360	30	9.2	8.1	408	18.2	0.74	0.043	1.06	0.030	0.058
OCT 16...	1254	--	E280	30	11.0	8.2	466	10.1	0.32	<0.013	1.63	0.012	0.018
04084500 FOX R AT RAPIDE CROCHE DAM NEAR WRIGHTSTOWN, WI (LAT 44 19 03N LONG 088 11 50W)													
MAY 2003 20...	1320	9,460	--	30	9.0	8.3	392	16.6	1.1	0.168	0.298	0.037	0.092
JUN 17...	1140	6,000	--	30	8.3	8.5	382	23.0	0.96	0.057	0.370	0.031	0.109
JUL 15...	1003	2,040	--	30	9.6	8.9	391	24.8	1.2	0.024	0.111	0.092	0.187
AUG 19...	1825	1,990	--	30	13.5	9.0	416	28.0	1.1	0.026	0.124	0.072	0.209
SEP 16...	0758	3,010	--	30	8.9	8.5	420	20.0	1.4	0.090	0.604	0.102	0.212
OCT 16...	1559	2,160	--	30	9.1	8.2	414	13.2	1.0	0.249	0.190	0.074	0.124



## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Suspended sediment concentration mg/L (80154)	Field turbidity (NTU) (99905)	Secchi tube (cm) (99910)
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## STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued

04078500 EMBARRASS RIVER NEAR EMBARRASS, WI (LAT 44 43 29N LONG 088 44 10W)

MAY 2003			
20...	6	4.60	120.00
JUN 17...	13	--	84.000
JUL 15...	6	--	120.00
AUG 20...	2	1.10	120.00
SEP 15...	13	--	87.000
OCT 16...	<2	2.10	120.00

04079000 WOLF RIVER AT NEW LONDON, WI (LAT 44 23 32N LONG 088 44 25W)

MAY 2003			
20...	10	8.00	96.000
JUN 16...	20	--	53.000
JUL 14...	33	--	35.000
AUG 20...	25	32.0	46.000
SEP 15...	66	--	45.000
OCT 16...	6	5.70	120.00

04080000 LITTLE WOLF RIVER AT ROYALTON, WI (LAT 44 24 45N LONG 088 51 55W)

MAY 2003			
19...	7	6.50	62.000
JUN 16...	10	--	87.000
JUL 14...	<2	--	120.00
AUG 20...	<2	2.30	120.00
SEP 15...	11	--	120.00
OCT 16...	2	1.40	120.00

04084500 FOX R AT RAPIDE CROCHE DAM NEAR WRIGHTSTOWN, WI (LAT 44 19 03N LONG 088 11 50W)

MAY 2003			
20...	22	26.5	50.000
JUN 17...	17	--	46.000
JUL 15...	23	--	38.000
AUG 19...	38	65.0	22.000
SEP 16...	35	--	24.000
OCT 16...	16	24.2	48.000

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Dis-charge, cfs (00060)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued													
04086000 SHEBOYGAN RIVER AT SHEBOYGAN, WI (LAT 43 44 25N LONG 087 45 35W)													
MAY 2003 20...	1610	--	490	30	9.9	8.4	600	18.0	1.7	0.047	1.17	0.053	0.169
JUN 17...	1421	--	128	10	13.3	8.8	679	23.0	1.8	0.057	0.170	0.026	0.186
JUL 15...	1205	--	122	30	12.2	9.1	591	24.4	2.0	0.021	<0.022	0.044	0.266
AUG 19...	1615	--	58	30	13.5	8.9	668	26.9	1.1	<0.013	2.79	0.061	0.132
SEP 16...	1021	--	68	30	8.7	8.2	633	17.4	0.84	0.119	0.940	0.064	0.113
OCT 15...	1628	--	58	30	10.9	8.4	711	12.7	0.58	0.044	0.290	0.029	0.085
04087000 MILWAUKEE RIVER AT MILWAUKEE, WI (LAT 43 06 00N LONG 087 54 32W)													
MAY 2003 20...	1845	--	537	30	9.5	8.3	734	18.0	1.0	0.048	1.07	0.066	0.119
JUN 17...	1700	--	209	30	13.6	8.7	772	24.6	1.2	0.040	0.700	0.044	0.131
JUL 15...	1342	--	136	30	11.9	8.6	848	25.0	1.4	0.059	0.126	0.105	0.244
AUG 19...	1415	--	50	30	11.3	8.6	852	27.2	1.2	0.024	2.12	0.138	0.231
SEP 16...	1151	--	191	30	7.2	8.2	839	20.2	0.93	0.074	0.200	0.105	0.167
OCT 15...	1442	--	66	30	7.9	8.4	853	14.0	0.74	<0.013	0.410	0.045	0.109
ST. CROIX RIVER BASIN													
05332500 NAMEKAGON RIVER NEAR TREGO, WI (LAT 45 56 53N LONG 091 53 17W)													
MAY 2003 22...	1149	790	--	70	10.4	7.6	120	14.9	0.49	0.040	0.121	0.014	0.030
JUN 19...	1100	511	--	30	7.6	7.7	154	22.6	0.36	0.044	0.100	0.014	0.033
JUL 17...	1016	460	--	30	8.3	8.4	162	22.3	0.32	0.036	0.083	0.016	0.039
AUG 21...	0753	360	--	70	7.4	8.3	178	25.4	0.20	0.040	0.027	0.011	0.030
SEP 18...	0658	320	--	70	8.5	8.3	181	18.9	<0.14	0.020	0.087	0.024	0.048
OCT 16...	0819	690	--	70	9.4	8.5	181	12.5	0.37	<0.013	0.059	0.009	0.023
05333500 ST. CROIX RIVER NEAR DANBURY, WI (LAT 46 04 30N LONG 092 14 50W)													
MAY 2003 22...	1347	--	3,320	30	9.6	7.2	78	13.5	0.59	0.023	0.050	0.013	0.024
JUN 19...	0830	--	1,290	30	8.7	7.7	114	18.9	0.38	0.027	0.080	0.015	0.034
JUL 17...	1142	--	1,280	30	9.1	8.1	128	23.1	0.46	<0.013	<0.022	0.014	0.033
AUG 21...	0945	--	743	30	8.0	8.1	141	24.3	0.21	<0.013	<0.022	0.009	0.021
SEP 18...	0834	--	707	30	8.8	8.2	144	18.6	0.20	<0.013	<0.022	0.010	0.016
OCT 16...	1000	--	811	30	11.5	7.9	141	7.2	0.35	<0.013	<0.022	0.008	0.014

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Suspended sediment concentration mg/L (80154)	Field turbidity (NTU) (99905)	Secchi tube (cm) (99910)
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## STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued

04086000 SHEBOYGAN RIVER AT SHEBOYGAN, WI (LAT 43 44 25N LONG 087 45 35W)

MAY 2003			
20...	59	62.3	48.000
JUN 17...	59	--	15.000
JUL 15...	67	--	18.000
AUG 19...	11	16.2	54.000
SEP 16...	14	--	50.000
OCT 15...	9	--	46.000

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI (LAT 43 06 00N LONG 087 54 32W)

MAY 2003			
20...	14	16.6	52.000
JUN 17...	18	--	38.000
JUL 15...	23	--	30.000
AUG 19...	14	16.2	46.000
SEP 16...	15	--	43.000
OCT 15...	14	--	42.000

## ST. CROIX RIVER BASIN--Continued

05332500 NAMEKAGON RIVER NEAR TREGO, WI (LAT 45 56 53N LONG 091 53 17W)

MAY 2003			
22...	3	--	120.00
JUN 19...	3	1.60	120.00
JUL 17...	4	--	120.00
AUG 21...	<2	--	120.00
SEP 18...	<2	--	120.00
OCT 16...	<2	--	120.00

05333500 ST. CROIX RIVER NEAR DANBURY, WI (LAT 46 04 30N LONG 092 14 50W)

MAY 2003			
22...	2	--	120.00
JUN 19...	5	3.80	120.00
JUL 17...	5	--	120.00
AUG 21...	<2	--	120.00
SEP 18...	<2	--	120.00
OCT 16...	2	--	120.00

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
ST. CROIX RIVER BASIN--Continued													
05340500 ST. CROIX RIVER AT ST. CROIX FALLS, WI (LAT 45 24 25N LONG 092 38 49W)													
MAY 2003													
22...	1633	13,500	70	11.1	7.3	189	14.3	0.85	0.032	0.108	0.026	0.057	11
JUN 18...	1930	5,560	70	7.3	7.7	144	23.8	0.64	0.037	0.150	0.027	0.057	7
JUL 17...	1421	7,090	70	7.8	7.6	146	23.6	0.89	0.023	0.159	0.055	0.092	8
AUG 21...	1145	1,960	70	7.5	8.1	191	26.6	0.41	0.018	0.098	0.010	0.034	4
SEP 18...	1050	1,820	70	9.5	8.2	199	18.9	0.42	0.018	0.178	0.013	0.037	4
OCT 16...	1205	2,020	70	11.1	7.9	199	11.6	0.49	<0.013	0.122	0.011	0.024	3
CHIPPEWA RIVER BASIN													
05356500 CHIPPEWA RIVER NEAR BRUCE, WI (LAT 45 27 08N LONG 091 15 39W)													
MAY 2003													
21...	0816	6,520	30	9.6	6.5	52	13.1	0.62	0.025	0.087	0.018	0.034	4
JUN 18...	0715	1,560	30	8.1	7.5	80	21.1	0.47	0.051	0.133	0.021	0.044	8
JUL 15...	1855	938	30	9.6	7.9	99	22.5	0.39	0.018	0.148	0.021	0.037	4
AUG 19...	1910	598	30	--	7.9	114	26.0	0.30	0.022	0.130	0.012	0.024	<2
SEP 16...	1757	515	30	10.3	8.1	112	18.0	0.20	<0.013	0.163	0.012	0.021	<2
OCT 14...	1749	634	30	10.8	8.2	118	12.1	0.60	<0.013	0.064	0.011	0.022	<2
05358330 NORTH FORK FLAMBEAU RIVER AT OXBO, WI (LAT 45 51 33N LONG 090 42 29W)													
MAY 2003													
21...	1600	E2180	30	10.2	7.1	76	15.5	0.46	0.031	0.074	0.013	0.029	5
JUN 19...	1630	E510	10	8.4	7.6	96	23.6	0.35	0.030	0.079	0.022	0.041	4
JUL 16...	1225	E530	30	9.2	7.5	122	21.7	0.33	0.018	<0.022	0.022	0.035	<2
AUG 20...	1020	E240	30	--	8.0	147	24.2	0.38	0.021	<0.022	0.020	0.029	<2
SEP 17...	0928	E210	30	7.2	7.4	167	17.9	0.48	<0.013	0.030	0.018	0.030	<2
OCT 15...	0935	E200	30	10.0	8.0	163	9.3	0.50	<0.013	<0.022	0.014	0.032	3
05359500 SOUTH FORK FLAMBEAU RIVER NR PHILLIPS, WI (LAT 45 42 08N LONG 090 36 58W)													
MAY 2003													
21...	1350	E1870	30	10.1	6.9	49	14.1	0.68	0.020	0.024	0.014	0.027	4
JUN 20...	0900	E440	30	8.5	7.4	71	20.4	0.48	0.031	0.072	0.024	0.045	6
JUL 16...	1045	E450	30	9.0	7.7	77	21.0	0.59	0.030	<0.022	0.023	0.038	<2
AUG 20...	0900	E200	30	--	8.4	79	23.8	0.46	0.027	0.025	0.013	0.028	3
SEP 17...	0823	E180	30	7.9	7.5	109	17.2	0.39	0.016	<0.022	0.012	0.027	3
OCT 15...	0832	E180	30	10.5	8.7	108	9.7	0.52	<0.013	<0.022	0.011	0.022	<2

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Field turbidity (NTU) (99905 (99905)	Secchi tube (cm) 99910 (99910)
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## ST. CROIX RIVER BASIN--Continued

05340500 ST. CROIX RIVER AT ST. CROIX FALLS, WI (LAT 45 24 25N LONG 092 38 49W)

MAY 2003 22...	--	85.000
JUN 18...	6.10	105.00
JUL 17...	--	90.000
AUG 21...	--	120.00
SEP 18...	--	120.00
OCT 16...	--	120.00

## CHIPPEWA RIVER BASIN--Continued

05356500 CHIPPEWA RIVER NEAR BRUCE, WI (LAT 45 27 08N LONG 091 15 39W)

MAY 2003 21...	--	90.000
JUN 18...	6.00	110.00
JUL 15...	--	120.00
AUG 19...	--	120.00
SEP 16...	--	120.00
OCT 14...	--	120.00

05358330 NORTH FORK FLAMBEAU RIVER AT OXBO, WI (LAT 45 51 33N LONG 090 42 29W)

MAY 2003 21...	--	120.00
JUN 19...	2.60	120.00
JUL 16...	--	120.00
AUG 20...	--	120.00
SEP 17...	--	120.00
OCT 15...	--	120.00

05359500 SOUTH FORK FLAMBEAU RIVER NR PHILLIPS, WI (LAT 45 42 08N LONG 090 36 58W)

MAY 2003 21...	--	120.00
JUN 20...	3.10	120.00
JUL 16...	--	120.00
AUG 20...	--	120.00
SEP 17...	--	120.00
OCT 15...	--	120.00

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
CHIPPEWA RIVER BASIN--Continued													
05360500 FLAMBEAU RIVER NEAR BRUCE, WI (LAT 45 22 21N LONG 091 12 34W)													
MAY 2003													
21...	0950	5,020	70	9.8	6.8	57	14.4	0.95	0.035	0.087	0.019	0.033	3
JUN 18...	0900	1,170	30	8.1	7.2	81	21.1	0.39	0.038	0.138	0.022	0.039	3
JUL 15...	1743	1,210	30	8.1	7.7	94	22.7	0.40	0.022	0.097	0.023	0.042	3
AUG 19...	1810	550	30	--	7.8	122	25.5	0.48	0.019	<0.022	0.010	0.030	<2
SEP 16...	1730	484	30	8.7	7.9	145	19.5	0.30	<0.013	0.108	0.016	0.032	2
OCT 14...	1700	472	30	11.0	8.1	143	13.1	0.54	<0.013	0.029	0.013	0.031	3
05362000 JUMP RIVER AT SHELDON, WI (LAT 45 18 29N LONG 090 57 23W)													
MAY 2003													
21...	1144	917	30	10.8	7.0	65	14.1	0.62	0.027	0.031	0.028	0.036	<2
JUN 17...	1800	371	30	5.3	8.2	82	24.9	0.72	0.024	0.038	0.038	0.064	3
JUL 16...	0817	127	30	8.8	8.7	139	20.9	0.50	0.525	<0.022	0.025	0.042	<2
AUG 19...	1645	45	30	--	8.7	184	30.2	0.44	0.024	<0.022	0.014	0.031	--
SEP 16...	1604	52	30	12.0	8.4	161	20.6	0.21	<0.013	<0.022	0.009	0.017	2
OCT 14...	1535	119	30	11.4	8.1	188	12.9	0.48	<0.013	<0.022	0.009	0.027	2
05366500 EAU CLAIRE RIVER NEAR FALL CREEK, WI (LAT 44 48 35N LONG 091 16 54W)													
MAY 2003													
20...	1116	E860	30	9.6	7.3	85	14.1	0.59	0.030	0.420	0.087	0.080	7
JUN 16...	1723	E350	30	8.6	7.4	106	24.1	0.63	0.032	0.420	0.051	0.114	11
JUL 14...	1817	E120	30	9.0	7.8	109	22.3	0.48	0.025	0.449	0.052	0.079	2
AUG 18...	1747	E40	70	10.3	9.1	111	27.6	0.76	0.015	0.380	0.023	0.094	6
SEP 15...	1725	E50	70	13.4	8.6	116	19.8	0.70	0.014	0.559	0.027	0.073	6
OCT 14...	1730	E110	70	11.9	8.5	116	13.1	0.56	0.020	0.651	0.033	0.063	3
05367500 RED CEDAR RIVER NEAR COLFAX, WI (LAT 45 03 11N LONG 091 42 43W)													
MAY 2003													
20...	1346	E1690	30	9.6	7.7	138	14.6	0.59	0.033	0.820	0.052	0.107	14
JUN 17...	0818	E790	10	7.6	7.7	163	21.2	0.60	0.042	1.32	0.068	0.136	11
JUL 15...	0838	E1150	30	7.9	7.4	146	19.4	0.96	0.057	1.09	0.113	0.269	32
AUG 19...	0805	E530	30	7.0	7.7	187	23.9	0.48	0.017	1.23	0.093	0.126	4
SEP 16...	0730	E500	30	8.8	7.7	194	14.8	0.52	<0.013	1.44	0.081	0.109	3
OCT 15...	0745	E760	30	9.3	7.9	189	10.1	0.64	0.014	1.37	0.066	0.124	11

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Field turbidity (NTU) 99905 (99905)	Secchi tube (cm) 99910 (99910)
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## CHIPPEWA RIVER BASIN--Continued

## 05360500 FLAMBEAU RIVER NEAR BRUCE, WI (LAT 45 22 21N LONG 091 12 34W)

MAY		
2003		
21...	--	120.00
JUN		
18...	1.40	120.00
JUL		
15...	--	120.00
AUG		
19...	--	120.00
SEP		
16...	--	120.00
OCT		
14...	--	120.00

## 05362000 JUMP RIVER AT SHELDON, WI (LAT 45 18 29N LONG 090 57 23W)

MAY		
2003		
21...	--	120.00
JUN		
17...	2.20	120.00
JUL		
16...	--	120.00
AUG		
19...	--	120.00
SEP		
16...	--	120.00
OCT		
14...	--	120.00

## 05366500 EAU CLAIRE RIVER NEAR FALL CREEK, WI (LAT 44 48 35N LONG 091 16 54W)

MAY		
2003		
20...	--	65.000
JUN		
16...	--	62.000
JUL		
14...	3.80	120.00
AUG		
18...	--	100.00
SEP		
15...	8.00	120.00
OCT		
14...	--	120.00

## 05367500 RED CEDAR RIVER NEAR COLFAX, WI (LAT 45 03 11N LONG 091 42 43W)

MAY		
2003		
20...	--	70.000
JUN		
17...	--	86.000
JUL		
15...	33.8	40.000
AUG		
19...	--	120.00
SEP		
16...	2.80	120.00
OCT		
15...	--	110.00

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
CHIPPEWA RIVER BASIN--Continued													
05369500 CHIPPEWA RIVER AT DURAND, WI (LAT 44 37 42N LONG 091 58 08W)													
MAY 2003													
20...	1612	2,250	30	9.7	7.4	89	15.6	0.62	0.035	0.330	0.034	0.074	18
JUN 17...	1041	9,040	30	8.7	7.7	147	22.0	0.44	0.018	0.578	0.030	0.078	14
JUL 15...	1043	6,900	30	9.0	8.1	166	22.6	0.91	0.028	0.675	0.041	0.150	42
AUG 19...	1030	3,050	30	8.6	8.6	203	25.8	0.56	<0.013	0.566	0.023	0.080	9
SEP 16...	0945	2,900	30	9.6	8.8	196	17.8	0.63	<0.013	0.640	0.030	0.077	8
OCT 15...	1025	3,590	30	10.9	8.6	200	11.3	0.69	<0.013	0.969	0.018	0.070	7
BUFFALO RIVER BASIN													
05372000 BUFFALO RIVER NEAR TELL, WI (LAT 44 23 30N LONG 091 50 55W)													
MAY 2003													
20...	1800	E550	30	10.1	8.1	305	16.9	0.83	0.017	2.39	0.119	0.377	106
JUN 17...	1224	E340	30	8.4	7.9	331	22.0	0.55	0.027	2.69	0.130	0.454	113
JUL 15...	1252	E300	30	8.6	8.0	345	21.5	0.88	0.030	2.45	0.148	0.471	111
AUG 19...	1230	E210	30	8.2	8.1	358	24.6	0.33	<0.013	2.49	0.155	0.283	42
SEP 16...	1130	E230	30	10.3	8.3	344	15.5	0.54	<0.013	2.28	0.128	0.260	30
OCT 15...	1215	E260	30	10.7	8.2	354	9.9	0.38	<0.013	2.30	0.127	0.261	19
TREMPEALEAU RIVER BASIN													
05379500 TREMPEALEAU RIVER AT DODGE, WI (LAT 44 07 54N LONG 091 33 10W)													
MAY 2003													
21...	0814	720	30	9.5	7.9	277	14.0	0.80	0.033	1.96	0.132	0.552	104
JUN 17...	1506	445	30	8.3	7.8	308	24.0	0.70	0.028	2.00	0.142	0.504	95
JUL 15...	1444	387	30	8.7	8.0	313	23.9	0.49	0.036	2.00	0.154	0.430	61
AUG 19...	1407	276	30	8.2	8.1	320	26.0	0.33	<0.013	1.99	0.182	0.367	45
SEP 16...	1315	294	30	9.7	8.1	306	18.0	0.44	<0.013	1.90	0.157	0.293	21
OCT 15...	1400	341	30	10.4	8.1	314	11.4	0.51	<0.013	1.68	0.164	0.271	12
BLACK RIVER BASIN													
05381195 VISMALE CREEK NEAR BLACK RIVER FALLS, WI (LAT 44 23 13N LONG 090 45 53W)													
MAY 2003													
20...	0843	6.8	10	11.2	6.6	47	10.3	0.57	0.025	0.160	0.014	0.036	10
JUN 16...	1325	--	10	10.0	7.1	55	16.0	0.23	0.041	0.244	0.020	0.028	6
JUL 14...	1610	--	10	9.9	7.4	62	15.9	0.56	0.014	0.233	0.015	0.020	<2
AUG 18...	1555	0.80	10	9.5	7.5	63	18.4	<0.14	0.014	0.227	0.014	0.021	<2
SEP 15...	1515	0.99	10	12.6	7.7	67	13.3	0.19	<0.013	0.240	0.016	0.021	<2
OCT 14...	1515	0.89	10	9.7	7.6	67	10.8	0.20	<0.013	0.080	0.014	0.021	<2



## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Field turbidity (NTU) 99905 (99905)	Secchi tube (cm) 99910 (99910)
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## CHIPPEWA RIVER BASIN--Continued

05369500 CHIPPEWA RIVER AT DURAND, WI (LAT 44 37 42N LONG 091 58 08W)

MAY 2003 20...	--	80.000
JUN 17...	--	77.000
JUL 15...	26.2	42.000
AUG 19...	--	78.000
SEP 16...	15.0	120.00
OCT 15...	--	96.000

## BUFFALO RIVER BASIN--Continued

05372000 BUFFALO RIVER NEAR TELL, WI (LAT 44 23 30N LONG 091 50 55W)

MAY 2003 20...	--	42.000
JUN 17...	--	27.000
JUL 15...	92.4	22.000
AUG 19...	--	55.000
SEP 16...	22.8	64.000
OCT 15...	--	82.000

## TREMPEALEAU RIVER BASIN--Continued

05379500 TREMPEALEAU RIVER AT DODGE, WI (LAT 44 07 54N LONG 091 33 10W)

MAY 2003 21...	--	27.000
JUN 17...	--	25.000
JUL 15...	42.3	37.000
AUG 19...	--	46.000
SEP 16...	18.3	80.000
OCT 15...	--	94.000

## BLACK RIVER BASIN--Continued

05381195 VISMAL CREEK NEAR BLACK RIVER FALLS, WI (LAT 44 23 13N LONG 090 45 53W)

MAY 2003 20...	--	84.000
JUN 16...	--	120.00
JUL 14...	0.400	120.00
AUG 18...	--	120.00
SEP 15...	0.700	120.00
OCT 14...	--	120.00

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
BLACK RIVER BASIN--Continued													
05381350 LEVIS CREEK AT BLACK RIVER FALLS, WI (LAT 44 18 42N LONG 090 48 23W)													
MAY 2003													
19...	1745	41	10	9.5	6.4	56	15.9	0.64	0.035	0.140	0.009	0.023	7
JUN 16...	1527	--	10	9.2	6.5	73	18.8	0.27	0.031	0.254	0.011	0.031	--
JUL 14...	1400	16	10	9.5	6.8	96	15.8	0.36	0.020	0.439	0.015	0.032	<2
AUG 18...	1406	10	10	10.3	7.6	99	16.2	<0.14	<0.013	0.449	0.009	0.019	<2
SEP 15...	1330	12	10	12.8	7.0	98	12.4	0.16	<0.013	0.424	0.012	0.022	<2
OCT 14...	1345	11	10	10.0	7.3	97	10.6	0.26	<0.013	0.306	0.010	0.014	<2
05382000 BLACK RIVER NEAR GALESVILLE, WI (LAT 44 03 37N LONG 091 17 14W)													
MAY 2003													
21...	1108	3,140	70	9.1	7.3	95	15.2	0.79	0.043	0.450	0.074	0.170	27
JUN 17...	1711	1,480	70	11.0	8.2	106	24.7	0.79	0.019	0.298	0.071	0.156	14
JUL 15...	1652	677	70	11.8	8.8	149	25.8	0.78	<0.013	0.376	0.061	0.154	19
AUG 19...	1538	369	10	11.7	8.8	171	27.7	0.61	<0.013	0.313	0.055	0.146	17
SEP 16...	1445	374	70	12.1	8.5	172	21.8	0.38	0.014	0.730	0.060	0.110	6
OCT 15...	1600	418	70	13.1	8.9	164	12.6	0.36	<0.013	0.457	0.039	0.074	3
LA CROSSE RIVER BASIN--Continued													
05383075 LA CROSSE RIVER NEAR LA CROSSE, WI (LAT 43 51 38N LONG 091 12 36W)													
MAY 2003													
21...	1330	342	30	15.2	9.3	324	16.8	1.3	0.015	0.395	0.014	0.193	79
JUN 17...	1844	316	30	12.4	9.0	299	26.3	1.2	0.023	0.208	0.020	0.196	84
JUL 17...	1915	270	30	9.1	8.7	340	26.8	1.1	0.024	0.340	0.087	0.214	52
AUG 19...	1725	207	30	9.8	8.8	342	28.3	0.98	<0.013	0.192	0.131	0.277	57
SEP 16...	1545	227	30	8.7	8.2	349	21.3	0.59	0.104	0.530	0.088	0.153	29
OCT 15...	1715	270	30	11.1	8.5	353	13.4	0.51	<0.013	0.833	0.054	0.117	18
WISCONSIN RIVER BASIN													
05393705 WISCONSIN R-HISTORIC CHL-@ GRANDFATHER FALLS DAM (LAT 45 18 46N LONG 089 47 07W)													
MAY 2003													
20...	1908	E5700	30	10.4	7.3	60	15.3	0.54	0.027	0.033	0.014	0.038	4
JUN 17...	1530	E1710	30	5.1	7.1	73	23.4	0.41	0.035	0.054	0.018	0.052	4
JUL 15...	1401	E1580	70	9.0	8.0	85	21.9	0.51	0.036	<0.022	0.024	0.055	4
AUG 19...	1330	E1480	70	--	7.8	96	25.1	0.59	0.047	0.033	0.018	0.057	3
SEP 16...	1258	E1250	70	9.5	7.7	98	18.7	0.66	0.033	0.041	0.017	0.051	5
OCT 14...	1301	E1170	70	10.7	8.1	103	12.9	0.67	<0.013	<0.022	0.017	0.058	5

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Field turbidity (NTU) 99905 (99905)	Secchi tube (cm) 99910 (99910)
BLACK RIVER BASIN--Continued		
05381350 LEVIS CREEK AT BLACK RIVER FALLS, WI (LAT 44 18 42N LONG 090 48 23W)		
MAY 2003		
19...	--	105.00
JUN		
16...	--	120.00
JUL		
14...	6.50	120.00
AUG		
18...	--	120.00
SEP		
15...	4.80	120.00
OCT		
14...	--	120.00
05382000 BLACK RIVER NEAR GALESVILLE, WI (LAT 44 03 37N LONG 091 17 14W)		
MAY 2003		
21...	--	47.000
JUN		
17...	--	40.000
JUL		
15...	13.2	59.000
AUG		
19...	--	54.000
SEP		
16...	11.4	120.00
OCT		
15...	--	120.00
LA CROSSE RIVER BASIN--Continued		
05383075 LA CROSSE RIVER NEAR LA CROSSE, WI (LAT 43 51 38N LONG 091 12 36W)		
MAY 2003		
21...	--	23.000
JUN		
17...	--	24.000
JUL		
17...	42.3	36.000
AUG		
19...	--	31.000
SEP		
16...	17.4	66.000
OCT		
15...	--	55.000
WISCONSIN RIVER BASIN--Continued		
05393705 WISCONSIN R-HISTORIC CHL-@ GRANDFATHER FALLS DAM (LAT 45 18 46N LONG 089 47 07W)		
MAY 2003		
20...	--	120.00
JUN		
17...	4.00	100.00
JUL		
15...	--	105.00
AUG		
19...	--	110.00
SEP		
16...	--	95.000
OCT		
14...	--	95.000

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
WISCONSIN RIVER BASIN--Continued													
05401035 DITCH NO.6 S. BRANCH TENMILE CRK NR BANCROFT, WI (LAT 44 16 42N LONG 089 36 23W)													
MAY 2003													
19...	1700	15	10	9.5	8.1	439	13.0	0.22	0.019	11.4	0.019	0.031	8
JUN 16...	1141	15	10	9.7	8.1	439	14.8	0.40	0.047	7.57	0.034	0.052	9
JUL 14...	1329	5.5	10	10.9	8.3	424	19.3	0.57	0.047	7.38	0.066	0.091	5
AUG 20...	1330	0.96	10	10.3	8.5	409	22.5	0.43	0.022	7.14	0.060	0.071	<2
SEP 15...	1246	1.7	10	10.3	8.1	432	14.1	0.44	0.016	6.25	0.051	0.064	<2
OCT 13...	1513	1.9	10	9.4	7.8	428	11.5	0.59	<0.013	7.41	0.040	0.047	<2
05403500 LEMONWEIR RIVER AT NEW LISBON, WI (LAT 43 52 47N LONG 090 09 40W)													
MAY 2003													
19...	1444	E590	30	6.9	7.0	117	17.4	1.3	0.099	0.240	0.058	0.106	6
JUN 16...	1102	E510	30	6.8	7.5	128	21.1	0.84	0.116	0.303	0.072	0.145	--
JUL 14...	1100	E300	30	8.0	7.6	183	21.4	0.69	0.049	0.523	0.057	0.123	9
AUG 18...	1114	E170	30	7.1	7.7	212	23.1	0.48	0.040	0.443	0.053	0.101	3
SEP 15...	1130	E170	30	10.0	7.6	227	17.0	0.74	0.072	0.420	0.081	0.158	27
OCT 14...	1200	E120	30	6.5	7.4	198	12.5	0.60	0.024	0.084	0.067	0.104	2
05404024 WISCONSIN RIVER AT PORTAGE, WI (LAT 43 32 10N LONG 089 28 24W)													
MAY 2003													
19...	0930	E12000	30	9.9	7.6	139	15.4	0.91	0.023	0.559	0.022	0.078	15
JUN 16...	0853	E6500	70	8.0	7.4	142	20.4	0.64	0.071	0.460	0.031	0.060	7
JUL 14...	0848	E3900	30	10.6	8.3	166	22.8	1.1	0.029	0.099	0.015	0.077	10
AUG 20...	1845	E3400	30	10.5	8.8	188	29.0	0.99	0.023	0.079	0.014	0.080	14
SEP 15...	0830	E3090	30	8.1	7.8	197	18.1	0.80	0.021	0.164	0.021	0.066	12
OCT 14...	0822	E2720	30	8.8	7.8	118	13.9	0.91	0.025	0.153	0.014	0.046	8
05405000 BARABOO RIVER NEAR BARABOO, WI (LAT 43 28 51N LONG 089 38 09W)													
MAY 2003													
19...	1007	540	30	8.6	7.9	336	16.0	0.93	0.090	1.19	0.064	0.202	75
JUN 16...	0858	260	30	7.1	8.0	396	19.4	0.55	0.069	1.35	0.077	0.198	67
JUL 14...	0909	279	30	7.6	8.0	368	20.3	0.98	0.032	1.16	0.076	0.224	71
AUG 18...	0842	165	30	6.8	8.2	429	22.5	0.75	<0.013	0.937	0.075	0.205	46
SEP 15...	0900	405	30	9.8	7.9	362	16.9	0.95	0.060	1.13	0.119	0.286	77
OCT 14...	0935	249	30	7.7	7.7	423	12.9	0.58	<0.013	0.984	0.110	0.199	23

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Field turbidity (NTU) 99905 (99905)	Secchi tube (cm) 99910 (99910)
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## WISCONSIN RIVER BASIN--Continued

05401035 DITCH NO.6 S. BRANCH TENMILE CRK NR BANCROFT, WI (LAT 44 16 42N LONG 089 36 23W)

MAY		
2003		
19...	4.90	120.00
JUN		
16...	--	120.00
JUL		
14...	--	101.00
AUG		
20...	1.10	120.00
SEP		
15...	--	120.00
OCT		
13...	--	120.00

05403500 LEMONWEIR RIVER AT NEW LISBON, WI (LAT 43 52 47N LONG 090 09 40W)

MAY		
2003		
19...	--	71.000
JUN		
16...	--	55.000
JUL		
14...	18.8	54.000
AUG		
18...	--	95.000
SEP		
15...	19.1	70.000
OCT		
14...	--	58.000

05404024 WISCONSIN RIVER AT PORTAGE, WI (LAT 43 32 10N LONG 089 28 24W)

MAY		
2003		
19...	13.2	45.000
JUN		
16...	--	97.000
JUL		
14...	--	57.000
AUG		
20...	12.6	56.000
SEP		
15...	--	72.000
OCT		
14...	--	85.000

05405000 BARABOO RIVER NEAR BARABOO, WI (LAT 43 28 51N LONG 089 38 09W)

MAY		
2003		
19...	--	24.000
JUN		
16...	--	20.000
JUL		
14...	69.5	18.000
AUG		
18...	--	20.000
SEP		
15...	83.7	16.000
OCT		
14...	--	38.000

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
WISCONSIN RIVER BASIN--Continued													
05407000 WISCONSIN RIVER AT MUSCODA, WI (LAT 43 11 53N LONG 090 26 36W)													
MAY 2003													
21...	1633	15,400	30	11.3	8.3	186	17.9	1.1	0.024	0.460	0.018	0.082	21
JUN 18...	1119	6,700	30	9.2	8.1	183	25.0	0.72	0.018	0.469	0.020	0.074	13
JUL 18...	1000	6,540	30	8.8	8.2	232	23.7	0.55	0.020	0.447	0.022	0.028	25
AUG 20...	0930	3,310	30	8.8	9.0	253	26.0	1.2	<0.013	<0.034	0.007	0.108	31
SEP 17...	1015	4,700	30	9.8	8.4	277	20.3	1.0	<0.013	0.260	0.011	0.096	19
OCT 16...	1130	4,200	30	11.1	8.5	283	10.6	0.89	<0.013	0.305	0.008	0.054	9
05410490 KICKAPOO RIVER AT STEUBEN, WI (LAT 43 10 58N LONG 090 51 30W)													
MAY 2003													
21...	1839	536	30	9.7	8.2	479	16.9	0.44	0.032	0.861	0.053	0.160	96
JUN 18...	0914	386	30	8.5	8.1	502	20.6	0.37	0.034	1.06	0.066	0.160	81
JUL 18...	0800	380	30	8.8	8.2	500	21.1	0.34	0.020	0.950	0.075	0.163	67
AUG 20...	0805	303	30	7.6	8.2	491	22.5	0.20	<0.013	0.585	0.061	0.109	33
SEP 17...	0800	351	30	9.3	8.2	479	16.4	0.42	<0.013	0.630	0.068	0.131	35
OCT 16...	0930	339	30	10.5	8.2	480	9.4	0.31	<0.013	0.720	0.045	0.079	12
GRANT RIVER BASIN													
05413500 GRANT RIVER AT BURTON, WI (LAT 42 43 13N LONG 090 49 09W)													
MAY 2003													
22...	0848	145	30	--	--	--	--	0.82	0.066	4.69	0.133	0.264	105
JUN 18...	1345	101	30	8.1	8.0	642	23.9	0.46	0.078	2.86	0.140	0.212	54
JUL 18...	1300	98	30	8.9	8.3	669	23.9	0.68	0.032	2.99	0.164	0.220	29
AUG 20...	1241	79	30	8.8	8.2	638	25.3	0.42	<0.013	2.42	0.131	0.166	15
SEP 17...	1300	88	30	9.7	8.2	634	18.5	1.1	<0.013	3.05	0.211	0.249	9
OCT 16...	1400	89	30	15.0	8.5	628	10.0	0.55	<0.013	3.11	0.104	0.125	2
ROCK RIVER BASIN													
05426000 CRAWFISH RIVER AT MILFORD, WI (LAT 43 06 00N LONG 088 50 58W)													
MAY 2003													
20...	2030	696	30	12.6	8.6	674	18.6	2.4	0.036	1.92	0.052	0.263	67
JUN 18...	1603	180	30	--	8.6	667	28.0	3.2	0.049	0.040	0.085	0.490	107
JUL 16...	1433	135	30	12.7	8.8	642	27.9	3.4	0.024	<0.022	0.233	0.694	109
AUG 19...	1130	52	30	5.6	8.5	720	25.1	3.4	0.029	0.216	0.309	0.849	96
SEP 17...	0742	105	30	8.7	8.8	661	18.2	2.2	<0.013	0.100	0.126	0.467	72
OCT 14...	1123	98	30	7.2	8.6	631	14.3	2.5	<0.013	<0.022	0.050	0.503	79

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Field turbidity (NTU) 99905 (99905)	Secchi tube (cm) 99910 (99910)
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## WISCONSIN RIVER BASIN--Continued

05407000 WISCONSIN RIVER AT MUSCODA, WI (LAT 43 11 53N LONG 090 26 36W)

MAY 2003 21...	--	41.000
JUN 18...	--	57.000
JUL 18...	18.7	70.000
AUG 20...	--	34.000
SEP 17...	19.9	54.000
OCT 16...	--	82.000

05410490 KICKAPOO RIVER AT STEUBEN, WI (LAT 43 10 58N LONG 090 51 30W)

MAY 2003 21...	--	30.000
JUN 18...	--	29.000
JUL 18...	49.8	68.000
AUG 20...	--	62.000
SEP 17...	27.2	52.000
OCT 16...	--	84.000

## GRANT RIVER BASIN--Continued

05413500 GRANT RIVER AT BURTON, WI (LAT 42 43 13N LONG 090 49 09W)

MAY 2003 22...	--	20.000
JUN 18...	--	33.000
JUL 18...	28.0	66.000
AUG 20...	--	67.000
SEP 17...	8.80	108.00
OCT 16...	--	120.00

## ROCK RIVER BASIN--Continued

05426000 CRAWFISH RIVER AT MILFORD, WI (LAT 43 06 00N LONG 088 50 58W)

MAY 2003 20...	67.4	36.000
JUN 18...	--	18.000
JUL 16...	--	9.000
AUG 19...	146	12.000
SEP 17...	--	11.000
OCT 14...	--	12.000

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
ROCK RIVER BASIN--Continued													
05426460 BARK RIVER NEAR HEBRON, WI (LAT 42 53 39N LONG 088 42 05W)													
MAY 2003													
21...	1555	E260	30	9.8	8.1	378	17.5	1.4	0.101	2.06	0.056	0.135	34
JUN 18...	1411	E90	30	6.5	8.1	668	24.6	1.4	0.178	0.760	0.105	0.217	64
JUL 16...	1301	E50	30	6.8	7.8	677	23.9	1.9	0.135	5.13	0.087	0.214	53
AUG 18...	1845	E50	30	7.2	8.2	708	26.7	1.1	0.123	0.492	0.094	0.191	30
SEP 16...	1606	E30	70	7.9	8.1	664	20.0	1.5	0.157	2.83	0.078	0.172	52
OCT 15...	1025	E50	30	8.2	8.1	714	10.3	0.73	0.034	0.484	0.053	0.089	10
05427085 ROCK RIVER AT ROBERT STREET AT FORT ATKINSON, WI (LAT 42 55 39N LONG 088 50 34W)													
MAY 2003													
21...	1700	2,430	30	12.6	8.3	673	18.6	2.0	0.047	1.19	0.040	0.218	51
JUN 18...	1306	895	30	7.9	8.4	692	24.8	2.3	0.123	2.67	0.113	0.306	56
JUL 16...	1205	575	30	11.2	8.5	648	25.6	2.4	0.026	1.28	0.099	0.333	48
AUG 19...	0915	132	30	6.1	8.5	711	25.6	2.3	0.022	<0.022	0.094	0.399	52
SEP 16...	1652	336	30	11.3	8.6	725	20.8	2.0	0.195	0.810	0.125	0.315	33
OCT 14...	1346	254	30	8.6	8.6	707	15.6	2.1	0.018	0.190	0.145	0.287	52
05430175 YAHARA RIVER NEAR FULTON, WI (LAT 42 49 35N LONG 089 10 19W)													
MAY 2003													
21...	0700	621	30	9.6	8.3	613	15.3	1.3	0.188	1.38	0.036	0.109	44
JUN 18...	1135	303	30	8.8	8.5	586	25.7	1.4	0.048	0.230	0.060	0.216	52
JUL 16...	1028	209	30	8.9	8.2	910	22.1	2.1	0.139	5.01	0.099	0.305	84
AUG 18...	1115	149	30	10.5	8.4	1,220	22.9	1.4	0.066	6.54	0.119	0.262	39
SEP 17...	1203	144	30	10.8	8.4	669	18.8	1.1	0.025	5.44	0.113	0.204	28
OCT 14...	1528	358	30	11.0	8.5	691	16.2	1.9	0.041	2.53	0.049	0.192	110
05430500 ROCK RIVER AT AFTON, WI (LAT 42 36 33N LONG 089 04 14W)													
MAY 2003													
21...	1100	3,340	30	9.1	8.2	670	17.7	1.6	0.199	1.96	0.051	0.139	32
JUN 18...	1004	1,530	70	8.2	8.5	740	23.6	1.7	0.091	1.10	0.121	0.204	13
JUL 16...	0911	1,010	70	8.2	8.1	748	23.0	2.1	0.357	1.89	0.178	0.305	26
AUG 18...	1445	547	30	16.9	8.8	790	27.1	2.1	0.015	0.033	0.180	0.379	36
SEP 17...	0933	592	30	8.7	8.2	877	17.9	1.8	0.176	4.10	0.171	0.281	16
OCT 15...	0803	796	30	9.0	8.4	846	13.1	1.9	0.025	3.22	0.108	0.241	19



## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Field turbidity (NTU) 99905 (99905)	Secchi tube (cm) 99910 (99910)
ROCK RIVER BASIN--Continued		
05426460 BARK RIVER NEAR HEBRON, WI (LAT 42 53 39N LONG 088 42 05W)		
MAY 2003		
21...	39.2	32.000
JUN		
18...	--	22.000
JUL		
16...	--	17.000
AUG		
18...	41.2	36.000
SEP		
16...	--	15.000
OCT		
15...	--	90.000
05427085 ROCK RIVER AT ROBERT STREET AT FORT ATKINSON, WI (LAT 42 55 39N LONG 088 50 34W)		
MAY 2003		
21...	49.5	20.000
JUN		
18...	--	29.000
JUL		
16...	--	15.000
AUG		
19...	67.0	16.000
SEP		
16...	--	15.000
OCT		
14...	--	16.000
05430175 YAHARA RIVER NEAR FULTON, WI (LAT 42 49 35N LONG 089 10 19W)		
MAY 2003		
21...	27.3	64.000
JUN		
18...	--	36.000
JUL		
16...	--	21.000
AUG		
18...	38.6	55.000
SEP		
17...	--	33.000
OCT		
14...	--	31.000
05430500 ROCK RIVER AT AFTON, WI (LAT 42 36 33N LONG 089 04 14W)		
MAY 2003		
21...	34.0	45.000
JUN		
18...	--	62.000
JUL		
16...	--	25.000
AUG		
18...	40.8	25.000
SEP		
17...	--	34.000
OCT		
15...	--	39.000

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)
ROCK RIVER BASIN--Continued													
05434500 PECATONICA RIVER AT MARTINTOWN, WI (LAT 42 30 34N LONG 089 47 58W)													
MAY 2003													
22...	1203	707	30	--	--	--	--	1.0	0.097	4.95	0.095	0.291	150
JUN 18...	1655	440	30	7.6	8.0	638	22.3	0.81	0.078	4.54	0.109	0.271	146
JUL 18...	1530	359	30	8.0	8.2	659	24.6	0.84	0.030	4.18	0.141	0.267	89
AUG 20...	1530	263	30	10.8	8.4	634	25.9	0.69	<0.013	3.18	0.098	0.201	51
SEP 17...	1615	408	30	8.4	8.1	568	18.8	1.1	0.515	2.83	0.169	0.275	59
OCT 16...	1630	334	30	10.5	8.2	618	11.7	0.80	0.025	3.06	0.077	0.143	33
05436500 SUGAR RIVER NEAR BROADHEAD, WI (LAT 42 36 42N LONG 089 23 53W)													
MAY 2003													
21...	0910	456	30	9.3	8.1	584	16.2	1.1	0.109	5.30	0.087	0.214	65
JUN 18...	0829	212	10	8.2	8.3	619	23.2	0.95	0.023	3.16	0.028	0.156	13
JUL 16...	0751	271	30	8.1	8.4	574	23.5	1.6	0.014	3.33	0.038	0.263	82
AUG 18...	1315	145	30	12.2	8.6	608	27.3	1.0	0.022	0.107	0.056	0.184	34
SEP 17...	1046	241	30	8.9	8.1	567	18.7	1.2	0.084	2.90	0.142	0.235	45
OCT 14...	1712	201	30	9.6	8.2	637	14.5	0.67	<0.013	3.52	0.080	0.158	34
ILLINOIS RIVER BASIN													
05545750 FOX RIVER NEAR NEW MUNSTER, WI (LAT 42 36 39N LONG 088 13 33W)													
MAY 2003													
21...	1340	722	30	10.6	8.2	824	17.7	1.5	0.023	1.53	0.018	0.141	63
JUN 17...	1953	234	10	9.4	8.5	871	26.0	1.2	0.056	0.790	0.014	0.122	28
JUL 15...	1622	482	30	12.8	8.6	770	26.9	2.7	0.019	0.876	0.016	0.265	106
AUG 18...	1700	145	30	12.9	8.7	937	28.1	1.6	0.022	0.644	0.015	0.174	31
SEP 16...	1408	109	30	10.4	8.3	1,010	20.2	1.6	0.170	2.15	0.030	0.160	22
OCT 15...	1218	155	30	9.9	8.4	1,000	12.2	1.4	<0.013	1.05	0.022	0.120	20

## WATER-QUALITY DATA, MAY TO OCTOBER 2003

Date	Field turbidity (NTU) 99905 (99905)	Secchi tube (cm) 99910 (99910)
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## ROCK RIVER BASIN--Continued

05434500 PECATONICA RIVER AT MARTINTOWN, WI (LAT 42 30 34N LONG 089 47 58W)

MAY 2003 22...	--	14.000
JUN 18...	--	14.000
JUL 18...	73.2	38.000
AUG 20...	--	29.000
SEP 17...	51.0	30.000
OCT 16...	--	38.000

05436500 SUGAR RIVER NEAR BRODHEAD, WI (LAT 42 36 42N LONG 089 23 53W)

MAY 2003 21...	77.7	18.000
JUN 18...	--	20.000
JUL 16...	--	12.000
AUG 18...	34.9	36.000
SEP 17...	--	19.000
OCT 14...	--	27.000

## ILLINOIS RIVER BASIN--Continued

05545750 FOX RIVER NEAR NEW MUNSTER, WI (LAT 42 36 39N LONG 088 13 33W)

MAY 2003 21...	70.8	24.000
JUN 17...	--	31.000
JUL 15...	--	11.000
AUG 18...	31.7	28.000
SEP 16...	--	25.000
OCT 15...	--	39.000

## MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

The data were collected to evaluate the effectiveness of PCB contaminated sediment removal from ditches in the upstream reaches of Pine Creek (a tributary of USGS gage 04085395 South Branch Manitowoc River at Hayton).

Date	Time	PCB congenr 193, suspnd sediment, ng/L (00056)	PCB congenr 198, suspnd sediment, ng/L (00058)	PCB congenr 89, suspnd sediment, ng/L (00003)	PCB congenr 83, suspnd sediment (00004)	Temperature, water, deg C (00010)	Residue total at 105 deg. C, suspended, mg/L (00530)	Chloro-phyll a wat unf trichr. method, uncorr, ug/L (32210)	PCB congenr 101, water, fltrd, ng/L (19029)	PCB congenr 118, water, fltrd, ng/L (19040)	PCB congenr 136, water, fltrd, ng/L (19034)	PCB congenr 141, water, fltrd, ng/L (19043)	PCB congenr 146, water, fltrd, ng/L (19041)
435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)													
JUN 2003 23...	1415	<0.01	<0.01	0.01	0.07	24.8	5	1.05	0.40	0.26	0.04	0.02	0.02
435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)													
JUN 2003 23...	1605	0.02	<0.01	0.01	0.13	27.6	<2	4.42	1.8	1.2	0.21	0.09	0.12
435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)													
JUN 2003 23...	1115	<0.01	<0.01	<0.01	0.01	18.2	6	3.00	0.02	0.02	<0.03	<0.01	<0.01
435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)													
JUN 2003 24...	0715	0.08	--	0.04	0.55	19.4	4	2.41	12	8.8	1.2	0.51	0.99
435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)													
JUN 2003 24...	1005	0.20	--	0.18	2.30	22.2	<2	3.41	30	23	3.5	1.6	2.1
435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)													
JUN 2003 24...	1305	0.15	--	--	1.10	28.4	6	2.27	14	8.5	1.6	0.80	0.94
435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)													
JUN 2003 24...	1535	0.07	<0.01	0.02	0.29	25.4	16	2.58	2.1	1.4	0.27	0.13	0.17
040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)													
JUN 2003 25...	0720	0.54	0.06	0.16	2.60	19.8	22	2.75	5.2	3.3	0.64	0.31	0.47

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congenr 149, water, fltrd, ng/L (19039)	PCB congenr 151, water, fltrd, ng/L (19037)	PCB congenr 17, water, fltrd, ng/L (19007)	PCB congenr 174, water, fltrd, ng/L (19050)	PCB congenr 177, water, fltrd, ng/L (19051)	PCB congenr 178, water, fltrd, ng/L (19046)	PCB congenr 18, water, fltrd, ng/L (19006)	PCB congenr 180, water, fltrd, ng/L (19054)	PCB congenr 183, water, fltrd, ng/L (19048)	PCB congenr 185, water, fltrd, ng/L (19049)	PCB congenr 19, water, fltrd, ng/L (19005)	PCB congenr 194, water, fltrd, ng/L (19060)	PCB congenr 199, water, fltrd, ng/L (19055)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)												
JUN 2003 23...	0.11	0.03	<0.03	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)												
JUN 2003 23...	0.50	0.17	0.32	0.04	0.03	<0.01	0.20	0.05	0.02	<0.01	0.06	<0.01	<0.01
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)												
JUN 2003 23...	0.03	<0.01	<0.03	<0.01	<0.03	<0.01	0.10	<0.01	<0.01	<0.03	<0.34	<0.01	<0.01
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	3.4	0.99	0.08	0.23	0.21	0.07	0.07	0.31	0.12	0.02	--	0.01	--
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	9.5	2.4	0.31	0.57	0.41	0.14	0.36	0.82	0.27	0.04	0.06	0.02	--
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)												
JUN 2003 24...	4.2	1.2	0.31	0.36	0.25	0.09	0.32	0.52	0.17	0.02	0.06	0.03	--
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)												
JUN 2003 24...	0.71	0.24	0.59	0.07	0.04	0.02	0.42	0.09	0.03	--	0.10	<0.01	--
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)												
JUN 2003 25...	1.8	0.62	1.0	0.19	0.14	0.07	1.2	0.30	0.10	0.02	0.16	0.03	--

## MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congenr 201, water, fltrd, ng/L (19057)	PCB congenr 206, water, fltrd, ng/L (19061)	PCB congenr 22, water, fltrd, ng/L (19013)	PCB congenr 26, water, fltrd, ng/L (19010)	PCB congenr 33, water, fltrd, ng/L (19012)	PCB congenr 40, water, fltrd, ng/L (19022)	PCB congenr 44, water, fltrd, ng/L (19019)	PCB congenr 45, water, fltrd, ng/L (19014)	PCB congenr 46, water, fltrd, ng/L (19015)	PCB congenr 49, water, fltrd, ng/L (19017)	PCB congenr 52, water, fltrd, ng/L (19016)	PCB congenr 6, water, fltrd, ng/L (19003)	PCB congenr 7, water, fltrd, ng/L (19002)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)												
JUN 2003 23...	<0.02	<0.01	<0.02	<0.01	0.02	0.03	0.28	<0.01	<0.01	0.11	0.52	<0.02	<0.01
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)												
JUN 2003 23...	<0.02	<0.01	0.07	0.44	0.04	0.06	1.4	0.05	0.26	1.7	3.6	<0.02	<0.01
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)												
JUN 2003 23...	<0.02	<0.01	<0.18	<0.01	<0.01	<0.01	0.07	<0.01	<0.01	0.07	0.13	<0.02	<0.01
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	0.03	--	--	0.74	0.05	0.15	4.1	0.07	0.13	4.6	12	--	--
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	0.05	--	0.03	2.1	0.19	0.60	17	0.30	0.41	13	40	0.04	0.02
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)												
JUN 2003 24...	0.07	--	--	1.8	0.15	0.28	7.1	0.19	0.31	5.6	19	0.07	0.03
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)												
JUN 2003 24...	<0.02	--	0.10	1.5	0.11	0.12	2.3	0.09	0.43	2.9	5.5	0.07	<0.03
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)												
JUN 2003 25...	0.08	--	0.18	6.7	0.40	0.29	6.8	0.22	0.87	8.9	17	0.30	0.05

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congenr 74, water, fltrd, ng/L (19023)	PCB congenr 82, water, fltrd, ng/L (19036)	PCB congenr 85, water, fltrd, ng/L (19033)	PCB congenr 87, water, fltrd, ng/L (19032)	PCB congenr 91, water, fltrd, ng/L (19026)	PCB congenr 97, water, fltrd, ng/L (19031)	PCB congenr 99, water, fltrd, ng/L (19030)	PCB congns 132+153, water, fltrd, ng/L (19042)	PCB congns 135+144, water, fltrd, ng/L (19038)	PCB congns 137+176, water, fltrd, ng/L (19044)	PCB congns 138+163, water, fltrd, ng/L (19045)	PCB congns 16 + 32, water, fltrd, ng/L (19009)	PCB congns 170+190, water, fltrd, ng/L (19056)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)												
JUN 2003 23...	0.04	0.06	0.09	0.25	0.07	0.11	0.12	0.24	0.04	<0.01	0.20	<0.04	<0.01
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)												
JUN 2003 23...	0.14	0.18	0.31	0.81	0.46	0.46	0.67	1.0	0.20	<0.01	0.95	0.68	0.04
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)												
JUN 2003 23...	<0.03	<0.01	<0.01	<0.05	<0.07	0.02	0.02	<0.06	<0.01	<0.01	<0.04	<0.02	<0.08
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	0.22	0.80	1.8	4.4	1.8	2.7	4.3	7.7	1.3	--	8.1	0.07	0.25
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	0.82	2.3	4.4	12	4.9	7.1	11	19	3.6	0.02	18	0.54	0.63
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)												
JUN 2003 24...	0.32	1.0	2.1	6.1	2.2	3.1	4.5	8.3	1.5	<0.01	8.2	0.68	0.37
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)												
JUN 2003 24...	0.12	0.21	0.37	0.97	0.63	0.53	0.81	1.3	0.30	--	1.2	1.3	0.06
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)												
JUN 2003 25...	0.29	0.43	0.77	2.0	1.6	1.3	2.0	3.1	0.79	<0.01	2.9	2.6	0.17

## MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congnrs 171+202 water, fltrd, ng/L (19052)	PCB congnrs 172+197 water, fltrd, ng/L (19053)	PCB congnrs 182+187 water, fltrd, ng/L (19047)	PCB congnrs 195+208 water, fltrd, ng/L (19059)	PCB congnrs 196+203 water, fltrd, ng/L (19058)	PCB congnrs 28 + 31 water, fltrd, ng/L (19011)	PCB congnrs 37 + 42 water, fltrd, ng/L (19020)	PCB congnrs 41 + 64 + 71 water, fltrd, ng/L (19021)	PCB congnrs 47 + 48 water, fltrd, ng/L (19018)	PCB congnrs 5 + 8, water, fltrd, ng/L (19004)	PCB congnrs 56 + 60 water, fltrd, ng/L (19027)	PCB congnrs 70 + 76 water, fltrd, ng/L (19024)	PCB congnrs 77+110 water, fltrd, ng/L (19035)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)												
JUN 2003 23...	<0.01	<0.01	<0.01	<0.01	<0.03	0.04	0.04	0.10	0.03	<0.05	0.06	0.19	0.57
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)												
JUN 2003 23...	0.01	<0.01	0.04	<0.01	<0.03	1.0	0.57	0.72	1.0	<0.05	0.17	0.76	2.5
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)												
JUN 2003 23...	<0.01	<0.01	<0.02	<0.01	<0.07	<0.04	<0.02	<0.02	<0.02	<0.05	0.02	<0.03	0.07
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	0.06	0.05	0.21	--	0.03	0.28	1.1	1.2	1.3	--	0.33	3.4	15
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	0.10	0.16	0.41	0.01	0.06	0.92	2.8	4.2	3.3	--	1.3	12	39
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)												
JUN 2003 24...	0.07	0.10	0.28	0.01	0.07	0.90	1.3	1.9	1.6	--	0.61	4.5	17
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)												
JUN 2003 24...	0.01	0.02	0.06	--	<0.03	1.5	0.91	1.1	1.6	<0.07	0.20	1.0	3.1
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)												
JUN 2003 25...	0.04	0.04	0.20	0.01	0.07	3.0	2.4	3.0	3.5	0.11	0.52	2.4	8.3



MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congenrs 84 + 92 water, fltrd, ng/L (19028)	PCB congenr 101, suspnd ng/L (19092)	PCB congenr 118, suspnd ng/L (19103)	PCB congenr 136, suspnd ng/L (19097)	PCB congenr 141, suspnd ng/L (19106)	PCB congenr 146, suspnd ng/L (19104)	PCB congenr 149, suspnd ng/L (19102)	PCB congenr 151, suspnd ng/L (19100)	PCB congenr 17, suspnd ng/L (19070)	PCB congenr 174, suspnd ng/L (19113)	PCB congenr 177, suspnd ng/L (19114)	PCB congenr 178, suspnd ng/L (19109)	PCB congenr 18, suspnd ng/L (19069)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)												
JUN 2003 23...	0.51	0.91	0.79	0.12	0.15	0.14	0.46	0.12	<0.03	0.12	0.08	0.03	<0.01
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)												
JUN 2003 23...	2.4	1.4	1.2	0.22	0.18	0.23	0.69	0.21	<0.03	0.16	0.11	0.04	<0.01
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)												
JUN 2003 23...	<0.02	0.22	0.15	<0.03	0.03	0.04	0.10	0.03	<0.03	0.03	0.02	0.01	<0.01
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	10	7.6	6.7	1.1	0.65	1.2	3.7	0.94	--	0.48	0.42	0.14	--
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	34	31	26	5.1	2.9	3.9	13	3.5	--	1.7	1.2	0.41	--
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)												
JUN 2003 24...	15	15	13	2.3	1.8	2.2	6.9	2.0	--	1.2	0.88	0.33	0.04
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)												
JUN 2003 24...	3.2	2.7	2.6	0.54	0.44	0.56	1.6	0.51	0.04	0.42	0.31	0.14	0.03
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)												
JUN 2003 25...	8.8	17	17	3.9	3.0	4.3	14	3.9	0.24	3.2	2.6	1.2	0.28

## MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congenr 180, suspnd sedimnt ng/L (19117)	PCB congenr 183, suspnd sedimnt ng/L (19111)	PCB congenr 185, suspnd sedimnt ng/L (19112)	PCB congenr 19, suspnd sedimnt ng/L (19068)	PCB congenr 194, suspnd sedimnt ng/L (19123)	PCB congenr 199, suspnd sedimnt ng/L (19118)	PCB congenr 201, suspnd sedimnt ng/L (19120)	PCB congenr 206, suspnd sedimnt ng/L (19124)	PCB congenr 22, suspnd sedimnt ng/L (19076)	PCB congenr 26, suspnd sedimnt ng/L (19073)	PCB congenr 33, suspnd sedimnt ng/L (19075)	PCB congenr 40, suspnd sedimnt ng/L (19085)	PCB congenr 44, suspnd sedimnt ng/L (19082)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)												
JUN 2003 23...	0.24	0.07	0.01	<0.01	0.04	<0.01	0.07	0.01	<0.02	<0.01	<0.01	0.01	0.16
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)												
JUN 2003 23...	0.31	0.08	0.01	<0.01	0.05	<0.01	0.09	0.02	<0.02	0.04	<0.01	<0.01	0.29
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)												
JUN 2003 23...	0.04	0.02	<0.01	<0.01	0.02	<0.01	0.03	<0.01	<0.02	<0.01	<0.01	<0.01	0.06
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	0.79	0.27	0.04	--	0.07	<0.01	0.12	0.03	--	0.10	--	0.03	1.1
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	3.1	0.90	0.13	--	0.21	0.02	0.32	0.06	--	0.42	--	0.19	5.6
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)												
JUN 2003 24...	2.3	0.64	0.10	--	0.28	0.03	0.48	0.08	--	0.42	0.11	0.13	2.7
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)												
JUN 2003 24...	0.82	0.22	0.04	--	0.16	0.02	0.28	0.05	--	0.25	0.02	0.02	0.78
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)												
JUN 2003 25...	6.5	1.7	0.30	--	1.5	0.19	2.5	0.46	--	3.6	0.23	0.17	6.7

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congenr 45, suspnd sedimnt ng/L (19077)	PCB congenr 46, suspnd sedimnt ng/L (19078)	PCB congenr 49, suspnd sedimnt ng/L (19080)	PCB congenr 52, suspnd sedimnt ng/L (19079)	PCB congenr 6, suspnd sedimnt ng/L (19066)	PCB congenr 7, suspnd sedimnt ng/L (19065)	PCB congenr 74, suspnd sedimnt ng/L (19086)	PCB congenr 82, suspnd sedimnt ng/L (19099)	PCB congenr 85, suspnd sedimnt ng/L (19096)	PCB congenr 87, suspnd sedimnt ng/L (19095)	PCB congenr 91, suspnd sedimnt ng/L (19089)	PCB congenr 97, suspnd sedimnt ng/L (19094)	PCB congenr 99, suspnd sedimnt ng/L (19093)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)												
JUN 2003 23...	<0.01	<0.01	0.08	0.34	<0.02	<0.01	0.06	0.10	0.21	0.52	0.11	0.23	0.32
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)												
JUN 2003 23...	<0.01	0.04	0.46	0.78	<0.02	<0.01	0.06	0.12	0.27	0.61	0.27	0.33	0.57
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)												
JUN 2003 23...	<0.01	<0.01	0.08	0.18	<0.02	<0.01	0.01	0.01	0.04	0.09	0.03	0.04	0.08
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	--	0.02	1.3	3.0	--	--	0.10	0.32	1.3	2.8	0.95	1.7	3.1
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	0.07	0.10	5.0	16	--	--	0.49	1.9	5.0	12	4.5	7.0	12
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)												
JUN 2003 24...	--	0.06	2.6	7.4	--	0.04	0.24	1.1	2.6	6.4	2.0	3.3	5.4
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)												
JUN 2003 24...	0.01	0.09	1.2	2.0	--	--	0.08	0.24	0.56	1.2	0.61	0.65	1.2
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)												
JUN 2003 25...	0.12	0.55	10	16	--	--	0.56	1.5	3.4	7.5	4.4	4.5	8.3

## MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congnrs 132+153 suspnd sedimnt ng/L (19105)	PCB congnrs 135+144 suspnd sedimnt ng/L (19101)	PCB congnrs 137+176 suspnd sedimnt ng/L (19107)	PCB congnrs 138+163 suspnd sedimnt ng/L (19108)	PCB congnrs 16 + 32 suspnd sedimnt ng/L (19072)	PCB congnrs 170+190 suspnd sedimnt ng/L (19119)	PCB congnrs 171+202 suspnd sedimnt ng/L (19115)	PCB congnrs 172+197 suspnd sedimnt ng/L (19116)	PCB congnrs 182+187 suspnd sedimnt ng/L (19110)	PCB congnrs 195+208 suspnd sedimnt ng/L (19122)	PCB congnrs 196+203 suspnd sedimnt ng/L (19121)	PCB congnrs 24 + 27 suspnd sedimnt ng/L (19071)	PCB congnrs 24 + 27 water, fltrd, ng/L (19008)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)												
JUN 2003 23...	1.1	0.17	<0.01	1.3	<0.02	0.15	0.03	0.04	0.08	0.02	0.08	<0.01	0.01
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)												
JUN 2003 23...	1.6	0.26	<0.01	1.8	<0.02	0.21	0.04	0.05	0.12	0.02	0.10	<0.01	0.02
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)												
JUN 2003 23...	0.22	0.04	<0.01	0.25	<0.02	0.03	0.02	<0.01	0.03	<0.01	<0.03	<0.01	<0.01
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	7.9	1.3	0.02	9.5	--	0.68	0.13	0.15	0.41	0.04	0.15	--	--
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	29	4.8	0.06	31	--	2.4	0.37	0.58	1.2	0.10	0.37	--	0.04
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)												
JUN 2003 24...	16	2.6	0.04	18	--	1.6	0.27	0.41	0.96	0.13	0.54	--	0.03
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)												
JUN 2003 24...	3.6	0.65	0.02	4.1	0.06	0.51	0.10	0.13	0.38	0.07	0.32	--	<0.04
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)												
JUN 2003 25...	26	5.4	0.16	28	0.66	3.9	0.77	1.0	3.2	0.60	2.7	--	0.07

## MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congnrs 28 + 31 suspnd sedimnt ng/L (19074)	PCB congnrs 37 + 42 suspnd sedimnt ng/L (19083)	PCB congnrs 41 + 64 + 71 suspnd sedimnt ng/L (19084)	PCB congnrs 47 + 48 suspnd sedimnt ng/L (19081)	PCB congnrs 5 + 8, suspnd sedimnt ng/L (19067)	PCB congnrs 56 + 60 suspnd sedimnt ng/L (19090)	PCB congnrs 70 + 76 suspnd sedimnt ng/L (19087)	PCB congnrs 77+110 suspnd sedimnt ng/L (19098)	PCB congnrs 84 + 92 suspnd sedimnt ng/L (19091)	PCB congnr 66, suspnd sediment, ng/L (00001)	PCB congnr 95, suspnd sediment, ng/L (00002)	PCB congnr 158, suspnd sediment, ng/L (00005)	PCB congnr 207, suspnd sediment, ng/L (00008)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)												
JUN 2003 23...	<0.04	0.02	0.07	0.02	<0.05	0.06	0.22	1.2	0.81	0.11	0.78	0.15	<0.0070
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)												
JUN 2003 23...	0.12	0.15	0.19	0.32	<0.05	0.07	0.31	1.9	1.4	0.33	1.20	0.20	<0.0070
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)												
JUN 2003 23...	<0.04	0.02	<0.02	0.03	<0.05	<0.02	0.05	0.27	0.17	0.04	0.16	0.02	<0.0070
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	<0.04	0.32	0.33	0.45	--	0.12	1.5	9.4	6.3	1.10	6.10	0.99	--
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	0.19	1.2	1.8	1.6	--	0.69	6.9	39	29	4.30	30.0	3.40	--
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)												
JUN 2003 24...	0.30	0.63	0.98	0.92	--	0.43	3.2	19	13	2.00	14.0	1.90	--
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)												
JUN 2003 24...	0.26	0.37	0.47	0.76	--	0.14	0.79	4.0	3.2	0.69	2.70	0.44	<0.0070
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)												
JUN 2003 25...	1.8	2.9	3.5	4.8	--	1.0	4.9	32	26	4.90	21.0	2.90	0.0

## MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congns 3 water fltrd (99901)	PCB congns 4/10 water fltrd (99902)	PCB congns 25 water fltrd (99903)	PCB congns 53 water fltrd (99904)	PCB congns 51 water fltrd (99905)	PCB congns 63 water fltrd (99906)	PCB congns 66 water fltrd (99907)	PCB congns 95 water fltrd (99908)	PCB congns 898 water fltrd (99909)	PCB congns 83 water fltrd (99910)	PCB congns 158 water fltrd (99911)	PCB congns 193 water fltrd (99912)	PCB congns 198 water fltrd (99913)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)												
JUN 2003 23...	<0.43	<0.05	<0.01	0.02	<0.007	<0.025	0.088	0.590	0.007	0.030	0.025	<0.015	<0.015
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)												
JUN 2003 23...	<0.43	<0.05	0.28	0.62	0.290	0.054	0.840	2.70	0.016	0.180	0.110	<0.015	<0.015
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)												
JUN 2003 23...	<0.43	<0.05	<0.02	<0.01	<0.007	<0.025	<0.023	0.058	<0.014	<0.009	<0.015	<0.015	<0.015
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	--	--	0.36	0.39	0.085	0.061	2.50	14.0	0.063	0.890	0.890	0.027	--
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)												
JUN 2003 24...	--	--	0.99	1.1	0.260	0.190	7.60	43.0	0.230	2.400	2.100	0.057	--
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)												
JUN 2003 24...	--	--	0.78	0.86	0.290	0.085	2.50	19.0	0.093	1.000	0.980	0.045	--
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)												
JUN 2003 24...	--	--	0.78	1.0	0.560	0.089	0.900	3.50	0.022	0.250	0.150	--	--
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)												
JUN 2003 25...	--	--	2.9	2.2	1.00	0.250	2.20	9.20	0.054	0.710	0.380	0.023	--

## MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	PCB congenr 207, water fltrd, ng/L (99914)	PCB congenrs 3 suspnd sediment (99915)	PCB congenrs 4/10 suspnd sediment (99916)	PCB congenrs 25 suspnd sediment (99917)	PCB congenrs 53 suspnd sediment (99918)	PCB congenrs 51 suspnd sediment (99919)	PCB congenr 63 suspnd sediment (99920)	PCB congenrs 128 water fltrd (99922)	PCB congenrs 167 water fltrd (99923)	PCB congenrs 128 suspnd sediment (99924)	PCB congenr 167, suspnd sediment ng/L (99925)
	435720088050801 HARP PCB SITE A AT NEW HOLSTEIN, WI (LAT 43 57 20N LONG 088 05 08W)										
JUN 2003 23...	<0.007	<0.430	<0.050	<0.012	<0.008	<0.007	<0.025	0.040	<0.012	0.250	0.057
	435725088045602 HARP PCB SITE B AT NEW HOLSTEIN, WI (LAT 43 57 25N LONG 088 04 56W)										
JUN 2003 23...	<0.007	<0.430	<0.050	0.038	0.094	0.051	<0.025	0.170	0.036	0.350	0.084
	435717088044403 HARP PCB SITE C AT NEW HOLSTEIN, WI (LAT 43 57 17N LONG 088 04 44W)										
JUN 2003 23...	<0.007	<0.430	<0.050	<0.012	<0.008	<0.007	<0.025	<0.009	<0.012	0.041	<0.012
	435734088045604 HARP PCB SITE D AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)										
JUN 2003 24...	--	--	--	0.028	0.074	0.010	<0.025	1.300	0.300	1.800	0.440
	435734088045605 HARP PCB SITE E AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 56W)										
JUN 2003 24...	--	--	--	0.180	0.310	0.070	0.100	2.900	0.700	5.600	1.500
	435734088044606 HARP PCB SITE F AT NEW HOLSTEIN, WI (LAT 43 57 34N LONG 088 04 46W)										
JUN 2003 24...	--	--	--	0.200	0.300	0.091	0.068	1.400	0.290	3.200	0.830
	435739088044507 HARP PCB SITE G AT NEW HOLSTEIN, WI (LAT 43 57 39N LONG 088 04 45W)										
JUN 2003 24...	--	--	--	0.160	0.220	0.150	0.052	0.200	0.039	0.750	0.180
	040853926 PINE CREEK AT MEGGERS ROAD NEAR NEW HOLSTEIN, WI (LAT 43 58 18N LONG 088 03 54W)										
JUN 2003 25...	--	--	--	1.900	1.400	0.800	0.430	0.440	0.090	5.100	1.200

## WATER-QUALITY ANALYSES AT MISCELLANEOUS SITES

## 430515089300601 STONEFIELD INFILTRATION POND AT MIDDLETON, WI

Samples with a medium code of 6 are samples taken from the water table below the Stonefield Infiltration Basin; samples collected from monitoring well ST-Deep with 6-inch screen about 34 ft below ground level. Samples with a medium code of 9 are samples of ponded stormwater runoff collected from the Stonefield Infiltration Basin, a dry basin that fills with stormwater runoff during precipitation events. Samples with a medium code of F are samples taken from the vadose zone below the Stonefield Infiltration Basin; samples collected from suction lysimeter ST-19 with porous cup about 19 ft below ground level.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Medium code	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, fltrd, mg/L (00925)	Magnesium, water, unfltrd recover -able, mg/L (00921)	Potassium, water, fltrd, mg/L (00935)	Potassium, water, unfltrd recover -able, mg/L (00939)	Sodium, water, mg/L (00930)	Sodium, water, unfltrd recover -able, mg/L (00923)	ANC, wat unfltrd end pt, lab, mg/L as CaCO <sub>3</sub> (00417)
APR 2003													
07...	1350	6	7.4	856	89.6	144	44.0	77	--	--	23.6	26	418
11...	1115	6	7.3	858	90.4	266	44.3	140	--	--	23.2	27	398
18...	0830	6	--	--	89.7	139	45.3	73	--	--	22.4	24	--
18...	0845	6	7.4	889	--	--	--	--	--	--	--	--	387
19...	1635	6	7.6	892	80.9	116	40.3	60	--	--	22.1	25	389
25...	1015	6	7.3	887	--	--	--	--	--	--	--	--	397
25...	1025	6	--	--	88.3	215	44.2	120	--	--	26.6	28	--
30...	2030	6	7.5	819	79.2	101	38.7	53	--	--	23.2	26	378
MAY													
02...	1000	6	7.5	831	--	--	--	--	--	--	--	--	402
02...	1010	6	--	--	78.6	93.1	38.5	48	--	--	25.1	28	--
05...	1420	6	7.5	804	78.0	126	38.1	68	--	--	23.9	29	363
09...	0930	6	7.5	794	78.6	124	38.4	66	--	--	23.7	29	374
16...	1000	6	7.5	1,320	112	148	55.8	75	--	--	38.3	44	357
23...	0910	6	7.5	1,060	89.3	135	43.6	68	--	--	41.6	48	379
30...	1110	6	7.5	1,070	98.4	116	48.8	58	--	--	57.3	59	378
JUN													
06...	1302	6	7.8	1,060	94.2	101	46.3	50	5.00	6.0	51.2	57	373
13...	0735	6	7.5	1,150	99.4	124	49.1	63	4.00	6.0	59.8	65	432
15...	1408	6	--	--	--	--	--	--	--	--	--	--	--
15...	1528	6	7.6	1,230	100	110	49.0	51	5.00	5.0	60.9	64	357
15...	1606	6	--	--	--	--	--	--	--	--	--	--	--
20...	1328	6	7.5	1,290	114	120	54.7	58	5.00	6.0	58.6	62	367
21...	1950	6	7.5	1,310	115	127	56.5	61	6.00	6.0	61.6	66	358
22...	1900	6	7.6	1,330	116	123	55.6	58	5.00	6.0	60.5	65	357
23...	1930	6	7.5	1,330	116	124	55.8	59	6.00	6.0	62.1	67	355
24...	1600	6	7.4	1,340	116	125	56.4	59	6.00	6.0	65.5	67	354
25...	1615	6	7.6	1,360	109	123	52.3	59	6.00	7.0	60.9	70	355
26...	1325	6	7.5	1,350	118	132	57.5	62	6.00	7.0	68.5	70	357
27...	0845	6	7.6	1,360	117	130	57.1	62	6.00	6.0	69.9	75	357
JUL													
04...	1817	6	7.5	1,390	118	137	56.9	66	--	--	72.8	75	353
11...	1705	6	7.5	1,430	120	143	57.7	69	--	--	75.1	77	354
18...	1124	6	7.6	1,430	126	170	60.0	78	--	--	76.6	74	357
25...	1033	6	8.1	1,380	93.1	--	35.2	--	--	--	125	--	395
25...	1057	6	7.5	1,320	101	120	47.5	54	--	--	68.5	74	363
AUG													
01...	0920	6	7.5	1,280	109	118	51.2	54	--	--	83.7	80	382
08...	0925	6	7.2	1,320	106	147	52.2	72	--	--	78.5	92	389
15...	1150	6	7.3	1,320	108	121	53.0	59	--	--	83.7	89	393
22...	0905	6	7.3	1,310	101	115	49.4	55	--	--	75.6	88	385
29...	1145	6	7.5	1,330	104	112	51.1	55	--	--	89.5	89	393
SEP													
05...	1305	6	7.6	1,300	102	113	49.9	56	--	--	93.8	98	399
12...	1445	6	7.7	1,260	96.6	106	45.3	52	--	--	89.1	98	397
19...	1120	6	7.7	1,270	92.0	106	43.6	53	--	--	95.6	100	423
MAR													
14...	1715	9	7.0	716	--	10.8	--	4.8	--	--	--	100	42
14...	1720	9	--	--	--	--	--	--	--	--	--	--	--
28...	0947	9	7.5	121	--	6.0	--	1.5	--	--	--	12	25
28...	1015	9	7.4	840	--	138	--	72	--	--	--	25	423
APR													
18...	0735	9	8.2	1,120	51.6	52.5	24.3	24	--	--	142	140	251
19...	1503	9	7.0	558	9.90	14.5	2.10	4.8	--	--	82.9	84	33
19...	1533	9	7.2	299	9.30	10.4	3.40	4.1	--	--	39.5	41	34
19...	1603	9	7.3	176	5.50	6.4	1.80	2.2	--	--	17.8	18	28
30...	1250	9	--	--	--	--	--	--	--	--	--	--	--
30...	1255	9	--	--	3.50	3.7	0.70	0.80	--	--	3.70	4.0	--
MAY													
05...	0853	9	7.5	98	8.40	8.9	2.40	2.6	--	--	6.00	6.4	34
09...	0840	9	7.6	159	15.3	16.2	5.30	5.6	--	--	8.60	9.5	66
10...	2053	9	6.9	218	18.1	20.1	6.00	6.6	--	--	13.8	15	58









## 430515089300601 STONEFIELD INFILTRATION POND AT MIDDLETON, WI--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Medium code	pH, water, unfltrd lab, std units (00403)	Specif. conduc-tance, wat unfltrd lab, uS/cm 25 degC (90095)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recover-able, mg/L (00916)	Magnesium, water, fltrd, mg/L (00925)	Magnesium, water, unfltrd recover-able, mg/L (00921)	Potas-sium, water, fltrd, mg/L (00935)	Potas-sium, water, unfltrd recover-able, mg/L (00939)	Sodium, water, fltrd, mg/L (00930)	Sodium, water, unfltrd recover-able, mg/L (00923)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (00417)
JUN 2003													
06...	1915	9	7.4	202	16.6	17.2	4.80	5.2	4.00	5.0	10.0	12	59
06...	1916	9	7.3	195	16.3	16.7	4.80	5.1	4.00	4.0	10.1	12	57
24...	0719	9	6.7	76	6.00	6.7	1.60	1.8	3.00	3.0	1.80	1.6	21
24...	0721	9	7.0	356	28.2	31.9	9.00	10	12.0	14.0	16.0	18	113
24...	0751	9	6.8	79	6.20	6.6	2.10	2.1	5.00	6.0	2.60	2.6	23
24...	0821	9	6.9	139	9.20	11.1	3.30	4.0	9.00	11.0	4.80	5.7	41
25...	1540	9	6.8	128	8.00	9.1	2.60	3.0	6.00	7.0	5.10	5.7	38
25...	1610	9	6.9	109	6.90	7.9	2.30	2.6	6.00	7.0	4.00	4.4	32
SEP													
12...	1405	9	7.1	312	18.2	19.9	9.40	10	--	--	8.50	9.4	76
12...	1440	9	6.9	86	6.80	6.1	3.00	2.7	--	--	2.70	2.7	25
12...	1520	9	7.1	62	4.50	4.8	1.70	2.1	--	--	1.60	1.7	20
14...	1023	9	7.4	66	6.50	6.5	2.40	2.5	--	--	1.80	1.5	26
MAR													
28...	0953	F	8.2	1,800	--	--	--	--	--	--	--	--	469
APR													
01...	1538	F	8.1	1,560	--	--	--	--	--	--	--	--	476
01...	1655	F	7.7	855	--	96.0	--	48	--	--	--	23	346
01...	1713	F	--	--	--	--	--	--	--	--	--	--	--
02...	1025	F	--	--	--	100	--	42	--	--	--	190	--
07...	1321	F	--	--	--	--	--	--	--	--	--	--	--
25...	1100	F	--	--	116	--	50.4	--	--	--	49.9	--	--
30...	2000	F	--	--	79.7	--	36.0	--	--	--	27.0	--	--
30...	2003	F	--	--	98.8	--	42.7	--	--	--	51.1	--	--
MAY													
02...	0915	F	--	--	66.0	--	30.1	--	--	--	23.3	--	--
09...	0850	F	7.5	1,770	143	--	62.7	--	--	--	76.3	--	325
16...	0925	F	7.5	2,100	123	--	54.4	--	--	--	123	--	348
23...	0846	F	7.5	1,820	112	--	48.9	--	--	--	135	--	372
30...	1043	F	7.6	2,190	138	--	59.6	--	--	--	144	--	346
JUN													
06...	1234	F	7.9	2,360	174	177	74.4	77	7.00	8.0	178	180	355
23...	1909	F	7.8	1,430	93.9	101	38.0	40	6.00	6.0	150	160	384
24...	1535	F	--	--	94.5	98.0	37.7	39	5.00	6.0	148	160	--
25...	1544	F	--	--	86.2	97.8	34.1	39	5.00	6.0	142	150	--
26...	1255	F	8.1	1,410	89.4	96.7	35.1	37	5.00	5.0	147	160	398
27...	0820	F	7.8	1,390	91.3	96.0	35.9	38	6.00	6.0	149	160	398
JUL													
11...	1644	F	7.6	1,410	89.2	--	34.8	--	--	--	159	--	392
18...	1135	F	7.9	1,250	87.0	--	32.9	--	--	--	128	--	403
AUG													
01...	0855	F	7.7	1,480	105	--	40.6	--	--	--	138	--	401
29...	1113	F	7.9	1,100	67.7	74.9	27.2	30	--	--	125	140	458
SEP													
05...	1247	F	8.2	1,060	61.6	72.6	24.2	29	--	--	111	130	453
12...	1420	F	8.0	1,040	66.2	--	25.1	--	--	--	115	--	460
19...	1027	F	7.9	1,000	66.4	--	25.1	--	--	--	100	--	443





430515089300601 STONEFIELD INFILTRATION POND AT MIDDLETON, WI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chrys- ene, water, unfltrd ug/L (34320)	Di- benzo- [a,h]- anthra- cene, wat unfl ug/L (34556)	Fluor- anthene water unfltrd ug/L (34376)	Indeno- [1,2,- 3-cd]- pyrene, water, unfltrd ug/L (34403)	Phenan- threne, water, unfltrd ug/L (34461)	Pyrene, water, unfltrd ug/L (34469)	Naphth- alene, water, unfltrd ug/L (34696)
JUN 2003							
06...	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--
SEP							
12...	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--
MAR							
28...	--	--	--	--	--	--	--
APR							
01...	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--
01...	<0.027	<0.038	<0.080	<0.12	<0.040	<0.070	<0.038
02...	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--
MAY							
02...	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--
JUN							
06...	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
JUL							
11...	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--
AUG							
01...	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--
SEP							
05...	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--

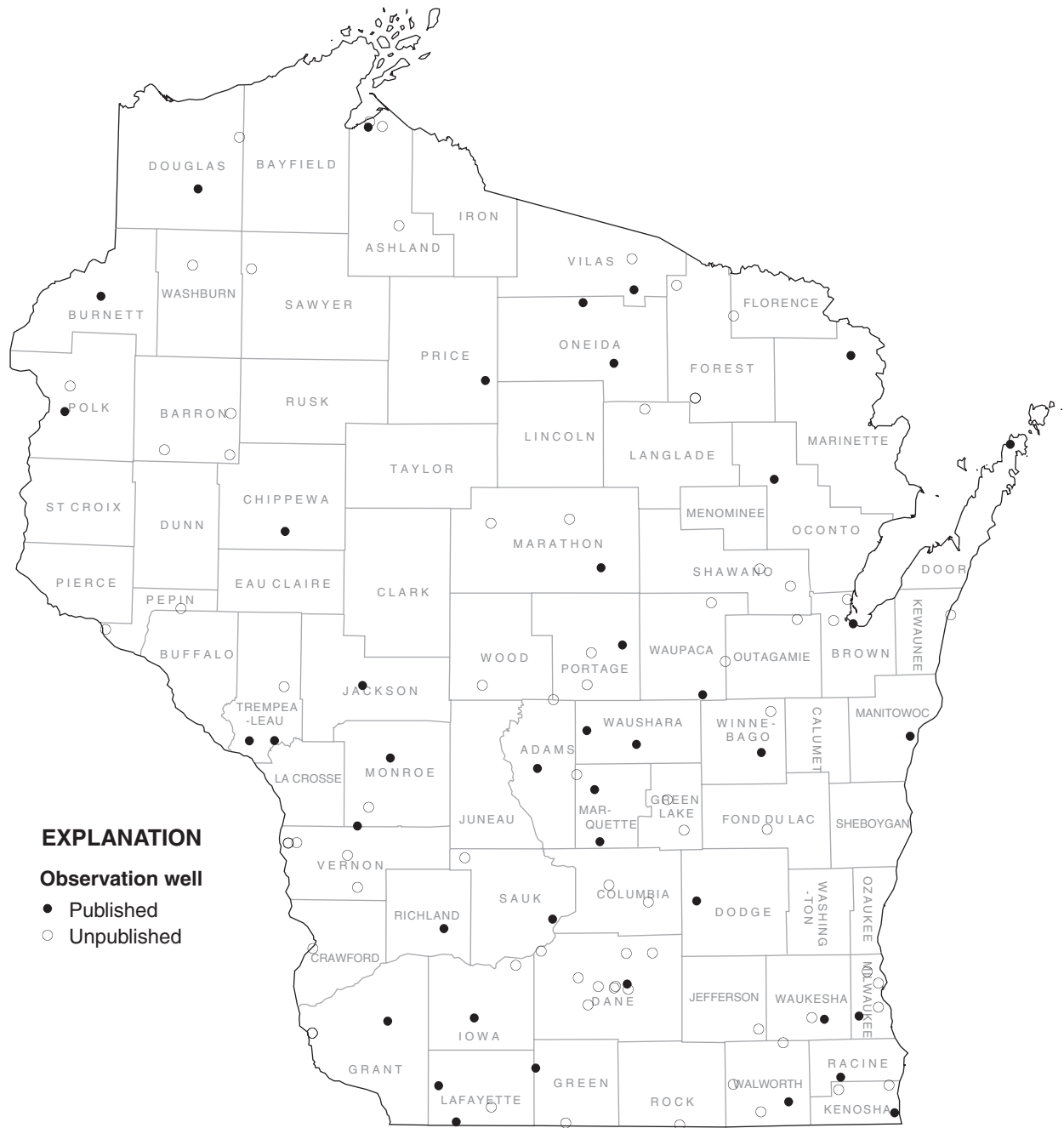


Figure 5. Location of observation wells in Wisconsin.



GROUND-WATER RECORDS

Listed below are the wells for which water-level data are available, in addition to those published in this report, which can be accessed from the web site: <http://water-use.gov>.

COUNTY	LOCAL WELL NUMBER	LATITUDE/LONGITUDE
Ashland	AS-0054	461109090373001
Ashland	AS-0349	463527090434201
Ashland	AS-0380	463635090481101
Brown	BN-0013	443325088071301
Brown	BN-0890	443833088021801
Barron	BR-0046	451514091582101
Barron	BR-0153	452430091353201
Columbia	CO-0134	432504089114801
Columbia	CO-0620	432921089245901
Crawford	CR-0059	431332091043401
Dane	DN-0005	430429089230301
Dane	DN-0064	430427089284901
Dane	DN-0083	431312089475301
Dane	DN-0146	430343089184701
Dane	DN-0441	431231089192101
Dane	DN-0927	435629089353901
Dane	DN-1136	430638089353101
Dane	DN-1289	425958089321601
Dane	DN-1297	430406089232901
Dane	DN-1355	431233089103201
Douglas	DS-0001	463217091342801
Florence	FC-0004	454836088394901
Fond du Lac	FL-0659	434231088311801
Forest	FR-0087	455620088593901
Forest	FR-0866	452836088534001
Forest	FR-0867	452837088534001
Forest	FR-0868	452836088533801
Green Lake	GL-0032	434238088592501
Green Lake	GL-0047	435011089045701
Green	GN-0074	423059089395201
Grant	GR-0029	425246091042101
Grant	GR-0132	425246091042102
Grant	GR-0133	425246091042103
Grant	GR-0134	425246091042104

COUNTY	LOCAL WELL NUMBER	LATITUDE/LONGITUDE
Iowa	IW-0110	430943089562601
Jefferson	JE-0849	425332088352201
Kenosha	KE-0006	423907087521701
Kenosha	KE-0021	423819088090301
Kewaunee	KW-0030	443400087270001
Langlade	LA-0537	452603089111601
Lafayette	LF-0294	423455090043301
Milwaukee	ML-0118	430706087583601
Milwaukee	ML-0120	430412087545801
Monroe	MO-0010	434823090461401
Marathon	MR-0027	445814090045501
Marathon	MR-0100	445913089374501
Outagamie	OU-0416	443353088194201
Polk	PK-0040	453013092314601
Pepin	PP-0039	443046092170401
Pepin	PP-0040	443624091512401
Portage	PT-0036	441833089315601
Portage	PT-0059	441454089432801
Portage	PT-0276	442810089194501
Portage	PT-0376	442623089302701
Rock	RO-0040	423019089020401
Shawano	SH-0027	444627088321401
Shawano	SH-0225	444204088214701
Sauk	SK-0230	433605090133701
Sawyer	SW-0007	460005091291801
Trempealeau	TR-0071	441743091153101
Vernon	VE-0008	433928091102501
Vernon	VE-0052	432842090494401
Vernon	VE-0071	433630090531601
Vernon	VE-0117	433921091132101
Vernon	VE-0271	433921091132102
Vernon	VE-0272	433921091132103
Vilas	VI-0003	460258089151901
Walworth	WW-0009	424004088440601
Walworth	WW-0083	423315088350301
Walworth	WW-0908	425006088271501

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COUNTY	LOCAL WELL NUMBER	LATITUDE/LONGITUDE
Washburn	WB-0048	460039091500101
Wood	WD-0066	441827090075001
Waukesha	WK-1301	425607088173001
Waupaca	WP-0013	442353088443801
Waupaca	WP-0771	443821088490801
Waushara	WS-0105	440345089151701

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## GROUND-WATER LEVELS

531

## ADAMS COUNTY

435759089490001. Local number, AD-17/06E/08-0076.

LOCATION.--Lat 43°57'59", long 89°49'00", Hydrologic Unit 07070003. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in., depth 21 ft, cased to 19 ft, well point 19-21 ft.

INSTRUMENTATION.--Water level measured weekly by observer.

DATUM.--Elevation of land-surface datum is 955 ft above sea level. Measuring point: top of casing, 1.50 ft above land-surface datum.

PERIOD OF RECORD.--September 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.69 ft below land-surface datum. May 29, 1973; lowest water level measured, 18.14 ft below land-surface datum, Mar. 7, 1977.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 07	15.49	NOV 18	15.69	JAN 07	16.45	JUN 30	15.94	AUG 11	16.46	SEP 22	16.59
14	15.34	DEC 02	15.99	MAY 27	16.10	JUL 07	15.90	21	16.79		
21	15.39	09	16.05	JUN 02	16.00	14	15.93	25	16.90		
28	15.48	16	16.29	09	16.02	21	16.07	SEP 02	16.65		
NOV 04	15.59	23	16.37	16	16.26	28	16.40	08	16.99		
11	15.65	30	16.45	23	16.14	AUG 04	16.06	15	16.63		

WATER YEAR 2003 HIGHEST 15.34 OCT 14, 2002 LOWEST 16.99 SEP 08, 2003

## BROWN COUNTY

443228088003101. Local number, BN-24/20E/24-0076.

LOCATION.--Lat 44°32'28", long 88°00'31", Hydrologic Unit 04030204. Owner: Wisconsin Public Service Corp.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 5 in., depth 500 ft, cased to 150 ft, open end.

INSTRUMENTATION.--Water level measured monthly by observer.

DATUM.--Elevation of land-surface datum is 590 ft above sea level. Measuring point: top of 3-in. pipe, 4.00 ft above land-surface datum.

PERIOD OF RECORD.--April 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured. 41.24 ft below land-surface datum, May 3, 1961; lowest water level measured, 248.97 ft below land-surface datum, Aug. 30, 1955.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	152.80	DEC 30	160.40	FEB 26	159.10	APR 29	133.40	JUN 30	149.80	AUG 28	156.30
NOV 27	148.17	JAN 27	165.90	MAR 26	148.85	MAY 29	143.25	JUL 16	157.50	SEP 25	154.10

WATER YEAR 2003 HIGHEST 133.40 APR 29, 2003 LOWEST 165.90 JAN 27, 2003

## GROUND-WATER LEVELS

## BURNETT COUNTY

455224092215601. Local number, BT-39/16W/17-0002.

LOCATION.--Lat 45°52'24", long 92°21'56", Hydrologic Unit 07030001. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in., depth 46 ft, cased to 46 ft, perforated 44.5-46 ft.

INSTRUMENTATION.--Water level measured weekly by observer.

DATUM.--Elevation of land-surface datum is 981 ft above sea level. Measuring point: pointer on float gage, 4.87 ft above land-surface datum.

PERIOD OF RECORD.--May 1937 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.33 ft below land-surface datum, June 28, 1968; lowest water level measured, 37.90 ft below land-surface datum, Aug. 21, 1992.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	32.17	DEC 06	31.98	FEB 07	32.06	APR 11	32.31	JUN 13	31.88	AUG 15	31.39
11	32.15	13	31.98	14	32.07	18	32.30	20	31.81	22	31.40
18	32.06	20	31.90	21	32.25	25	32.29	27	31.75	29	31.46
25	32.06	27	32.01	28	32.19	MAY 02	32.26	JUL 04	31.73	SEP 05	31.42
NOV 01	32.14	JAN 03	32.18	MAR 07	32.14	09	32.09	11	31.60	12	31.44
08	32.18	10	32.06	14	32.20	16	32.25	18	31.54	19	31.30
15	32.13	17	32.07	21	32.19	23	31.97	25	31.48	26	31.20
22	32.05	24	32.06	28	32.24	30	31.98	AUG 01	31.47		
29	32.10	31	32.10	APR 04	32.35	JUN 06	31.95	08	31.48		

WATER YEAR 2003 HIGHEST 31.20 SEP 26, 2003 LOWEST 32.35 APR 04, 2003

## DANE COUNTY

430456089190601. Local number, DN-07/10E/09-0105.

LOCATION.--Lat 43°04'56", long 89°19'06", Hydrologic Unit 07070005. Owner: City of Madison.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 10 in., depth 380 ft, cased to 85 ft, open end.

INSTRUMENTATION.--Continuous water-level recorder.

DATUM.--Elevation of land-surface datum is 870 ft above sea level. Measuring point: top of casing, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--September 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.91 ft below land-surface datum, July 11, 1993; lowest water level measured, 32.35 ft below land-surface datum, May 27, 1977.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	26.26	NOV 15	26.22	DEC 10	28.41	JUN 10	28.95
WATER YEAR 2003 HIGHEST		25.18	NOV 02, 2002		LOWEST		32.60
						AUG 08, 2003	

## GROUND-WATER LEVELS

533

## DODGE COUNTY

432407088552701. Local number, DG-11/13E/23-0081.

LOCATION.--Lat 43°24'15", long 88°55'26", Hydrologic Unit 07090002. Owner: Wis. Dept. of Transportation.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in., depth 125 ft, cased to 57 ft, open end.

INSTRUMENTATION.--Water level measured bi-monthly by observer.

DATUM.--Elevation of land-surface datum is 880 ft above sea level. Measuring point: 0.25-in. hole in side of casing, 1.30 ft above land-surface datum.

PERIOD OF RECORD.--November 1964 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.00 ft below land-surface datum, Dec. 4, 1991; lowest water level measured, 26.67 ft below land-surface datum, Feb. 3, 1965.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	22.65	DEC 21	22.10	FEB 08	22.92	APR 18	21.50	JUN 10	19.56	AUG 04	21.51
NOV 23	22.02	JAN 07	22.18	MAR 20	22.86	MAY 10	20.20	JUL 01	20.92	SEP 06	23.60
WATER YEAR 2003 HIGHEST		19.56	JUN 10, 2003		LOWEST		23.60	SEP 06, 2003			

## DOOR COUNTY

451518087042601. Local number, DR-32/28E/15-0317.

LOCATION.--Lat 44°15'18", long 87°04'26", Hydrologic Unit 04030102. Owner: Town of Liberty.

AQUIFER.--Silurian dolomite.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 4 in., depth 155 ft, cased to 153 ft.

INSTRUMENTATION.--Water level measured by observer.

DATUM.--Elevation of land-surface datum is 580 ft above sea level. Measuring point: top of casing, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--June 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.70 ft below land-surface datum, Mar. 27, 1986; lowest water level measured, 45.66 ft below land-surface datum, Jan. 2, 2003.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	42.27	JAN 02	45.66	MAR 12	45.02	MAY 01	37.52	AUG 08	43.52
DEC 02	43.47	FEB 11	44.74	APR 02	36.28	JUL 07	42.36	SEP 04	44.29
WATER YEAR 2003 HIGHEST		36.28	APR 02, 2003		LOWEST		45.66	JAN 02, 2003	

## DOUGLAS COUNTY

461921091484201. Local number, DS-44/12W/01-0327.

LOCATION.--Lat 46°19'21", long 91°48'42", Hydrologic Unit 04010301. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in., depth 148 ft, cased to 145 ft.

INSTRUMENTATION.--Water level measured by observer.

DATUM.--Elevation of land-surface datum is 1,090 ft above sea level. Measuring point: hole in pump base, 4.33 ft above land-surface datum.

PERIOD OF RECORD.--June 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 72.16 ft above land-surface datum, Dec. 28, 1972; lowest water level measured, 81.05 ft below land-surface datum, July 7, 1971.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	77.65	DEC 02	78.34	FEB 03	78.45	APR 03	78.51	JUN 05	78.47	AUG 01	77.92
NOV 01	77.95	JAN 03	78.47	MAR 05	78.47	MAY 01	78.44	JUL 01	77.86	SEP 03	78.04
WATER YEAR 2003 HIGHEST		77.65	OCT 01, 2002		LOWEST		78.51	APR 03, 2003			

GROUND-WATER LEVELS

GRANT COUNTY

425551090391301. Local number, GR-05/02W/06-0005

LOCATION.--Lat 42°55'51", long 90°39'13", Hydrologic Unit 07060003. Owner: Homer Yelinek.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 5 in., depth 35 ft, cased to 5 ft, open end.

INSTRUMENTATION.--Water level measured monthly by observer.

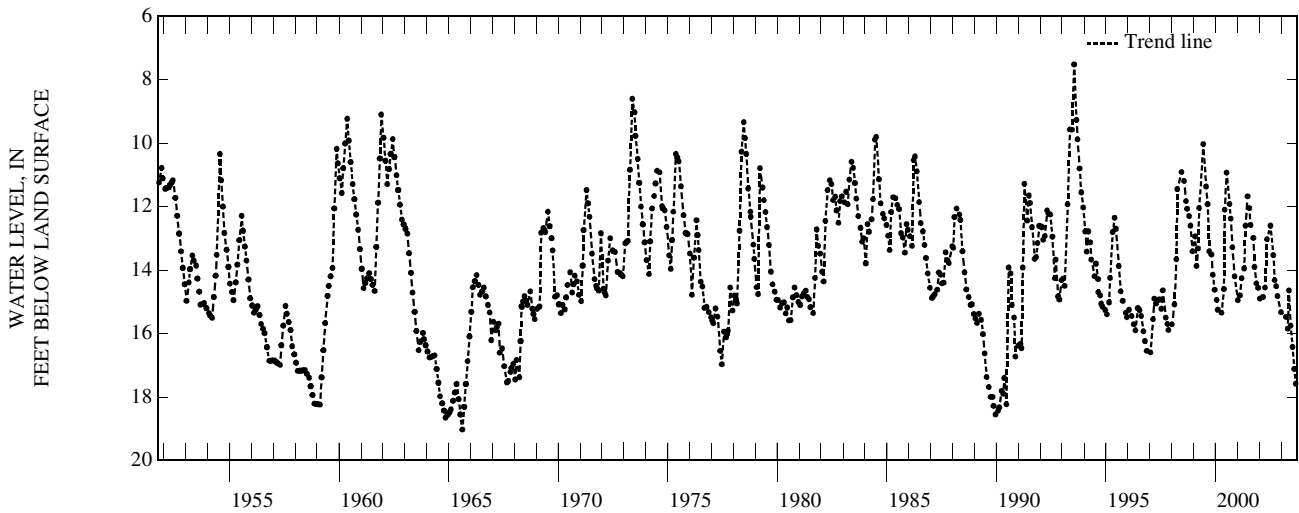
DATUM.--Elevation of land-surface datum is 980 ft above sea level. Measuring point: edge of pump base, 0.50 ft above land-surface datum.

PERIOD OF RECORD.--July 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.52 ft below land-surface datum, July 22, 1993; lowest water level measured, 19.03 ft below land-surface datum, Aug. 17, 1965.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	14.51	DEC 31	15.33	APR 21	15.85	JUN 09	15.75	AUG 08	17.12
NOV 01	14.82	MAR 24	15.48	MAY 12	14.64	JUL 11	16.42	SEP 04	17.58
WATER YEAR 2003 HIGHEST 14.51 OCT 10, 2002		LOWEST 17.58		SEP 04, 2003					



GREEN COUNTY

424427089494701. Local number, GN-03/06E/18-0002.

LOCATION.--Lat 42°44'27", long 89°49'47", Hydrologic Unit 07090003. Owner: Earl Waddington.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in., depth 150 ft.

INSTRUMENTATION.--Water level measured monthly by observer.

DATUM.--Elevation of land-surface datum is 1,020 ft above sea level. Measuring point: hole in pump base, 0.50 ft above land-surface datum.

PERIOD OF RECORD.--July 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 118.96 ft below land-surface datum, June 1, 1999; lowest water level measured, 143.94 ft below land-surface datum, Feb. 18, 1960.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	131.34	JAN 13	132.34	APR 24	131.93	JUL 30	133.24
NOV 15	131.56	MAR 18	131.54	JUN 12	132.51	SEP 26	133.67
WATER YEAR 2003 HIGHEST 131.34 OCT 03, 2002		LOWEST 133.67		SEP 26, 2003			



## IOWA COUNTY

425644090101901. Local number, IW-06/03E/32-0032.

LOCATION.--Lat 42°56'44", long 90°10'19", Hydrologic Unit 07090003. Owner: Archie Lee.

AQUIFER.--Galena-Platteville.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in., depth 92 ft.

INSTRUMENTATION.--Water level measured bi-monthly by observer.

DATUM.--Elevation of land-surface datum is 1,200 ft above sea level. Measuring point: 0.25-in. hole in top of casing, at land-surface datum.

PERIOD OF RECORD.--August 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 36.02 ft below land-surface datum, July 22, 1993; lowest water level measured, 68.81 ft below land-surface datum, Aug. 18, 1965.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	55.93	JAN 14	56.45	APR 17	56.66	JUL 30	57.66
NOV 15	55.88	MAR 19	56.92	JUN 12	57.01	SEP 25	60.23
WATER YEAR 2003 HIGHEST 55.88		NOV 15, 2002		LOWEST 60.23		SEP 25, 2003	

## JACKSON COUNTY

441810090484001. Local number, JA-21/04W/13-0038.

LOCATION.--Lat 44°18'10", long 90°48'40", Hydrologic Unit 07040007. Owner: Brockway Sanitation District.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled municipal well, diameter 18 in., depth 80 ft, cased to 80 ft, open end.

INSTRUMENTATION.--Water level measured weekly by observer.

DATUM.--Elevation of land-surface datum is 856 ft above sea level. Measuring point: top of vent pipe, 2.5 ft above land-surface datum.

PERIOD OF RECORD.--October 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 42.64 ft below land-surface datum, Sept. 10, 1993; lowest water level measured, 59.00 ft below land-surface datum, Sept. 26, 2003.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	56.10	DEC 06	55.30	FEB 07	56.10	APR 11	55.80	JUN 13	57.30	AUG 15	56.80
11	56.10	13	55.30	14	56.10	18	55.80	20	57.30	22	56.70
18	55.90	20	55.30	21	57.30	25	57.50	27	57.50	29	58.10
25	55.70	27	55.10	28	56.10	MAY 02	57.30	JUL 04	57.80	SEP 05	58.20
NOV 01	56.10	JAN 03	55.10	MAR 07	55.60	09	57.30	11	58.30	12	58.30
08	56.30	10	55.10	14	56.00	16	57.40	18	58.50	19	58.10
15	56.30	17	55.90	21	55.60	23	57.30	25	57.50	26	59.00
22	55.80	24	56.10	28	57.30	30	57.40	AUG 01	56.40		
29	55.40	31	55.90	APR 04	55.70	JUN 06	56.70	08	56.40		

WATER YEAR 2003 HIGHEST 55.10 DEC 27, 2002 JAN 03 AND 10, 2003 LOWEST 59.00 SEP 26, 2003

GROUND-WATER LEVELS

KENOSHA COUNTY

423214087503801. Local number, KE-01 /22E/13-0046.

LOCATION.--Lat 42°32'14", long 87°50'38", Hydrologic Unit 04040002. Owner: St. Joseph Home.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled well, diameter 6 in., depth 135 ft, cased to 82 ft, open end.

INSTRUMENTATION.--Water level measured by observer.

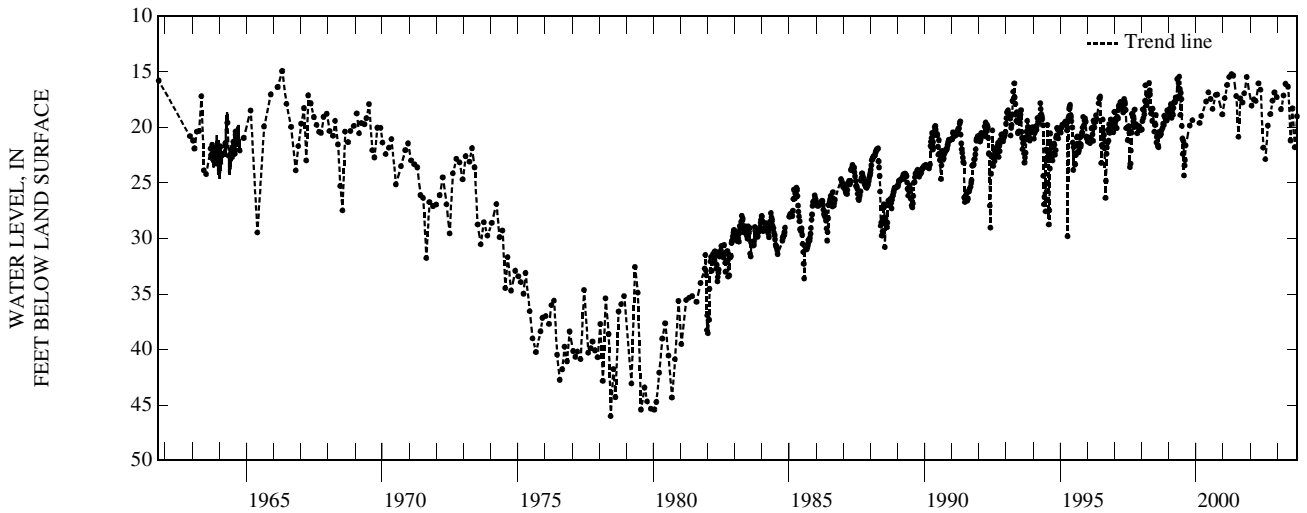
DATUM.--Elevation of land-surface datum is 645 ft above sea level. Measuring point: top of casing, 1.60 ft above land-surface datum.

PERIOD OF RECORD.--January 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.00 ft below land-surface datum, Mar. 16, 1961; lowest water level measured, 46.02 ft below land-surface datum, June 6, 1978.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	17.61	DEC 26	17.29	MAR 27	17.15	MAY 28	16.35	JUL 24	18.31	SEP 26	19.01
NOV 25	16.87	FEB 21	18.37	APR 23	16.09	JUN 30	21.19	AUG 26	21.80		
WATER YEAR 2003 HIGHEST 16.09 APR 23, 2003		LOWEST 21.80		AUG 26, 2003							



## GROUND-WATER LEVELS

537

## LAFAYETTE COUNTY

423114090161101. Local number, LF-01/02E/33-0057.

LOCATION.--Lat 42°31'13", long 90°16'11", Hydrologic Unit 07060005. Owner: Coulthard Estate.

AQUIFER.--Galena-Platteville.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 10 in., depth 265 ft, cased to 16 ft, open end.

INSTRUMENTATION.--Water level measured by observer.

DATUM.--Elevation of land-surface datum is 1,000 ft above sea level. Measuring point: top of casing, 3.00 ft above land-surface datum.

PERIOD OF RECORD.--April 1952 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.00 ft below land-surface datum, June 26, 1996; lowest water level, 130.99 ft below land-surface datum, Oct. 27, 1959.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	26.01	JAN 13	27.88	APR 24	27.87	JUL 30	27.62
NOV 15	26.41	MAR 18	28.16	JUN 12	27.05	SEP 26	27.11
WATER YEAR 2003 HIGHEST 26.01		OCT 03, 2002		LOWEST 28.16		MAR 18, 2003	

424004090220601. Local number, LF-02/01E/04-0011.

LOCATION.--Lat 42°40'04", long 90°22'06", Hydrologic Unit 07060005. Owner: Ed Wiegel.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in., depth 64 ft.

INSTRUMENTATION.--Water level measured monthly by observer.

DATUM.--Elevation of land-surface datum is 1,010 ft above sea level. Measuring point: top of casing, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--March 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.58 ft below land-surface datum, July 22, 1993; lowest water level measured, 38.81 ft below land-surface datum, Aug. 1, 1977.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	26.46	JAN 13	27.14	APR 24	27.31	JUL 30	27.49
NOV 15	26.60	MAR 18	27.66	JUN 12	26.98	SEP 26	26.74
WATER YEAR 2003 HIGHEST 26.46		OCT 03, 2002		LOWEST 27.66		MAR 18, 2003	

GROUND-WATER LEVELS

MANITOWOC COUNTY

440430087420401. Local number, MN-19/23E/35-0028.

LOCATION.--Lat 44°04'30", long 87°42'04", Hydrologic Unit 04030101. Owner: Wis. Dept. of Transportation.

AQUIFER.--Silurian dolomite.

WELL CHARACTERISTICS.--Drilled domestic artesian well, diameter 6 in., depth 147 ft, cased to 133 ft, open end.

INSTRUMENTATION.--Water level measured weekly by observer.

DATUM.--Elevation of land-surface datum is 670 ft above sea level. Measuring point: 0.25-in. hole in pump base, 1.00 ft above land-surface datum.

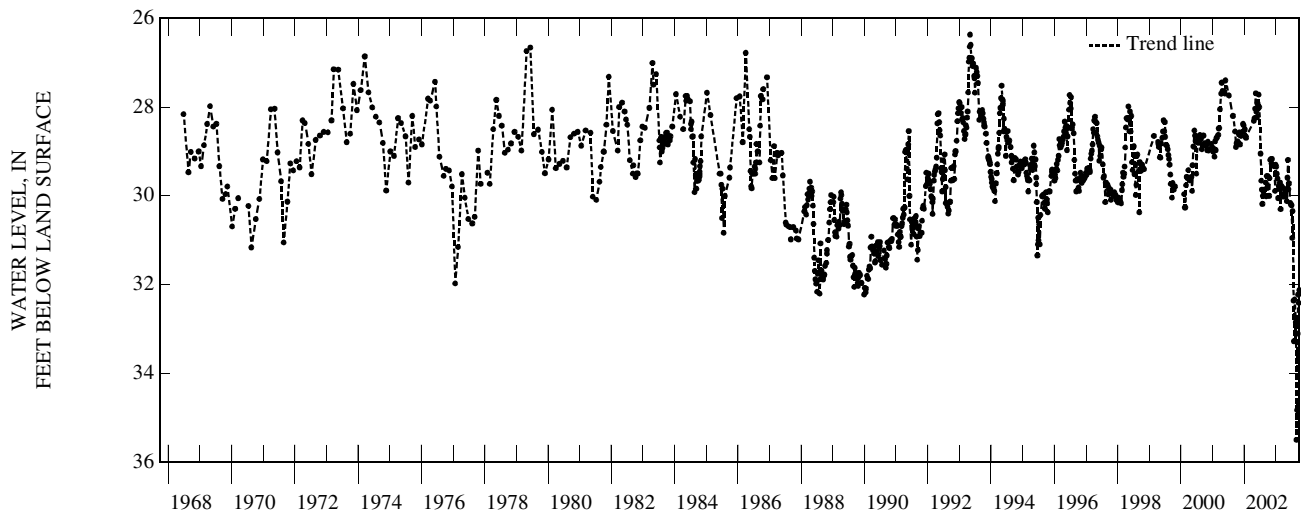
PERIOD OF RECORD.--June 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.37 ft below land-surface datum, May 4, 1993; lowest water level measured, 32.22 ft below land-surface datum, Dec. 28, 1989.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	29.56	DEC 10	29.32	FEB 04	29.78	APR 09	29.96	JUN 18	30.16	AUG 21	32.84
15	30.00	17	29.33	11	29.77	16	29.92	24	30.20	26	35.49
22	29.60	23	29.89	18	29.70	23	30.01	JUL 02	30.21	SEP 03	34.82
29	29.19	30	29.30	25	30.30	MAY 07	30.12	09	30.95	09	33.10
NOV 05	29.17	JAN 07	29.34	MAR 04	29.80	15	29.59	15	30.34	16	32.22
12	29.27	14	29.50	11	29.78	21	29.19	24	32.36	22	32.41
19	29.17	21	29.61	25	30.02	27	29.85	30	33.27	30	32.12
DEC 02	29.30	28	30.05	APR 01	29.83	JUN 01	29.72	AUG 05	32.33		

WATER YEAR 2003 HIGHEST 29.17 NOV 05 AND 19, 2002 LOWEST 35.49 AUG 26, 2003



MARATHON COUNTY

444709089265301. Local number, MR-27/09E/31-0028.

LOCATION.--Lat 44°47'09", long 89°26'53", Hydrologic Unit 07070002. Owner: U.S. Geol. Survey.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in., depth 27 ft, cased to 25 ft, well point 25-27 ft.

INSTRUMENTATION.--Water level measured weekly by observer.

DATUM.--Elevation of land-surface datum is 1,229 ft above sea level. Measuring point: top of pipe, 0.80 ft above land-surface datum.

PERIOD OF RECORD.--November 1944 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.18 ft below land-surface datum, Aug. 1, 1993; lowest water level measured, 26.09 ft below land-surface datum, Mar. 30, 1959.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	20.30	DEC 26	20.00	FEB 27	20.30	APR 30	20.30	JUN 27	20.50	AUG 20	19.10
NOV 27	20.00	JAN 31	20.20	MAR 29	20.30	MAY 30	19.90	JUL 28	19.20	SEP 29	19.20

WATER YEAR 2003 HIGHEST 19.10 AUG 20, 2003 LOWEST 20.50 JUN 27, 2003

MARINETTE COUNTY

453816087590101. Local number, MT-37/20E/34-0007.

LOCATION.--Lat 45°38'16", long 87°59'01", Hydrologic Unit 04030108. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in., depth 33 ft, cased to 33 ft, open end.

INSTRUMENTATION.--Water level measured weekly by observer.

DATUM.--Elevation of land-surface datum is 980 ft above sea level. Measuring point: pointer on float gage, 4.00 ft above land-surface datum.

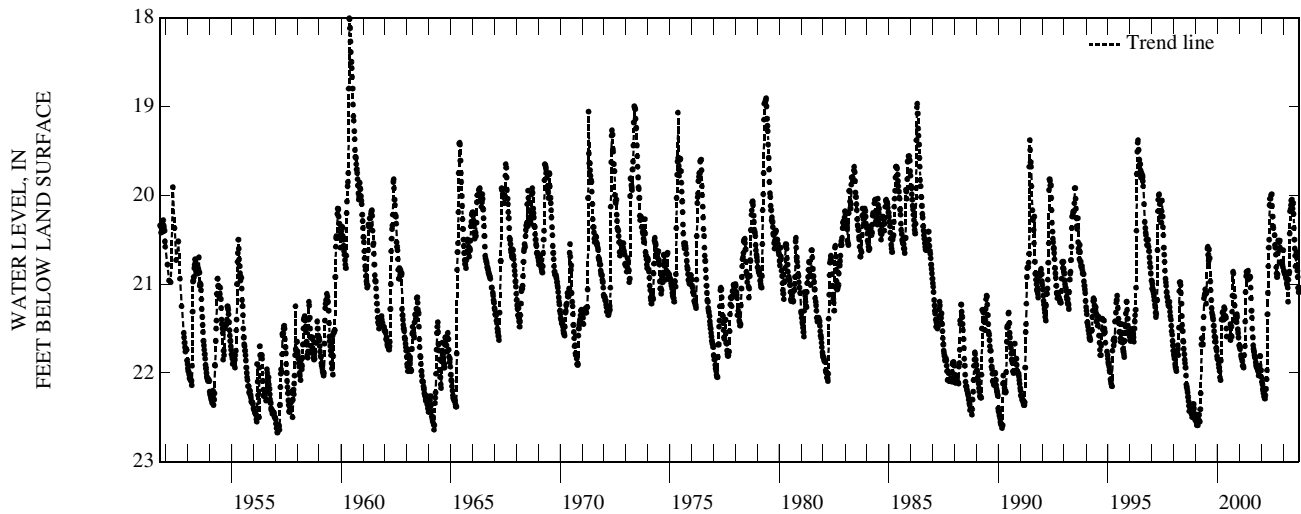
PERIOD OF RECORD.--March 1939 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.01 ft below land-surface datum, May 17, 1960; lowest water level measured, 23.26 ft below land-surface datum, Nov. 2, 1948.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	20.89	DEC 10	20.77	FEB 18	20.92	APR 22	20.43	JUN 24	20.21	SEP 02	20.92
08	20.65	17	20.78	25	20.94	29	20.18	JUL 01	20.37	09	21.04
15	20.51	30	20.81	MAR 04	20.99	MAY 06	20.16	08	20.50	17	21.09
25	20.53	JAN 07	20.62	12	21.01	13	20.11	15	20.60	23	21.09
29	20.52	14	20.85	19	21.04	20	20.06	22	20.68	30	21.04
NOV 05	20.51	21	20.86	25	21.20	27	20.05	29	20.80		
12	20.59	28	20.88	APR 01	20.95	JUN 03	20.10	AUG 13	20.64		
19	20.61	FEB 04	20.88	08	20.88	10	20.15	19	20.70		
DEC 03	20.75	11	20.90	15	20.86	17	20.09	26	20.85		

WATER YEAR 2003 HIGHEST 20.05 MAY 27, 2003 LOWEST 21.20 MAR 25, 2003



## GROUND-WATER LEVELS

## MARQUETTE COUNTY

435244089293401. Local number, MQ-16/08E/12-0009.

LOCATION.--Lat 43°52'44", long 89°29'34", Hydrologic Unit 04030201. Owner: Village of Westfield.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in., depth 274 ft.

INSTRUMENTATION.--Water level measured bi-monthly by observer.

DATUM.--Elevation of land-surface datum is 880 ft above sea level. Measuring point: top of casing, at land-surface datum.

PERIOD OF RECORD.--October 1949 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.15 ft below land-surface datum, July 13, 1993; lowest water level measured, 19.69 ft below land-surface datum, Jan. 25, 1999.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	15.28	DEC 07	15.54	JAN 26	15.75	APR 18	15.85	JUN 27	15.57
NOV 09	15.35	JAN 01	15.62	MAR 20	15.90	MAY 10	15.42	SEP 19	16.17
WATER YEAR 2003 HIGHEST 15.28		OCT 04, 2002		LOWEST 16.17		SEP 19, 2003			

433956089275601. Local number, MQ-14/09E/30-0026.

LOCATION.--Lat 43°39'56", long 89°27'56", Hydrologic Unit 04030201. Owner: Leslie Mountford.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in., depth 170 ft, cased to 145 ft, open end.

INSTRUMENTATION.--Water level measured bi-monthly by observer.

DATUM.--Elevation of land-surface datum is 800 ft above sea level. Measuring point: 0.25-in. hole in cap of casing, 0.75 ft above land-surface datum.

PERIOD OF RECORD.--May 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.80 ft below land-surface datum, Apr. 2, 1973; lowest water level measured, 19.36 ft below land-surface datum, Jan. 26, 2003.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	17.73	DEC 07	17.99	JAN 26	19.36	APR 18	13.74	JUN 27	17.54
NOV 09	17.71	JAN 01	18.10	MAR 20	18.60	MAY 10	17.33	SEP 19	18.71
WATER YEAR 2003 HIGHEST 13.74		APR 18, 2003		LOWEST 19.36		JAN 26, 2003			

GROUND-WATER LEVELS

MILWAUKEE COUNTY

425613088014301. Local number, ML-06/21E/32-0148.

LOCATION.--Lat 42°56'13", long 88°01'43", Hydrologic Unit 04040002. Owner: Milwaukee County.

AQUIFER.--Silurian dolomite.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 5 in., depth 180 ft, cased to 43 ft, open end.

INSTRUMENTTION.--Water level measured monthly by observer.

DATUM.--Elevation of land-surface datum is 774 ft above sea level. Measuring point: top of 0.25-in. pipe, at land-surface datum.

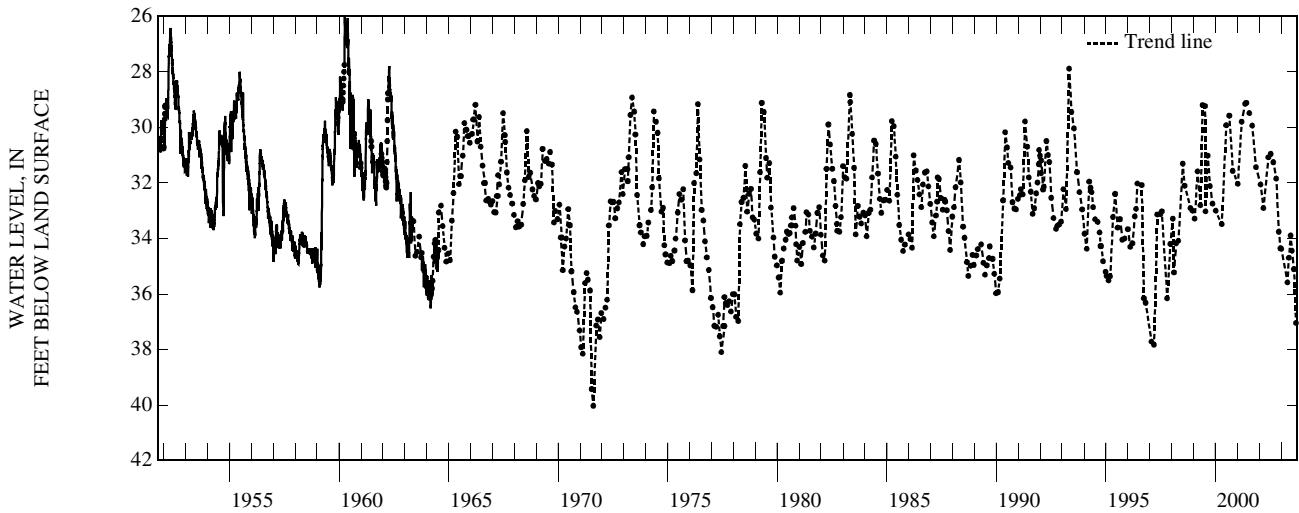
PERIOD OF RECORD.--September 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.56 ft below land-surface datum, May 4, 1951; lowest water level measured, 40.03 ft below land-surface datum, Aug. 13, 1971.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	31.85	DEC 21	34.36	APR 18	35.59	JUN 10	33.90	AUG 04	35.11
NOV 23	33.76	JAN 07	34.38	MAY 10	34.70	JUL 01	34.45	SEP 06	37.05

WATER YEAR 2003 HIGHEST 31.85 OCT 12, 2002 LOWEST 37.05 SEP 06, 2003



MONROE COUNTY

434342090495601. Local number, MO-15/04W/34-0002.

LOCATION.--Lat 43°43'42", long 90°49'56", Hydrologic Unit 07060001. Owner: Joseph Anderson.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 5 in., depth 44 ft.

INSTRUMENTTION.--Water level measured by observer.

DATUM.--Elevation of land-surface datum is 1,100 ft above sea level. Measuring point: top of casing, 0.50 ft above land-surface datum.

REMARKS.--No measurements made in 1981-82 water year.

PERIOD OF RECORD.--July 1934 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.70 ft below land-surface datum, Apr. 10, 1976; lowest water level measured, 18.68 ft below land-surface datum, Feb. 23, 1935.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 02	7.31	NOV 14	7.63	JAN 03	7.71	JUL 10	7.69
WATER YEAR 2003 HIGHEST 7.31 OCT 02, 2002		LOWEST 7.71		JAN 03, 2003			

GROUND-WATER LEVELS  
MONROE COUNTY—Continued

440026090390101. Local number, MO-18/02W/29-0017.

LOCATION.--Lat 44°00'26", long 90°39'01", Hydrologic Unit 07040006. Owner: U.S. Army.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 9 in., depth 192 ft, cased to 109 ft, open end.

INSTRUMENTATION.--Continuous water-level recorder.

DATUM.--Elevation of land-surface datum is 909 ft above sea level. Measuring point: top of casing, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1949 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.48 ft below land-surface datum, Sept. 29, 1965; lowest water level, 8.62 ft below land-surface datum, Oct. 7, 1987.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	5.60	3.47	4.87	5.58	6.57	5.69	5.86	5.70	5.11	5.18	6.60	7.04
10	5.41	3.33	4.34	5.92	6.55	5.80	5.82	5.63	5.29	5.57	6.90	7.08
15	5.41	3.38	4.62	6.42	6.56	5.92	5.87	5.55	5.37	---	7.29	7.02
20	5.49	3.56	5.06	6.63	4.73	5.61	5.87	5.38	4.68	---	7.45	7.03
25	5.53	3.64	5.31	6.62	4.91	5.85	5.82	5.24	4.87	---	7.14	6.96
EOM	5.69	4.51	5.57	6.54	4.99	5.90	5.72	5.27	5.29	---	7.21	6.58

WATER YEAR 2003 HIGHEST 3.30 NOV 09, 2002 LOWEST 7.69 AUG 24, 2003

OCONTO COUNTY

450819088263901. Local number, OC-31/16E/25-0179.

LOCATION.--Lat 45°08'19", long 88°26'39", Hydrologic Unit 04030104. Owner: U.S. Forest Service.

AQUIFER.--Prairie du Chien.

WELL CHARACTERISTICS.--Drilled public water-table well, diameter 6 in., depth 46 ft, cased to 38 ft, open end.

INSTRUMENTATION.--Water level measured by observer.

DATUM.--Elevation of land-surface datum is 920 ft above sea level. Measuring point: hole in pump base, 2.00 ft above land-surface datum.

PERIOD OF RECORD.--September 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.54 ft below land-surface datum, June 30, 1993; lowest water level measured, 20.52 ft below land-surface datum, May 12, 1999.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	18.70	DEC 02	18.75	FEB 02	19.09	APR 01	18.84	JUN 01	18.02	AUG 01	18.55
NOV 01	18.53	JAN 01	18.89	MAR 01	19.27	MAY 01	18.14	JUL 01	18.22	SEP 01	18.89

WATER YEAR 2003 HIGHEST 18.02 JUN 01, 2003 LOWEST 19.27 MAR 01, 2003



## ONEIDA COUNTY

453720089215401. Local number, ON-36/09E/09-0024.

LOCATION.--Lat 45°37'20", long 89°21'54", Hydrologic Unit 07070001. Owner: U.S. Geol. Survey.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in., depth 33 ft, cased to 37 ft, well point 31-33 ft.

INSTRUMENTATION.--Water level measured weekly by observer.

DATUM.--Elevation of land-surface datum is 1,560 ft above sea level. Measuring point: top of casing, 0.80 ft above land-surface datum.

PERIOD OF RECORD.--November 1944 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.67 ft below land-surface datum, Aug. 3, 1968; lowest water level measured, 23.16 ft below land-surface datum, Mar. 12, 1990.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	19.85	DEC 03	19.65	FEB 04	20.34	APR 02	20.71	JUN 05	19.90	AUG 04	20.38
NOV 03	19.55	JAN 05	20.05	MAR 05	20.64	MAY 05	20.28	JUL 02	20.04	SEP 04	20.60
WATER YEAR 2003 HIGHEST 19.55 NOV 03, 2002		LOWEST 20.71 APR 02, 2003									

## POLK COUNTY

452352092332001. Local number, PK-34/18W/26-0093.

LOCATION.--Lat 45°23'52", long 92°33'20", Hydrologic Unit 07030005. Owner: Wis. Dept. of Transportation.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled domestic artesian well, diameter 6 in., depth 64 ft, cased to 60 ft, open end.

INSTRUMENTATION.--Water level measured weekly by observer.

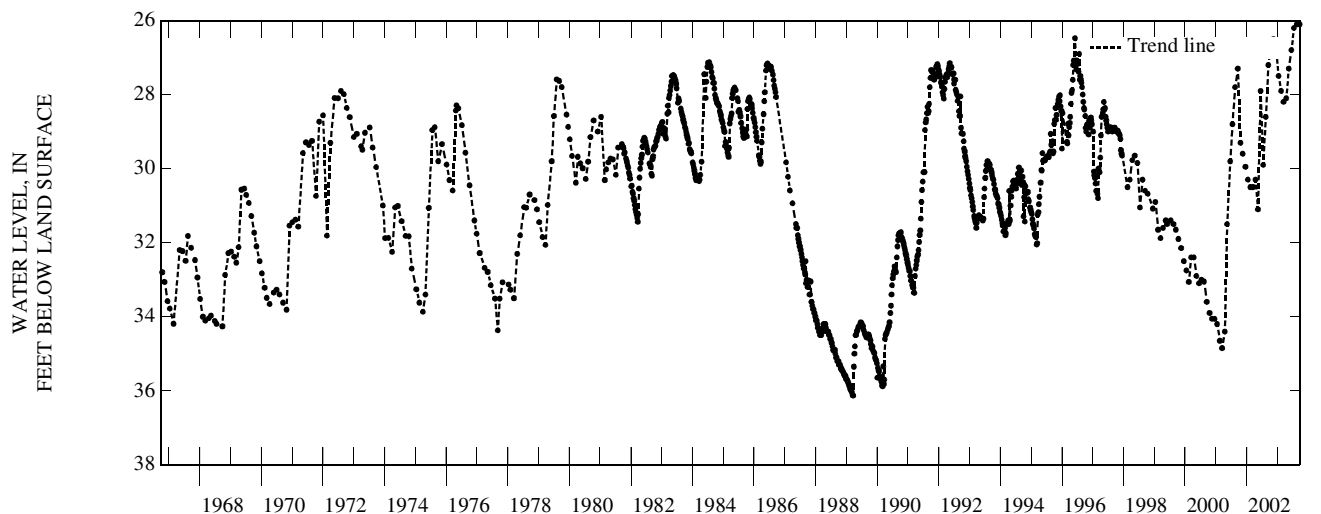
DATUM.--Elevation of land-surface datum is 1,140 ft above sea level. Measuring point: hole in pump base, 2.00 ft above land-surface datum.

PERIOD OF RECORD.--March 10, 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 23.72 ft below land-surface datum, June 20, 1973; lowest water level measured, 36.13 ft below land-surface datum, Mar. 22, 1989.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	26.60	DEC 13	26.70	FEB 13	27.90	APR 16	28.10	JUN 16	26.80	AUG 20	26.10
NOV 15	26.50	JAN 14	27.50	MAR 14	28.20	MAY 15	27.30	JUL 15	26.20	SEP 23	26.10
WATER YEAR 2003 HIGHEST 26.10 AUG 20, 2003		SEP 23, 2003		LOWEST 28.20 MAR 14, 2003							



GROUND-WATER LEVELS

PORTAGE COUNTY

442810089194501. Local number, PT-23/10E/18-0276.

LOCATION.--Lat 44°28'10", long 89°19'45", Hydrologic Unit 04030202. Owner: Portage County.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven unused water-table well, diameter 1.25 in., depth 17 ft, cased to 15 ft.

INSTRUMENTATION.--Water level measured by observer.

DATUM.--Elevation of land-surface datum is 1,090 ft above sea level. Measuring point: rim of casing, 3.50 ft above land-surface datum.

PERIOD OF RECORD.--July 1958 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.01 ft below land-surface datum, Apr. 22, 1974; lowest water level measured, 11.09 ft below land-surface datum, Mar. 3, 1959.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 07	6.06	JAN 26	7.42	MAY 25	5.10	JUL 03	6.08	SEP 29	7.50
NOV 14	6.17	MAR 20	7.73	JUN 24	5.90	20	7.00		
DEC 31	7.00	APR 20	5.29	25	5.90	AUG 29	7.40		
WATER YEAR 2003 HIGHEST		5.10 MAY 25, 2003		LOWEST		7.73 MAR 20, 2003			

PRICE COUNTY

453311090065301. Local number, PR-35/03E/04-0065.

LOCATION.--Lat 45°33'11", long 90°06'53", Hydrologic Unit 07070001. Owner: Town of Knox.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in., depth 118 ft, cased to 118 ft, open end.

INSTRUMENTATION.--Water level measured monthly by observer.

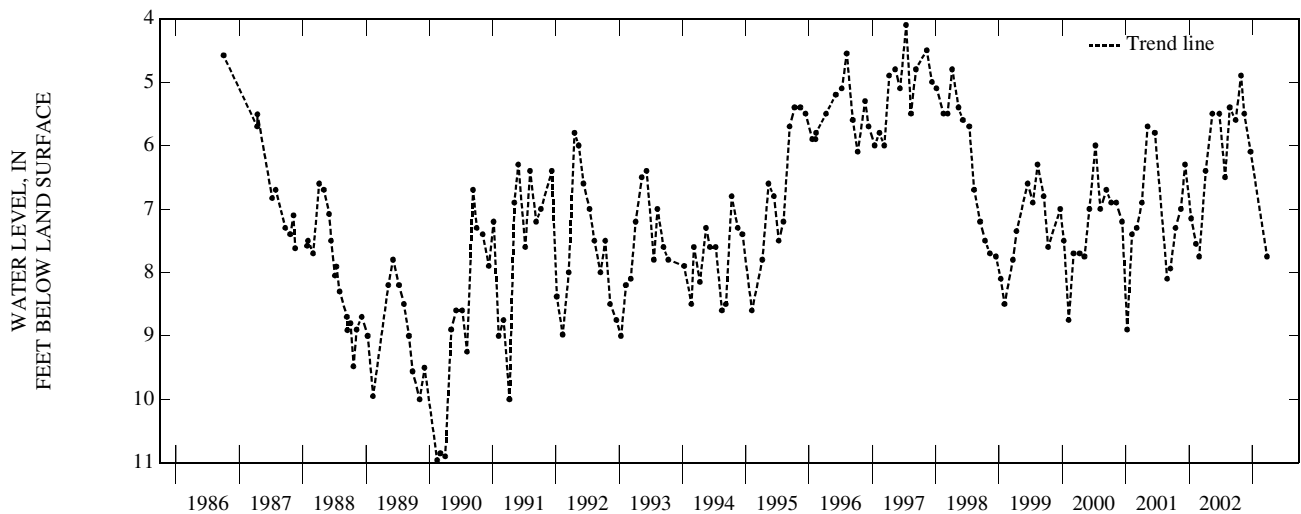
DATUM.--Elevation of land-surface datum is 1,695 ft above sea level. Measuring point: top of casing, 2.00 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.10 ft above land-surface datum, July 14, 1997; lowest water level measured, 10.96 ft below land-surface datum, Feb. 15, 1990.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	4.90	NOV 16	5.50	DEC 22	6.10	MAR 27	7.75
WATER YEAR 2003 HIGHEST		4.90 OCT 28, 2002		LOWEST		7.75 MAR 27, 2003	



## GROUND-WATER LEVELS

545

## RACINE COUNTY

424119088081801. Local number, RA-03/20E/28-0062.

LOCATION.--Lat 42°41'19", long 88°08'18", Hydrologic Unit 07120006. Owner: Wis. Dept .of Transportation.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled artesian well, diameter 6 in., depth 104 ft, cased to 104 ft, open hole.

INSTRUMENTATION.--Water level measured monthly by observer.

DATUM.--Elevation of land-surface datum is 800 ft above sea level. Measuring point: hole in pump base, 1.50 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.21 ft below land-surface datum, Apr. 28, 1988; lowest water level measured, 31.50 ft below land-surface datum, Aug. 27, 2003.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	25.69	DEC 11	25.88	FEB 26	26.84	APR 22	27.19	JUL 28	29.83	SEP 29	30.69
NOV 13	25.63	JAN 29	26.28	MAR 26	27.00	MAY 30	26.64	AUG 27	31.50		
WATER YEAR 2003 HIGHEST 25.63 NOV 13, 2002 LOWEST 31.50 AUG 27, 2003											

## RICHLAND COUNTY

431840090203201. Local number, RI-10/01E/26-0023.

LOCATION.--Lat 43°18'40", long 90°20'32", Hydrologic Unit 07070005. Owner: Koch Tractor, Inc.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled domestic artesian well, diameter 6 in., depth 160 ft, cased to 135 ft, open end.

INSTRUMENTATION.--Water level measured by observer.

DATUM.--Elevation of land-surface datum is 725 ft above sea level. Measuring point: top of 1-in. breather pipe, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--February 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.11 ft below land-surface datum, May 22, 1973; lowest water level measured, 16.45 ft below land-surface datum, Mar. 14, 1991.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 02	13.44	JAN 14	14.22	APR 17	14.09	JUL 30	14.23
NOV 14	13.72	MAR 19	14.62	JUN 12	13.60	SEP 25	14.56
WATER YEAR 2003 HIGHEST 13.44 OCT 02, 2002 LOWEST 14.62 MAR 19, 2003							

## GROUND-WATER LEVELS

## SAUK COUNTY

432100089440001. Local number, SK-10/06E/02-0003.

LOCATION.--Lat 43°21'00", long 89°44'00", Hydrologic Unit 07070005. Owner: Badger Army Ammunition Plant.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 12 in., depth 451 ft, cased to 160 ft, open end.

INSTRUMENTATION.--Continuous water-level recorder.

DATUM.--Elevation of land-surface datum is 884 ft above sea level. Measuring point: hole in platform, at land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 67.23 ft below land-surface datum, Aug. 10, 1993; lowest water level, 83.92 ft below land-surface datum, Aug. 2, 1946.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	74.75	75.48	76.24	76.68	77.29	77.54	78.13	78.00	78.33	78.74	79.15	79.90
10	74.81	75.54	76.22	76.71	77.22	77.71	78.06	78.15	78.35	78.75	79.35	79.99
15	74.91	75.93	76.40	76.87	77.45	77.63	77.88	78.39	78.55	78.82	79.42	79.97
20	75.11	75.88	76.28	76.88	77.33	77.73	78.01	78.54	78.57	78.88	79.46	80.15
25	75.14	76.11	76.53	76.96	77.61	77.90	78.12	78.32	78.54	79.06	79.63	80.14
EOM	75.29	76.12	76.61	77.05	77.47	77.92	78.22	78.35	78.68	79.06	79.82	80.19

WATER YEAR 2003 HIGHEST 74.57 OCT 04, 2002 LOWEST 80.19 SEP 30, 2003

## SAWYER COUNTY

455841091235301. Local number, SW-40/08W/05-231.

LOCATION.--Lat 45°58'41", long 90°23'53", Hydrologic Unit 07050001. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven unused water-table well, diameter 3 in., depth 11 ft, cased to 9 ft.

INSTRUMENTATION.--Continuous water-level recorder.

DATUM.--Elevation of land-surface datum is 1,310 ft above sea level. Measuring point: top of casing, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--October 2002 to September 2003.

EXTREMES FOR CURRENT YEAR.--Highest water level, 5.67 ft below land-surface datum, Nov. 15; lowest water level, 6.30 ft below land-surface datum, May 7.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
5	5.84	5.68	5.72	5.86	6.07	6.14	6.13	6.27	6.05	6.15	6.13	6.14
10	5.79	5.72	5.82	5.85	6.01	6.08	6.09	6.21	5.99	6.12	6.19	6.13
15	5.78	5.67	5.79	5.90	6.01	6.06	6.08	6.15	6.09	6.10	6.13	6.17
20	5.76	5.75	5.75	6.02	6.03	6.05	5.96	6.12	6.14	6.20	6.17	6.13
25	5.72	5.74	5.73	5.92	6.17	6.19	6.03	6.09	6.07	6.12	6.15	6.11
EOM	5.73	5.76	5.79	5.97	6.05	6.08	6.00	6.02	6.08	6.13	6.16	6.12

WATER YEAR 2003 HIGHEST 5.76 NOV 15, 2002 LOWEST 6.30 MAY 07, 2003

## GROUND-WATER LEVELS

547

## TAYLOR COUNTY

450947090483902. Local number, TA-31/04W/13-0001.

LOCATION.--Lat 45°09'47", long 90°48'39", Hydrologic Unit 07050005. Owner: Village of Gilman.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 18 in., depth 26 ft, cased to 16 ft, screened 16-26 ft.

INSTRUMENTATION.--Continuous water-level recorder.

DATUM.--Elevation of land-surface datum is 1,200 ft above sea level. Measuring point: top of casing, 2.00 ft above land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--April 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.69 ft below land-surface datum, June 21, 1993; lowest water level, 13.11 ft below land-surface datum, Oct. 15, 1959.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.62	8.89	9.62	9.76	9.80	9.63	8.61	8.70	9.49	9.54	10.12	10.60
10	6.94	9.04	9.69	9.81	9.81	9.71	9.22	8.01	9.22	9.74	10.16	10.60
15	8.00	9.20	9.78	9.68	9.83	9.62	8.94	6.51	8.88	9.82	10.33	10.55
20	8.51	9.31	9.65	9.67	9.83	8.44	5.42	7.97	9.43	10.02	10.45	10.48
25	8.51	9.45	9.69	9.57	9.86	8.53	7.08	8.65	9.20	10.22	10.49	10.52
EOM	8.64	9.52	9.82	9.46	9.71	8.32	8.24	9.19	9.29	10.30	10.60	10.41

WATER YEAR 2003 HIGHEST 5.19 MAY 12, 2003 LOWEST 10.61 SEP 01, 02, 03, 12, 2003

## TREMPEALEAU COUNTY

440422091182901. Local number, TR-19/08W/35-0001.

LOCATION.--Lat 44°04'22", long 91°18'29", Hydrologic Unit 07040007. Owner: Mrs. William Davidson.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 195 ft.

INSTRUMENTATION.--Water level measured monthly by observer.

DATUM.--Elevation of land-surface datum is 820 ft above sea level. Measuring point: top of casing, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--October 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 131.38 ft below land-surface datum, Sept. 7, 1993; lowest water level measured, 146.56 ft below land-surface datum, Sept. 1, 1959.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	139.34	DEC 01	139.99	FEB 05	140.70	APR 12	139.72	JUN 05	139.25	AUG 02	140.80
NOV 04	139.96	JAN 01	140.01	MAR 01	140.11	MAY 01	138.39	JUL 01	139.67	SEP 06	141.02

WATER YEAR 2003 HIGHEST 138.39 MAY 01, 2003 LOWEST 141.02 SEP 06, 2003

## GROUND-WATER LEVELS

## TREMPEALEAU COUNTY—Continued

440414091270401. Local number, TR-19/09W/33-0009.

LOCATION.--Lat 44°04'14", long 91°27'04", Hydrologic Unit 07040005. Owner: Village of Centerville.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled public-supply water-table, diameter 6 in., depth 71 ft, cased to 66 ft, screened 66-71 ft.

INSTRUMENTATION.--Water level measured monthly by observer.

DATUM.--Elevation of land-surface datum is 740 ft above sea level. Measuring point: top of breather pipe, at land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 42.80 ft below land-surface datum, Oct. 12, 1993, and Apr. 12, 1994; lowest water level measured, 57.11 ft below land-surface datum, Mar. 16, 1965.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	49.70	DEC 04	46.50	FEB 03	49.90	APR 01	44.50	JUN 05	50.60
NOV 04	45.80	JAN 03	48.00	MAR 03	50.10	MAY 02	50.60	AUG 02	51.10

WATER YEAR 2003 HIGHEST 44.50 APR 01, 2003 LOWEST 51.10 AUG 02, 2003

## VILAS COUNTY

455517089144001. Local number, VI-40/10E/28-0033.

LOCATION.--Lat 45°55'17", long 89°14'40", Hydrologic Unit 07070001. Owner: Trees for Tomorrow, Inc.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled observation water table well, diameter 6 in., depth 37 ft, cased to 37 ft.

INSTRUMENTATION.--Water level measured monthly by observer.

DATUM.--Elevation of land-surface datum is 1,640 ft above sea level. Measuring point: top of casing, 0.75 ft above land-surface datum.

PERIOD OF RECORD.--December 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.41 ft below land-surface datum, May 14, 1997; lowest water level measured, 16.22 ft below land-surface datum, Apr. 4, 2001.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	14.58	JAN 15	15.03	MAR 13	15.42	MAY 30	14.58	JUL 14	15.09	SEP 19	15.50
NOV 15	14.61	FEB 18	15.05	APR 16	15.38	JUN 17	14.61	AUG 13	15.25		

WATER YEAR 2003 HIGHEST 14.58 OCT 17, 2002 MAY 30, 2003 LOWEST 15.50 SEP 19, 2003

## WALWORTH COUNTY

423532088254601. Local number, WW-02/17E/36-0037.

LOCATION.--Lat 42°35'32", long 88°25'46", Hydrologic Unit 07120006. Owner: Lake Geneva Water Works.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 10 in., depth 820 ft, cased to 10 in., 0-214 ft; 8 in., 214-227 ft, open end.

INSTRUMENTATION.--Water level measured monthly by observer.

DATUM.--Elevation of land-surface datum is 860 ft above sea level. Measuring point: top of casing, 2.00 ft above land-surface datum.

PERIOD OF RECORD.--February 1962 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 129.48 ft below land-surface datum, Feb. 14, 1962; lowest water level measured, 250.71 ft below land-surface datum, Aug. 21, 2000.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	217.93	DEC 21	217.23	FEB 08	213.74	APR 18	214.44	JUN 10	215.33	AUG 04	218.90
NOV 23	220.18	JAN 07	215.61	MAR 08	214.51	MAY 10	213.67	JUL 01	217.31		

WATER YEAR 2003 HIGHEST 213.67 MAY 10, 2003 LOWEST 220.18 NOV 23, 2002

## GROUND-WATER LEVELS

549

## WAUKESHA COUNTY

425535088131701. Local number, WK-05/19E/02-0031.

LOCATION.--Lat 42°55'35", long 88°13'17", Hydrologic Unit 07120006. Owner: William Bahl.

AQUIFER.--Silurian dolomite.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in., depth 508 ft, cased to 434 ft, open end.

INSTRUMENTATION.--Water level measured monthly.

DATUM.--Elevation of land-surface datum is 962 ft above sea level. Measuring point: top of casing, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--May 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 126.06 ft below land-surface datum, May 10, 1973; lowest water level, 139.51 ft below land-surface datum, Sept. 6, 2003.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	135.18	DEC 21	135.69	FEB 08	136.11	APR 18	136.60	JUN 10	136.52	AUG 04	138.46
NOV 23	135.46	JAN 07	135.87	MAR 08	136.21	MAY 10	136.27	JUL 01	137.36	SEP 06	139.51
WATER YEAR 2003		HIGHEST	135.18	OCT 12, 2002	LOWEST	139.51	SEP 06, 2003				

## WAUPACA COUNTY

441545088522901. Local number, WP-21/13E/25-0002.

LOCATION.--Lat 44°15'45", long 88°52'29", Hydrologic Unit 04030202. Owner: Village of Fremont.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in., depth 205 ft, cased to 109 ft, open end.

INSTRUMENTATION.--Water level measured weekly by observer.

DATUM.--Elevation of land-surface datum is 764 ft above sea level. Measuring point: hole in cap, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--August 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.65 ft below land-surface datum, Apr. 7, 1979; lowest water level measured, 17.45 ft below land-surface datum, May 12, 1997.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	13.99	JAN 31	14.20	APR 04	13.31	AUG 29	13.90
DEC 31	14.11	FEB 28	14.29	MAY 02	13.09		
WATER YEAR 2003		HIGHEST	13.09	MAY 02, 2003	LOWEST	14.29	FEB 28, 2003

GROUND-WATER LEVELS

WAUSHARA COUNTY

440713089320801. Local number, WS-19/08E/15-0008.

LOCATION.--Lat 44°07'13", long 89°32'08", Hydrologic Unit 07070003. Owner: University of Wisconsin Experiment Farm, Hancock.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in., depth 18 ft, cased to 18 ft.

INSTRUMENTATION.--Continuous water-level recorder.

DATUM.--Elevation of land-surface datum is 1,080 ft above sea level. Measuring point: top of casing, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--May 1951 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.88 ft below land-surface datum, July 5, 1973; lowest water level, 15.34 ft below land-surface datum, Apr. 25, 1959.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.46	9.79	10.13	10.51	10.91	11.27	11.59	11.79	11.36	11.89	12.48	13.13
10	9.50	9.84	10.19	10.57	10.97	11.33	11.63	11.80	11.32	11.96	12.58	13.24
15	9.56	9.92	10.25	10.64	11.05	11.37	11.67	11.55	11.39	11.98	12.72	13.25
20	9.62	9.96	10.28	10.70	11.10	11.37	11.71	11.30	11.58	12.12	12.82	13.29
25	9.66	10.03	10.37	10.76	11.17	---	11.75	11.18	11.70	12.26	12.90	13.33
EOM	9.75	10.08	10.44	10.84	11.21	11.53	11.77	11.26	11.74	12.36	13.00	13.35

WATER YEAR 2003 HIGHEST 9.43 OCT 01, 2002 LOWEST 13.35 SEP 29 AND 30, 2003

WINNEBAGO COUNTY

440122088324601. Local number, WI-18/16E/23-0006.

LOCATION.--Lat 44°01'22", long 88°2'46", Hydrologic Unit 04030201. Owner: City of Oshkosh.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in., depth 200 ft.

INSTRUMENTATION.--Water level measured monthly by observer.

DATUM.--Elevation of land-surface datum is 765 ft above sea level. Measuring point: top of 1-in. pipe, at land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--August 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.65 ft below land-surface datum, Apr. 28, 1993; lowest water level measured, 45.13 ft below land-surface datum, Jan. 1, 1966.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	21.42	NOV 26	21.92	DEC 20	21.03	JAN 23	22.78	FEB 28	22.35	MAR 25	22.65

WATER YEAR 2003 HIGHEST 21.03 DEC 20, 2002 LOWEST 22.78 JAN 23, 2003



## GROUND-WATER QUALITY

Data for the following sites represent ground-water samples collected as part of a major aquifer study conducted in the Western Lake Michigan Drainages study unit of the National Water-Quality Assessment (NAWQA) Program. Major aquifer study samples were collected from domestic and institutional wells in the glacial aquifer in Wisconsin and Michigan. Samples collected in Michigan are identified by County and State.

Analytical results from samples identified with an asterisk (\*) indicate that this sample likely passed through a cation-exchange water softener. Because of this, measured cation concentrations from these samples are not expected to be representative of ambient ground water from this aquifer, and therefore are not reported.

GEOLOGICAL UNIT.--100SDGV, sand and gravel (glacial) aquifer, consists of unconsolidated deposits of the Quaternary System.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Station number	Date	Time	Geologic unit	Depth of well, feet below LSD (72008)	Depth to water level, feet below LSD (72019)	Flow rate, instantaneous gal/min (00059)	Sampling method, code (82398)	Turbidity, NTU (00076)	Barometric pressure, mm Hg (00025)
COLUMBIA COUNTY										
CO-12/09E/11-0740	433136089235301	05-20-03	1000	100SDGV	134	31.24	--	4,040	0.06	740
FLORENCE COUNTY										
FC-38/15E/02-0095	454749088345301	05-27-03	1300	100SDGV	82	48.00	--	4,040	3.8	723
FOREST COUNTY										
FR-35/12E/11-0657	453149088570801	05-28-03	1700	100SDGV	81	6.00	--	4,040	1.2	715
FR-35/14E/02-0658	453247088425701	06-11-03	1400	100SDGV	65	48.00	5.0	4,040	0.66	733
FR-37/14E/01-0870	454258088411601	05-29-03	1200	100SDGV	83	40.00	--	4,040	8.9	717
GREEN LAKE COUNTY										
GL-17/12E/33-0105	435343089040601	05-21-03	1000	100SDGV	140	-5.75	--	4,040	0.05	747
LANGLADE COUNTY										
LA-33/13E/08-1319	452121088541301	05-28-03	1000	100SDGV	75	35.00	--	4,040	0.49	715
IRON COUNTY, MICHIGAN										
42N 33W 35ABB 01	460000088235501	06-24-03	1300	100SDGV	60	36.58	--	4,040	0.41	722
42N 31W 08BCD 01	460308088130601	06-24-03	0900	100SDGV	86	30.11	--	4,040	0.66	722
46N 32W 09BB 01	462416088191901	06-25-03	1700	100SDGV	60	--	--	4,040	2.7	711
MARATHON COUNTY										
MR-26/10E/23-1216	444302089144401	06-09-03	1500	100SDGV	49	16.00	5.0	4,040	0.67	730
MARINETTE COUNTY										
MT-33/21E/20-0258	451854087545501	06-23-03	1100	100SDGV	106	26.72	--	4,040	1.1	731
MT-35/19E/15-0261	453021088055801	07-23-03	1600	100SDGV	82	--	--	4,040	0.46	735
MT-37/20E/08-0259	454107088011001	06-23-03	1500	100SDGV	48	24.12	--	4,040	0.14	729
MARQUETTE COUNTY										
MQ-17/10E/28-0121	435453089184701	05-20-03	1400	100SDGV	137	-1.20	--	4,040	9.9	--
MENOMINEE COUNTY										
*ME-28/16E/19-0239	445358088352801	06-11-03	1000	100SDGV	40	16.00	4.0	4,040	0.15	729
OCONTO COUNTY										
OC-31/18E/26-0235	450755088125301	07-23-03	1100	100SDGV	64	--	--	4,040	0.29	744
OC-33/15E/34-0234	451805088363101	08-03-03	1100	100SDGV	105	65.13	--	4,040	12	722

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bromide water, fltrd, mg/L (71870)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	0.1	8.1	397	10.7	36.0	27.9	0.93	3.06	202	0.02
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	0.1	7.9	283	7.9	36.7	14.1	1.30	2.21	192	<0.02
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	10.2	8.0	420	8.4	46.3	23.1	0.64	2.29	219	E.02
FR-35/14E/02-0658	06-11-03	8.3	8.2	214	9.9	21.2	9.81	0.85	4.77	65	0.02
FR-37/14E/01-0870	05-29-03	2.7	7.5	301	7.3	32.7	15.5	0.94	1.78	169	<0.02
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	0.2	7.7	533	10.3	61.7	33.5	1.81	2.25	376	0.03
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	2.7	7.9	318	9.1	31.2	16.6	0.66	3.85	169	E.01
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	10.0	7.8	298	8.9	33.5	17.7	0.64	1.63	136	0.02
42N 31W 08BCD 01	06-24-03	0.1	8.5	201	7.9	22.4	11.0	1.11	2.08	90	E.01
46N 32W 09BB 01	06-25-03	0.1	8.5	221	6.7	28.2	8.80	2.15	2.08	99	E.02
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	2.8	7.6	566	9.2	64.6	29.2	1.65	5.61	237	0.02
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	0.1	8.3	391	8.7	26.9	27.4	1.88	4.98	209	0.02
MT-35/19E/15-0261	07-23-03	0.2	9.1	213	8.8	25.0	11.7	1.56	2.34	116	0.02
MT-37/20E/08-0259	06-23-03	8.0	8.2	246	8.4	28.9	8.66	0.76	1.87	112	E.01
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	3.8	7.9	329	10.2	36.2	20.1	0.70	1.58	169	E.01
MENOMINEE COUNTY											
*ME-28/16E/19-0239	06-11-03	1.0	7.9	275	9.7					134	0.02
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	0.2	8.4	518	11.0	70.3	29.7	0.95	3.11	269	0.10
OC-33/15E/34-0234	08-03-03	6.0	7.8	317	9.6	39.4	18.5	5.68	2.45	160	0.03

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	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)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	3.08	<0.2	17.0	17.8	226	E.07	E.02	0.08	<0.008	E.02
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	0.71	<0.2	17.7	<0.2	161	0.22	0.13	<0.06	<0.008	E.02
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	1.76	<0.2	13.5	7.6	235	<0.10	<0.04	1.16	<0.008	0.02
FR-35/14E/02-0658	06-11-03	13.5	<0.2	15.7	6.5	124	E.08	<0.04	3.71	<0.008	<0.02
FR-37/14E/01-0870	05-29-03	1.45	<0.2	16.5	<0.2	171	0.79	0.57	<0.06	<0.008	0.03
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	0.89	<0.2	13.5	13.6	305	<0.10	<0.04	<0.06	E.004	<0.02
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	5.15	<0.2	14.1	9.9	175	<0.10	<0.04	1.08	<0.008	E.01
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	9.23	<0.2	12.0	5.7	174	<0.10	<0.04	0.83	<0.008	<0.02
42N 31W 08BCD 01	06-24-03	0.41	<0.2	10.3	9.8	107	E.05	E.04	<0.06	<0.008	E.01
46N 32W 09BB 01	06-25-03	0.90	<0.2	12.6	12.9	122	0.11	<0.04	<0.06	E.004	<0.02
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	16.0	0.4	14.5	22.2	295	E.09	<0.04	7.97	<0.008	<0.02
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	0.98	<0.2	16.1	9.2	220	<0.10	<0.04	<0.06	<0.008	E.01
MT-35/19E/15-0261	07-23-03	1.07	<0.2	16.0	5.6	<10	E.06	E.03	<0.06	<0.008	E.01
MT-37/20E/08-0259	06-23-03	3.48	<0.2	9.11	9.8	146	<0.10	<0.04	0.07	<0.008	<0.02
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	1.61	<0.2	13.2	6.8	184	<0.10	<0.04	1.27	<0.008	E.01
MENOMINEE COUNTY											
*ME-28/16E/19-0239	06-11-03	3.71	<0.2	13.3	11.3	172			0.09	<0.008	<0.02
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	3.57	<0.2	22.6	15.1	311	0.35	0.25	<0.06	<0.008	<0.02
OC-33/15E/34-0234	08-03-03	5.26	<0.2	15.1	6.5	184	<0.10	<0.04	0.19	<0.008	<0.02

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Organic carbon, water, fltrd, mg/L (00681)	Colipge F-spec, FAMP, 2-step, pres(1) abs(2) /L (99335)	Colipge som, Ec CN13hst 2-step, pres(1) abs(2) /L (99332)	E coli, MI MF, water, col/ 100 mL (90901)	Total coli-form, MI MF, water, col/ 100 mL (90900)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	E.3	2	2	<1	<1	<2	<0.30	5.6	53	<0.06
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	3.5	2	2	<1	<1	<2	<0.30	23.1	40	<0.06
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	0.6	2	2	<1	<1	M	<0.30	0.8	7	<0.06
FR-35/14E/02-0658	06-11-03	0.5	2	2	<1	<1	E1	<0.30	<0.3	7	<0.06
FR-37/14E/01-0870	05-29-03	2.6	2	2	<1	<1	<2	<0.30	4.5	31	<0.06
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	E.2	2	2	<1	<1	<2	<0.30	0.9	159	<0.06
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	0.8	2	2	<1	<1	<2	<0.30	E.2	7	<0.06
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	0.6	2	2	<1	<1	E1	<0.30	E.2	4	<0.06
42N 31W 08BCD 01	06-24-03	0.6	2	2	<1	<1	<2	<0.30	<0.3	17	<0.06
46N 32W 09BB 01	06-25-03	0.3	2	2	<1	<1	E1	<0.30	4.1	11	<0.06
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	0.8	2	2	<1	<1	<2	<0.30	E.2	23	<0.06
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	1.1	2	2	<1	<1	<2	<0.30	2.7	48	<0.06
MT-35/19E/15-0261	07-23-03	0.4	2	2	<1	<1	<2	<0.30	5.7	37	<0.06
MT-37/20E/08-0259	06-23-03	0.6	2	2	<1	<1	E2	<0.30	15.1	3	<0.06
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	E.2	2	2	<1	<1	<2	<0.30	E.2	63	<0.06
MENOMINEE COUNTY											
*ME-28/16E/19-0239	06-11-03	0.7	2	2	<1	E1					
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	1.4	2	2	<1	<1	<2	<0.30	1.2	39	<0.06
OC-33/15E/34-0234	08-03-03	0.6	2	2	<1	<1	<2	<0.30	1.1	16	<0.06

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Hydro-gen sulfide water unfltrd mg/L (71875)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	10	<0.04	<0.8	0.210	1.1	ND	29	<0.08	2.0	25.0
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	12	<0.04	<0.8	0.095	<0.2	M.0	983	0.09	4.6	382
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	E5	<0.04	1.2	0.100	2.0	ND	<8	0.08	1.3	E.1
FR-35/14E/02-0658	06-11-03	13	<0.04	1.2	0.082	15.4	ND	39	<0.08	1.2	8.8
FR-37/14E/01-0870	05-29-03	14	<0.04	<0.8	0.084	<0.2	M.0	2,370	<0.08	2.5	373
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	17	<0.04	<0.8	0.438	E.2	M.0	1,950	<0.08	2.0	77.2
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	9	<0.04	<0.8	0.075	2.7	ND	E8	0.14	1.1	0.6
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	9	<0.04	1.0	0.067	5.5	ND	<8	1.18	0.9	1.7
42N 31W 08BCD 01	06-24-03	28	<0.04	E.4	0.045	E.1	ND	263	E.07	2.9	24.3
46N 32W 09BB 01	06-25-03	8	<0.04	<0.8	0.073	0.4	ND	156	<0.08	3.2	10.7
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	18	<0.04	E.4	0.136	14.7	ND	16	0.28	2.5	3.0
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	22	<0.04	<0.8	0.533	0.5	ND	84	E.06	5.4	11.9
MT-35/19E/15-0261	07-23-03	11	<0.04	<0.8	0.053	<0.2	ND	97	<0.08	1.9	27.5
MT-37/20E/08-0259	06-23-03	E5	<0.04	E.6	0.074	0.8	ND	<8	E.05	0.9	<0.2
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	E7	<0.04	1.2	0.086	14.7	ND	<10	<0.08	1.2	4.8
MENOMINEE COUNTY											
*ME-28/16E/19-0239	06-11-03						ND				
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	12	<0.04	<0.8	0.216	E.2	M.0	967	<0.08	2.5	27.3
OC-33/15E/34-0234	08-03-03	19	<0.04	1.1	0.101	7.2	ND	<8	0.17	1.9	2.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Molybdenum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Strontium, water, fltrd, ug/L (01080)	Thallium, water, fltrd, ug/L (01057)	Vanadium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	0.6	1.78	<0.5	<0.2	66.9	<0.04	0.3	3	<0.006	E.059
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	1.3	1.52	<0.5	<0.2	61.8	<0.04	2.2	10	<0.006	<0.006
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.3	1.61	<0.5	<0.2	42.2	<0.04	3.8	1	<0.006	E.003
FR-35/14E/02-0658	06-11-03	<0.3	0.81	<0.5	<0.2	32.9	<0.04	0.4	9	<0.006	<0.006
FR-37/14E/01-0870	05-29-03	E.3	1.09	<0.5	<0.2	42.6	<0.04	1.9	4	<0.006	<0.006
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	0.3	2.58	<0.5	E.2	650	<0.04	0.2	<1	<0.006	<0.006
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.3	1.09	<0.5	<0.2	40.2	<0.04	2.8	24	<0.006	E.004
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.3	1.05	<0.5	<0.2	28.9	<0.04	1.3	2	<0.006	<0.006
42N 31W 08BCD 01	06-24-03	1.3	0.82	<0.5	<0.2	127	<0.04	0.4	5	<0.006	<0.006
46N 32W 09BB 01	06-25-03	1.2	1.27	<0.5	<0.2	37.4	<0.04	0.4	2	<0.006	<0.006
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	0.8	2.11	<0.5	<0.2	71.1	<0.04	0.9	3	<0.006	E.035
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	0.5	1.10	<0.5	<0.2	197	<0.04	3.1	3	<0.006	<0.006
MT-35/19E/15-0261	07-23-03	0.7	0.71	<0.5	<0.2	62.7	<0.04	0.5	<1	<0.006	<0.006
MT-37/20E/08-0259	06-23-03	<0.3	1.05	E.3	<0.2	22.9	<0.04	3.7	6	<0.006	<0.006
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	0.4	1.62	E.3	<0.2	37.4	<0.04	0.6	7	<0.006	<0.006
MENOMINEE COUNTY											
*ME-28/16E/19-0239	06-11-03									<0.006	<0.006
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	0.4	2.10	<0.5	<0.2	72.8	<0.04	0.8	2	<0.006	<0.006
OC-33/15E/34-0234	08-03-03	0.6	1.28	<0.5	<0.2	26.6	<0.04	2.3	4	<0.006	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.006	<0.004	<0.005	95.4	E.004	<0.050	<0.010	<0.002	<0.041	<0.020
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.006	<0.004	<0.005	91.4	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.006	<0.004	<0.005	88.4	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
FR-35/14E/02-0658	06-11-03	<0.006	<0.004	<0.005	86.9	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
FR-37/14E/01-0870	05-29-03	<0.006	<0.004	<0.005	86.4	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.006	<0.004	<0.005	91.9	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.006	<0.004	<0.005	90.5	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.006	<0.004	<0.005	94.5	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
42N 31W 08BCD 01	06-24-03	<0.006	<0.004	<0.005	89.9	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
46N 32W 09BB 01	06-25-03	<0.006	<0.004	<0.005	85.2	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.006	<0.004	<0.005	104	0.040	<0.050	<0.010	<0.002	<0.041	<0.020
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.006	<0.004	<0.005	90.1	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
MT-35/19E/15-0261	07-23-03	<0.006	<0.004	<0.005	96.2	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
MT-37/20E/08-0259	06-23-03	<0.006	<0.004	<0.005	82.5	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.006	<0.004	<0.005	96.2	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.006	<0.004	<0.005	88.8	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.006	<0.004	<0.005	100	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
OC-33/15E/34-0234	08-03-03	<0.006	<0.004	<0.005	104	E.003	<0.050	<0.010	<0.002	<0.041	<0.020

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd, 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd, 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diazinon-d10 surrog. wat flt 0.7u GF percent recovry (91063)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd, 0.7u GF ug/L (82677)	EPTC, water, fltrd, 0.7u GF ug/L (82668)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	102	<0.005	<0.02	<0.002
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	111	<0.005	<0.02	<0.002
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	95.3	<0.005	<0.02	<0.002
FR-35/14E/02-0658	06-11-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	101	<0.005	<0.02	<0.002
FR-37/14E/01-0870	05-29-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	106	<0.005	<0.02	<0.002
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	102	<0.005	<0.02	<0.002
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	98.1	<0.005	<0.02	<0.002
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	94.5	<0.005	<0.02	<0.002
42N 31W 08BCD 01	06-24-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	92.8	<0.005	<0.02	<0.002
46N 32W 09BB 01	06-25-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	90.3	<0.005	<0.02	<0.002
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	118	<0.005	<0.02	<0.002
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	120	<0.005	<0.02	<0.002
MT-35/19E/15-0261	07-23-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	105	<0.005	<0.02	<0.002
MT-37/20E/08-0259	06-23-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	119	<0.005	<0.02	<0.002
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	105	<0.005	<0.02	<0.002
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	101	<0.005	<0.02	<0.002
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	112	<0.005	<0.02	<0.002
OC-33/15E/34-0234	08-03-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	119	<0.005	<0.02	<0.002



## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Ethal-fluralin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
FR-35/14E/02-0658	06-11-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
FR-37/14E/01-0870	05-29-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
42N 31W 08BCD 01	06-24-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
46N 32W 09BB 01	06-25-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
MT-35/19E/15-0261	07-23-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
MT-37/20E/08-0259	06-23-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
OC-33/15E/34-0234	08-03-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Methyl parathion, water, fltrd 0.7u GF (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF (82671)	Napropamide, water, fltrd 0.7u GF (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF (82669)	Pendimethalin, water, fltrd 0.7u GF (82683)	Phorate water fltrd 0.7u GF (82664)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
FR-35/14E/02-0658	06-11-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
FR-37/14E/01-0870	05-29-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
42N 31W 08BCD 01	06-24-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
46N 32W 09BB 01	06-25-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.006	E.004	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MT-35/19E/15-0261	07-23-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MT-37/20E/08-0259	06-23-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
OC-33/15E/34-0234	08-03-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Prometon, water, fltrd, ug/L (04037)	Pronamide, water, fltrd, 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd, 0.7u GF ug/L (82679)	Propargite, water, fltrd, 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron, water, fltrd, 0.7u GF ug/L (82670)	Terbacil, water, fltrd, 0.7u GF ug/L (82665)	Terbufos, water, fltrd, 0.7u GF ug/L (82675)	Thio-bencarb, water, fltrd, 0.7u GF ug/L (82681)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
FR-35/14E/02-0658	06-11-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
FR-37/14E/01-0870	05-29-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
42N 31W 08BCD 01	06-24-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
46N 32W 09BB 01	06-25-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
MT-35/19E/15-0261	07-23-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
MT-37/20E/08-0259	06-23-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
OC-33/15E/34-0234	08-03-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	1,1,1,2 -Tetra- chloro- ethane, water, unfltrd ug/L (77562)	1,1,1- Tri- chloro- ethane, water, unfltrd ug/L (34506)	1,1,2,2 -Tetra- chloro- ethane, water, unfltrd ug/L (34516)	CFC-113 water unfltrd ug/L (77652)	1,1,2- Tri- chloro- ethane, water, unfltrd ug/L (34511)	1,1-Di- chloro- ethane, water, unfltrd ug/L (34496)	1,1-Di- chloro- ethene, water, unfltrd ug/L (34501)	1,1-Di- chloro- propene water unfltrd ug/L (77168)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.002	<0.009	<0.03	E.02	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
FR-35/14E/02-0658	06-11-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
FR-37/14E/01-0870	05-29-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
42N 31W 08BCD 01	06-24-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
46N 32W 09BB 01	06-25-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
MT-35/19E/15-0261	07-23-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
MT-37/20E/08-0259	06-23-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
OC-33/15E/34-0234	08-03-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	1,2,3,4 Tetra- methyl- benzene water unfltrd ug/L (49999)	1,2,3,5 Tetra- methyl- benzene water unfltrd ug/L (50000)	1,2,3- Tri- chloro- benzene water unfltrd ug/L (77613)	1,2,3- Tri- chloro- propane water unfltrd ug/L (77443)	1,2,3- Tri- methyl- benzene water unfltrd ug/L (77221)	1,2,4- Tri- chloro- benzene water unfltrd ug/L (34551)	1,2,4- Tri- methyl- benzene water unfltrd ug/L (77222)	Dibromo- chloro- propane water unfltrd ug/L (82625)	1,2-Di- bromo- ethane, water, unfltrd ug/L (77651)	1,2-Di- chloro- benzene water unfltrd ug/L (34536)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
FR-35/14E/02-0658	06-11-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
FR-37/14E/01-0870	05-29-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	E.05	<0.5	<0.04	<0.03
42N 31W 08BCD 01	06-24-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
46N 32W 09BB 01	06-25-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	E.06	<0.5	<0.04	<0.03
MT-35/19E/15-0261	07-23-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
MT-37/20E/08-0259	06-23-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
OC-33/15E/34-0234	08-03-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	E.09	<0.5	<0.04	<0.03

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-ethane-d4, sur Sch2090 wat unf pct rcv (99832)	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3,5-Tri-methyl-benzene water unfltrd ug/L (77226)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,3-Di-chloro-propane water unfltrd ug/L (77173)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	14Bromo fluoro-benzene surrog. VOC Sch wat unf pct rcv (99834)	2,2-Di-chloro-propane water unfltrd ug/L (77170)	2-Chloro-toluene water unfltrd ug/L (77275)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.1	101	<0.03	<0.04	<0.03	<0.1	<0.05	86.4	<0.05	<0.04
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.1	103	<0.03	<0.04	<0.03	<0.1	<0.05	82.7	<0.05	<0.04
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.1	103	<0.03	<0.04	<0.03	<0.1	<0.05	81.6	<0.05	<0.04
FR-35/14E/02-0658	06-11-03	<0.1	111	<0.03	<0.04	<0.03	<0.1	<0.05	95.9	<0.05	<0.04
FR-37/14E/01-0870	05-29-03	<0.1	102	<0.03	<0.04	<0.03	<0.1	<0.05	77.6	<0.05	<0.04
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.1	109	<0.03	<0.04	<0.03	<0.1	<0.05	81.5	<0.05	<0.04
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.1	106	<0.03	<0.04	<0.03	<0.1	<0.05	81.7	<0.05	<0.04
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.1	123	<0.03	<0.04	<0.03	<0.1	<0.05	108	<0.05	<0.04
42N 31W 08BCD 01	06-24-03	<0.1	126	<0.03	<0.04	<0.03	<0.1	<0.05	108	<0.05	<0.04
46N 32W 09BB 01	06-25-03	<0.1	138	<0.03	<0.04	<0.03	<0.1	<0.05	72.4	<0.05	<0.04
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.1	112	<0.03	<0.04	<0.03	<0.1	<0.05	89.7	<0.05	<0.04
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.1	112	<0.03	<0.04	<0.03	<0.1	<0.05	106	<0.05	<0.04
MT-35/19E/15-0261	07-23-03	<0.1	114	<0.03	<0.04	<0.03	<0.1	<0.05	76.3	<0.05	<0.04
MT-37/20E/08-0259	06-23-03	<0.1	117	<0.03	<0.04	<0.03	<0.1	<0.05	109	<0.05	<0.04
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.1	102	<0.03	<0.04	<0.03	<0.1	<0.05	87.5	<0.05	<0.04
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.1	111	<0.03	<0.04	<0.03	<0.1	<0.05	95.5	<0.05	<0.04
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.1	113	<0.03	<0.04	<0.03	<0.1	<0.05	76.1	<0.05	<0.04
OC-33/15E/34-0234	08-03-03	<0.1	106	<0.03	<0.04	<0.03	<0.1	<0.05	83.0	<0.05	<0.04

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	2-Ethyl-toluene water unfltrd ug/L (77220)	3-Chloro-propene water unfltrd ug/L (78109)	4-Chloro-toluene water unfltrd ug/L (77277)	4-Iso-propyl-toluene water unfltrd ug/L (77356)	Acetone water unfltrd ug/L (81552)	Acrylo-nitrile water unfltrd ug/L (34215)	Benzene water unfltrd ug/L (34030)	Bromo-benzene water unfltrd ug/L (81555)	Bromo-chloro-methane water unfltrd ug/L (77297)	Bromo-di-chloro-methane water unfltrd ug/L (32101)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
FR-35/14E/02-0658	06-11-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
FR-37/14E/01-0870	05-29-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
42N 31W 08BCD 01	06-24-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
46N 32W 09BB 01	06-25-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
MT-35/19E/15-0261	07-23-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
MT-37/20E/08-0259	06-23-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
OC-33/15E/34-0234	08-03-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Bromo-ethene, water, unfltrd ug/L (50002)	Bromo-methane water unfltrd ug/L (34413)	Carbon di-sulfide water unfltrd ug/L (77041)	Chloro-benzene water unfltrd ug/L (34301)	Chloro-ethane, water, unfltrd ug/L (34311)	Chloro-methane water unfltrd ug/L (34418)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	cis-1,3-Di-chloro-propene water unfltrd ug/L (34704)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-bromo-methane water unfltrd ug/L (30217)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
FR-35/14E/02-0658	06-11-03	<0.1	<0.3	E.02	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
FR-37/14E/01-0870	05-29-03	<0.1	<0.3	E.03	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
42N 31W 08BCD 01	06-24-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
46N 32W 09BB 01	06-25-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
MT-35/19E/15-0261	07-23-03	<0.1	<0.3	0.16	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
MT-37/20E/08-0259	06-23-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
OC-33/15E/34-0234	08-03-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05



## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl methac-rylate, water, unfltrd ug/L (73570)	Ethyl methyl ketone, water, unfltrd ug/L (81595)	Ethyl-benzene water unfltrd ug/L (34371)	Hexa-chloro-buta-diene, water, unfltrd ug/L (39702)	Hexa-chloro-ethane, water, unfltrd ug/L (34396)	Iodo-methane water unfltrd ug/L (77424)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
FR-35/14E/02-0658	06-11-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
FR-37/14E/01-0870	05-29-03	<0.18	<0.2	<0.2	E.04	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
42N 31W 08BCD 01	06-24-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
46N 32W 09BB 01	06-25-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
MT-35/19E/15-0261	07-23-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
MT-37/20E/08-0259	06-23-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
OC-33/15E/34-0234	08-03-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Iso-butyl methyl ketone, water, unfltrd ug/L (78133)	Iso-propyl-benzene water unfltrd ug/L (77223)	Methyl acrylo-nitrile water unfltrd ug/L (81593)	Methyl acrylate, water, unfltrd ug/L (49991)	Methyl methacrylate, water, unfltrd ug/L (81597)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	Naphthalene, water, unfltrd ug/L (34696)	Methyl n-butyl ketone, water, unfltrd ug/L (77103)	n-Butyl benzene water unfltrd ug/L (77342)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
FR-35/14E/02-0658	06-11-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
FR-37/14E/01-0870	05-29-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
42N 31W 08BCD 01	06-24-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
46N 32W 09BB 01	06-25-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
MT-35/19E/15-0261	07-23-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
MT-37/20E/08-0259	06-23-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
OC-33/15E/34-0234	08-03-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	n-propyl-benzene water unfltrd ug/L (77224)	o-Xylene, water, unfltrd ug/L (77135)	sec-Butyl-benzene water unfltrd ug/L (77350)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	tert-Butyl-benzene water unfltrd ug/L (77353)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Tetra-hydro-furan, water, unfltrd ug/L (81607)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.04	<0.07	<0.06	<0.04	<0.05	E.1	<0.10	<0.03	<0.06	<2
FR-35/14E/02-0658	06-11-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	E.01	<0.06	<2
FR-37/14E/01-0870	05-29-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
42N 31W 08BCD 01	06-24-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
46N 32W 09BB 01	06-25-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
MT-35/19E/15-0261	07-23-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
MT-37/20E/08-0259	06-23-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
OC-33/15E/34-0234	08-03-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Toluene water unfltrd ug/L (34010)	Toluene -d8, surrog, Sch2090 wat unf percent recovry (99833)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	trans-1,3-Di-chloro-propene water unfltrd ug/L (34699)	trans-1,4-Di-chloro-2-butene, wat unf ug/L (73547)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
COLUMBIA COUNTY											
CO-12/09E/11-0740	05-20-03	<0.05	97.3	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
FLORENCE COUNTY											
FC-38/15E/02-0095	05-27-03	<0.05	95.1	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
FOREST COUNTY											
FR-35/12E/11-0657	05-28-03	<0.05	94.5	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
FR-35/14E/02-0658	06-11-03	<0.05	96.2	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
FR-37/14E/01-0870	05-29-03	<0.05	90.5	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
GREEN LAKE COUNTY											
GL-17/12E/33-0105	05-21-03	<0.05	93.2	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
LANGLADE COUNTY											
LA-33/13E/08-1319	05-28-03	<0.05	93.7	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
IRON COUNTY, MICHIGAN											
42N 33W 35ABB 01	06-24-03	<0.05	102	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
42N 31W 08BCD 01	06-24-03	<0.05	102	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
46N 32W 09BB 01	06-25-03	<0.05	98.7	<0.03	<0.09	<0.7	<0.10	<0.04	E.09	<0.02	<0.1
MARATHON COUNTY											
MR-26/10E/23-1216	06-09-03	<0.05	98.5	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
MARINETTE COUNTY											
MT-33/21E/20-0258	06-23-03	E.01	99.4	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
MT-35/19E/15-0261	07-23-03	<0.05	97.9	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
MT-37/20E/08-0259	06-23-03	<0.05	101	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
MARQUETTE COUNTY											
MQ-17/10E/28-0121	05-20-03	<0.05	96.9	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
MENOMINEE COUNTY											
ME-28/16E/19-0239	06-11-03	<0.05	97.6	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
OCONTO COUNTY											
OC-31/18E/26-0235	07-23-03	<0.05	98.0	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
OC-33/15E/34-0234	08-03-03	<0.05	98.9	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Ra-226, water, fltrd, radon method pCi/L (09511)	Ra-228, water, fltrd, pCi/L (81366)	Rn-222 2-sigma water unfltrd pCi/L (76002)	Rn-222, water, unfltrd pCi/L (82303)	Tritium 2-sigma water unfltrd pCi/L (75985)	Tritium water unfltrd pCi/L (07000)	Uranium natural water, fltrd, ug/L (22703)	Number of TICS from VOC by GCMS number (99871)
COLUMBIA COUNTY									
CO-12/09E/11-0740	05-20-03	0.03	M	22	310	--	--	0.06	1
FLORENCE COUNTY									
FC-38/15E/02-0095	05-27-03	0.19	M	35	980	--	--	0.05	0.0
FOREST COUNTY									
FR-35/12E/11-0657	05-28-03	0.02	M	40	1,340	--	--	0.50	0.0
FR-35/14E/02-0658	06-11-03	M	M	19	140	--	--	E.01	0.0
FR-37/14E/01-0870	05-29-03	0.08	M	22	170	--	--	E.01	0.0
GREEN LAKE COUNTY									
GL-17/12E/33-0105	05-21-03	0.26	M	21	230	--	--	1.11	0.0
LANGLADE COUNTY									
LA-33/13E/08-1319	05-28-03	M	M	24	260	2.6	42	0.25	0.0
IRON COUNTY									
42N 33W 35ABB 01	06-24-03	0.02	1	--	190	--	--	0.12	0.0
42N 31W 08BCD 01	06-24-03	0.08	1	23	210	2.6	44	E.01	0.0
46N 32W 09BB 01	06-25-03	0.10	M	23	280	--	--	0.51	0.0
MARATHON COUNTY									
MR-26/10E/23-1216	06-09-03	0.03	M	33	1,120	1.9	36	1.58	0.0
MARINETTE COUNTY									
MT-33/21E/20-0258	06-23-03	0.57	1	29	770	1.0	M	1.90	0.0
MT-35/19E/15-0261	07-23-03	0.10	M	20	160	--	--	0.06	0.0
MT-37/20E/08-0259	06-23-03	0.01	1	--	420	--	--	0.13	0.0
MARQUETTE COUNTY									
MQ-17/10E/28-0121	05-20-03	0.04	M	19	150	1.0	5	0.46	0.0
MENOMINEE COUNTY									
*ME-28/16E/19-0239	06-11-03			21	270	--	--	0.10	0.0
OCONTO COUNTY									
OC-31/18E/26-0235	07-23-03	0.18	M	19	130	--	--	0.08	0.0
OC-33/15E/34-0234	08-03-03	0.04	M	24	320	--	--	0.49	0.0

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Station number	Date	Time	Geologic unit	Depth of well, feet below LSD (72008)	Depth to water level, feet below LSD (72019)	Flow rate, instantaneous gal/min (00059)	Sampling method, code (82398)	Turbidity, NTU (00076)	Barometric pressure, mm Hg (00025)
OZAUKEE COUNTY										
OZ-12/21E/05-0582	433215088010001	05-22-03	1400	100SDGV	93	9.12	--	4,040	0.24	--
PORTAGE COUNTY										
PT-22/10E/36-1434	442008089135201	07-29-03	1500	100SDGV	118	--	--	4,040	0.59	732
SHAWANO COUNTY										
SH-25/16E/14-0231	443810088311601	06-12-03	1100	100SDGV	240	35.00	10.0	4,040	77	716
SH-28/13E/26-0232	445220088535601	06-09-03	1100	100SDGV	61	--	--	4,040	0.10	730
VILAS COUNTY										
VI-41/12E/33-0095	455919089003201	07-24-03	1100	100SDGV	45	--	--	4,040	4.1	716
WASHINGTON COUNTY										
WN-10/19E/13-0997	431953088113701	05-22-03	1000	100SDGV	94	31.96	--	4,040	0.93	747
WAUPACA COUNTY										
WP-23/14E/25-0831	442556088443501	06-10-03	1500	100SDGV	84	16.00	10.0	4,040	0.26	727
WAUSHARA COUNTY										
WS-18/10E/15-1055	440157089180501	06-05-03	1100	100SDGV	67	3.58	--	4,040	0.73	--
WS-18/13E/11-1056	440240088544101	05-21-03	1300	100SDGV	145	1.95	--	4,040	1.4	--
*WS-20/11E/03-1054	441357089101801	06-10-03	1100	100SDGV	82	10.00	5.0	4,040	0.10	727
MARQUETTE COUNTY, MICHIGAN										
45N 30W 20ADA 01	461703088043901	06-26-03	1100	100SDGV	67	--	--	4,040	0.51	712
45N 24W 16CBC 01	461739087192201	06-25-03	1100	100SDGV	41	9.65	--	4,040	0.48	726

Local identifier	Date	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bromide water, fltrd, mg/L (71870)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	0.1	7.8	698	9.7	78.4	42.5	1.26	3.82	426	0.04
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	7.3	7.2	449	10.5	56.1	28.4	0.91	2.27	234	0.02
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	0.2	8.8	291	10.7	16.4	13.3	1.09	27.0	150	0.02
SH-28/13E/26-0232	06-09-03	5.3	7.2	661	11.3	77.9	39.2	1.43	3.12	327	0.02
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	9.0	6.4	57	8.1	25.1	4.85	1.48	4.41	20	<0.02
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	0.1	7.7	1,040	10.0	95.3	52.1	1.42	37.1	449	0.04
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	0.2	7.9	615	10.3	67.3	38.2	1.91	3.82	280	0.03
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	2.1	7.9	349	13.5	39.9	21.4	0.50	1.53	169	0.02
WS-18/13E/11-1056	05-21-03	0.1	8.1	422	10.6	24.9	30.6	1.66	20.8	233	0.02
*WS-20/11E/03-1054	06-10-03	1.6	7.7	465	10.1					224	0.02
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	2.1	7.8	376	7.4	41.8	21.1	1.81	0.99	185	<0.02
45N 24W 16CBC 01	06-25-03	4.7	8.8	136	8.4	21.4	2.74	1.27	1.08	60	E.01

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	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)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	14.5	<0.2	16.3	57.9	436	E.06	E.03	<0.06	<0.008	<0.02
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	3.52	<0.2	15.1	11.6	252	<0.10	<0.04	1.55	<0.008	<0.02
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	1.76	0.3	18.6	9.8	185	E.10	0.09	<0.06	<0.008	<0.02
SH-28/13E/26-0232	06-09-03	20.6	0.3	15.6	10.6	371	0.10	<0.04	4.30	<0.008	<0.02
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	0.29	<0.2	10.4	5.2	44	<0.10	<0.04	0.13	<0.008	<0.02
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	115	<0.2	20.6	41.2	611	0.32	0.26	<0.06	<0.008	<0.02
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	16.3	0.2	17.9	36.6	331	<0.10	<0.04	<0.06	<0.008	<0.02
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	1.40	<0.2	13.3	17.0	205	E.06	E.02	0.56	<0.008	--
WS-18/13E/11-1056	05-21-03	1.31	0.2	21.4	8.3	233	0.14	0.12	<0.06	<0.008	E.02
*WS-20/11E/03-1054	06-10-03	1.76	<0.2	13.2	27.5	288			0.76	<0.008	<0.02
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	1.67	<0.2	11.7	5.5	78	<0.10	<0.04	E.06	E.005	<0.02
45N 24W 16CBC 01	06-25-03	1.19	<0.2	9.83	14.6	199	<0.10	<0.04	<0.06	<0.008	E.01
Local identifier	Date	Organic carbon, water, fltrd, mg/L (00681)	Colipge F-spec, FAMP, 2-step, pres(1) abs(2) /L (99335)	Colipge som, Ec CN13hst 2-step, pres(1) abs(2) /L (99332)	E coli, MI MF, water, col/ 100 mL (90901)	Total coli-form, MI MF, water, col/ 100 mL (90900)	Alum-inum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryll-ium, water, fltrd, ug/L (01010)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	0.9	2	2	<1	<1	<2	<0.30	2.2	80	<0.06
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	0.5	2	2	<1	<1	<2	<0.30	E.1	13	<0.06
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	0.8	2	2	<1	<1	M	<0.30	4.6	83	<0.06
SH-28/13E/26-0232	06-09-03	1.1	2	2	<1	E38	<2	<0.30	0.4	21	<0.06
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	0.6	2	2	<1	<1	<2	<0.30	<0.3	M	<0.06
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	0.7	2	2	<1	<1	<2	<0.30	E.2	72	<0.06
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	0.6	2	2	<1	<1	<2	<0.30	0.8	31	<0.06
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	0.4	2	2	<1	E1	<2	<0.30	E.2	6	<0.06
WS-18/13E/11-1056	05-21-03	0.6	2	2	<1	<1	<2	<0.30	5.5	57	<0.06
*WS-20/11E/03-1054	06-10-03	0.7	2	2	<1	<1					
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	0.6	2	2	<1	<1	<2	<0.30	0.3	11	<0.06
45N 24W 16CBC 01	06-25-03	0.4	2	2	<1	<1	3	<0.30	<0.3	10	<0.06

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Hydro-gen sulfide water unfltrd mg/L (71875)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	10	<0.04	<0.8	0.433	0.4	M.0	899	<0.08	4.1	19.1
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	E7	<0.04	1.1	0.129	8.9	ND	<8	0.12	1.3	0.4
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	97	<0.04	<0.8	0.080	<0.2	M.0	189	<0.08	3.6	10.6
SH-28/13E/26-0232	06-09-03	22	E.02	1.5	0.185	21.4	ND	E4	5.01	2.9	0.3
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<7	<0.04	0.9	0.025	70.1	ND	<8	0.19	1.1	4.6
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	26	<0.04	<0.8	0.663	0.5	M.0	648	<0.08	4.8	57.4
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	12	<0.04	<0.8	0.290	0.6	M.0	641	<0.08	4.8	28.5
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<7	<0.04	<0.8	0.147	3.7	ND	38	<0.08	0.9	12.4
WS-18/13E/11-1056	05-21-03	84	<0.04	<0.8	0.300	E.2	M.0	358	E.06	4.8	19.3
*WS-20/11E/03-1054	06-10-03						ND				
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	9	<0.04	<0.8	0.093	1.2	ND	E4	<0.08	3.3	1.8
45N 24W 16CBC 01	06-25-03	8	<0.04	E.4	0.044	1.1	ND	10	<0.08	<0.5	0.7
										2,6-Di-ethyl-aniline water fltrd, ug/L (82660)	CIAT, water, fltrd, ug/L (04040)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	0.9	3.09	<0.5	<0.2	145	<0.04	0.1	4	<0.006	<0.006
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	0.4	2.36	<0.5	<0.2	37.3	<0.04	2.3	3	<0.006	E.013
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	5.0	0.80	<0.5	<0.2	229	<0.04	0.3	<1	<0.006	<0.006
SH-28/13E/26-0232	06-09-03	0.7	2.60	0.6	<0.2	56.7	<0.04	2.1	165	<0.006	E.018
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.3	0.56	<0.5	<0.2	18.6	<0.04	0.2	6	<0.006	<0.006
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	0.6	3.56	<0.5	<0.2	275	<0.04	0.1	6	<0.006	<0.006
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	1.1	1.75	<0.5	<0.2	67.3	<0.04	2.8	1	<0.006	<0.006
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	E.2	0.61	<0.5	<0.2	37.3	<0.04	1.6	2	<0.006	<0.006
WS-18/13E/11-1056	05-21-03	4.1	1.20	<0.5	<0.2	185	<0.04	0.2	2	<0.006	<0.006
*WS-20/11E/03-1054	06-10-03									<0.006	<0.006
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	E.3	1.65	<0.5	<0.2	31.3	<0.04	0.8	M	<0.006	<0.006
45N 24W 16CBC 01	06-25-03	<0.3	0.75	<0.5	<0.2	27.1	<0.04	0.3	M	<0.006	<0.006



## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd, ug/L (82686)	Ben-flur-alin, water, fltrd, ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd, ug/L (82680)	Carbo-furan, water, fltrd, ug/L (82674)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.006	<0.004	<0.005	92.8	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.006	<0.004	<0.005	90.4	0.009	<0.050	<0.010	<0.002	<0.041	<0.020
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.006	<0.004	<0.005	84.9	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
SH-28/13E/26-0232	06-09-03	<0.006	<0.004	<0.005	102	E.006	<0.050	<0.010	<0.002	<0.041	<0.020
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.006	<0.004	<0.005	117	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.006	<0.004	<0.005	97.2	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.006	<0.004	<0.005	101	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.006	<0.004	<0.005	81.6	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
WS-18/13E/11-1056	05-21-03	<0.006	<0.004	<0.005	86.7	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
WS-20/11E/03-1054	06-10-03	<0.006	<0.004	<0.005	102	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.006	<0.004	<0.005	83.0	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
45N 24W 16CBC 01	06-25-03	<0.006	<0.004	<0.005	95.3	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020
Local identifier	Date	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diazi-non-d10 surrog, wat flt 0.7u GF percent recovry (91063)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd, ug/L (82677)	EPTC, water, fltrd, ug/L (82668)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	89.5	<0.005	<0.02	<0.002
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	107	<0.005	<0.02	<0.002
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	109	<0.005	<0.02	<0.002
SH-28/13E/26-0232	06-09-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	113	<0.005	<0.02	<0.002
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	127	<0.005	<0.02	<0.002
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	96.3	<0.005	<0.02	<0.002
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	111	<0.005	<0.02	<0.002
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	92.7	<0.005	<0.02	<0.002
WS-18/13E/11-1056	05-21-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	101	<0.005	<0.02	<0.002
WS-20/11E/03-1054	06-10-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	115	<0.005	<0.02	<0.002
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	88.6	<0.005	<0.02	<0.002
45N 24W 16CBC 01	06-25-03	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	99.1	<0.005	<0.02	<0.002

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Ethal-flur- alin, water, fltrd 0.7u GF ug/L (82663)	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Desulf- inyl- fipro- nil amide, wat flt ug/L (62169)	Fipro- nil sulfide water, fltrd, ug/L (62167)	Fipro- nil sulfone water, fltrd, ug/L (62168)	Fipro- nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
SH-28/13E/26-0232	06-09-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
WS-18/13E/11-1056	05-21-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
WS-20/11E/03-1054	06-10-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
45N 24W 16CBC 01	06-25-03	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027
Local identifier	Date	Methyl para- thion, water, fltrd 0.7u GF ug/L (82667)	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Moli- nate, water, fltrd 0.7u GF ug/L (82671)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	p,p-' DDE, water, fltrd, ug/L (34653)	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
SH-28/13E/26-0232	06-09-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
WS-18/13E/11-1056	05-21-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
WS-20/11E/03-1054	06-10-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
45N 24W 16CBC 01	06-25-03	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Prometon, water, fltrd, ug/L (04037)	Pronamide, water, fltrd, 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd, 0.7u GF ug/L (82679)	Propargite, water, fltrd, 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd, 0.7u GF ug/L (82670)	Terbacil, water, fltrd, 0.7u GF ug/L (82665)	Terbufos, water, fltrd, 0.7u GF ug/L (82675)	Thio-bencarb water fltrd, 0.7u GF ug/L (82681)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
SH-28/13E/26-0232	06-09-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
WS-18/13E/11-1056	05-21-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
WS-20/11E/03-1054	06-10-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
45N 24W 16CBC 01	06-25-03	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
Local identifier	Date	Tri-allate, water, fltrd, 0.7u GF ug/L (82678)	Tri-fluralin, water, fltrd, 0.7u GF ug/L (82661)	1,1,1,2-Tetra-chloro-ethane, water, unfltrd ug/L (77562)	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	1,1,2,2-Tetra-chloro-ethane, water, unfltrd ug/L (34516)	CFC-113 water unfltrd ug/L (77652)	1,1,2-Tri-chloro-ethane, water, unfltrd ug/L (34511)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,1-Di-chloro-propene water unfltrd ug/L (77168)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
SH-28/13E/26-0232	06-09-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
WS-18/13E/11-1056	05-21-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
WS-20/11E/03-1054	06-10-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05
45N 24W 16CBC 01	06-25-03	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04	<0.05

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	1,2,3,4 Tetra- methyl- benzene water unfltrd ug/L (49999)	1,2,3,5 Tetra- methyl- benzene water unfltrd ug/L (50000)	1,2,3- Tri- chloro- benzene water unfltrd ug/L (77613)	1,2,3- Tri- chloro- propane water unfltrd ug/L (77443)	1,2,3- Tri- methyl- benzene water unfltrd ug/L (77221)	1,2,4- Tri- chloro- benzene water unfltrd ug/L (34551)	1,2,4- Tri- methyl- benzene water unfltrd ug/L (77222)	Dibromo- chloro- propane water unfltrd ug/L (82625)	1,2-Di- bromo- ethane, water, unfltrd ug/L (77651)	1,2-Di- chloro- benzene water unfltrd ug/L (34536)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
SH-28/13E/26-0232	06-09-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	E.09	<0.5	<0.04	<0.03
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
WS-18/13E/11-1056	05-21-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
WS-20/11E/03-1054	06-10-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	0.24	<0.5	<0.04	<0.03
45N 24W 16CBC 01	06-25-03	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	E.06	<0.5	<0.04	<0.03
Local identifier	Date	1,2-Di- chloro- ethane, water, unfltrd ug/L (32103)	1,2-Di- chloro- ethane- d4, sur Sch2090 wat unf pct rcv (99832)	1,2-Di- chloro- propane water unfltrd ug/L (34541)	1,3,5- Tri- methyl- benzene water unfltrd ug/L (77226)	1,3-Di- chloro- benzene water unfltrd ug/L (34566)	1,3-Di- chloro- propane water unfltrd ug/L (77173)	1,4-Di- chloro- benzene water unfltrd ug/L (34571)	14Bromo- fluoro- benzene surrog. VOC Sch wat unf pct rcv (99834)	2,2-Di- chloro- propane water unfltrd ug/L (77170)	2- Chloro- toluene water unfltrd ug/L (77275)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.1	104	<0.03	<0.04	<0.03	<0.1	<0.05	81.8	<0.05	<0.04
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.1	129	<0.03	<0.04	<0.03	<0.1	<0.05	102	<0.05	<0.04
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.1	115	<0.03	<0.04	<0.03	<0.1	<0.05	96.8	<0.05	<0.04
SH-28/13E/26-0232	06-09-03	<0.1	113	<0.03	<0.04	<0.03	<0.1	<0.05	91.8	<0.05	<0.04
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.1	119	<0.03	<0.04	<0.03	<0.1	<0.05	85.9	<0.05	<0.04
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.1	103	<0.03	<0.04	<0.03	<0.1	<0.05	83.1	<0.05	<0.04
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.1	116	<0.03	<0.04	<0.03	<0.1	<0.05	90.1	<0.05	<0.04
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.1	135	<0.03	<0.04	<0.03	<0.1	<0.05	119	<0.05	<0.04
WS-18/13E/11-1056	05-21-03	<0.1	106	<0.03	<0.04	<0.03	<0.1	<0.05	81.4	<0.05	<0.04
WS-20/11E/03-1054	06-10-03	<0.1	117	<0.03	<0.04	<0.03	<0.1	<0.05	90.3	<0.05	<0.04
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.1	139	<0.03	<0.04	<0.03	<0.1	<0.05	70.8	<0.05	<0.04
45N 24W 16CBC 01	06-25-03	<0.1	140	<0.03	<0.04	<0.03	<0.1	<0.05	72.6	<0.05	<0.04

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	2-Ethyl-toluene water unfltrd ug/L (77220)	3-Chloro-propene water unfltrd ug/L (78109)	4-Chloro-toluene water unfltrd ug/L (77277)	4-Iso-propyl-toluene water unfltrd ug/L (77356)	Acetone water unfltrd ug/L (81552)	Acrylo-nitrile water unfltrd ug/L (34215)	Benzene water unfltrd ug/L (34030)	Bromo-benzene water unfltrd ug/L (81555)	Bromo-chloro-methane water unfltrd ug/L (77297)	Bromo-di-chloro-methane water unfltrd ug/L (32101)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
SH-28/13E/26-0232	06-09-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
WS-18/13E/11-1056	05-21-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
WS-20/11E/03-1054	06-10-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
45N 24W 16CBC 01	06-25-03	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04	<0.04	<0.12	<0.05
Local identifier	Date	Bromo-ethene, water, unfltrd ug/L (50002)	Bromo-methane water unfltrd ug/L (34413)	Carbon di-sulfide water unfltrd ug/L (77041)	Chloro-benzene water unfltrd ug/L (34301)	Chloro-ethane, water, unfltrd ug/L (34311)	Chloro-methane water unfltrd ug/L (34418)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	cis-1,3-Di-chloro-propene water unfltrd ug/L (34704)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-bromo-methane water unfltrd ug/L (30217)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.1	<0.3	E.10	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
SH-28/13E/26-0232	06-09-03	<0.1	<0.3	0.21	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
WS-18/13E/11-1056	05-21-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
WS-20/11E/03-1054	06-10-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
45N 24W 16CBC 01	06-25-03	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl methacrylate, water, unfltrd ug/L (73570)	Ethyl methyl ketone, water, unfltrd ug/L (81595)	Ethyl-benzene water unfltrd ug/L (34371)	Hexa-chloro-buta-diene, water, unfltrd ug/L (39702)	Hexa-chloro-ethane, water, unfltrd ug/L (34396)	Iodo-methane water unfltrd ug/L (77424)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
SH-28/13E/26-0232	06-09-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
WS-18/13E/11-1056	05-21-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
WS-20/11E/03-1054	06-10-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
45N 24W 16CBC 01	06-25-03	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35
Local identifier	Date	Iso-butyl methyl ketone, water, unfltrd ug/L (78133)	Iso-propyl-benzene water unfltrd ug/L (77223)	Methyl acrylonitrile water unfltrd ug/L (81593)	Methyl acrylate, water, unfltrd ug/L (49991)	Methyl methacrylate, water, unfltrd ug/L (81597)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta-+ para-Xylene, water, unfltrd ug/L (85795)	Naphthalene, water, unfltrd ug/L (34696)	Methyl n-butyl ketone, water, unfltrd ug/L (77103)	n-Butyl benzene water unfltrd ug/L (77342)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	E.02	<0.5	<0.7	<0.2
SH-28/13E/26-0232	06-09-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	E.02	<0.5	<0.7	<0.2
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
WS-18/13E/11-1056	05-21-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
WS-20/11E/03-1054	06-10-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2
45N 24W 16CBC 01	06-25-03	<0.4	<0.06	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	n-propyl-benzene water unfltrd ug/L (77224)	o-Xylene, water, unfltrd ug/L (77135)	sec-Butyl-benzene water unfltrd ug/L (77350)	Styrene water unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	tert-Butyl-benzene water unfltrd ug/L (77353)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Tetra-hydro-furan, water, unfltrd ug/L (81607)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	M
SH-28/13E/26-0232	06-09-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
WS-18/13E/11-1056	05-21-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
WS-20/11E/03-1054	06-10-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
45N 24W 16CBC 01	06-25-03	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2	<0.10	<0.03	<0.06	<2
Local identifier	Date	Toluene water unfltrd ug/L (34010)	Toluene -d8, surrog, Sch2090 wat unfltrd percent recovry (99833)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	trans-1,3-Di-chloro-propene water unfltrd ug/L (34699)	trans-1,4-Di-chloro-2-butene, wat unfltrd ug/L (73547)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
OZAUKEE COUNTY											
OZ-12/21E/05-0582	05-22-03	<0.05	94.5	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
PORTAGE COUNTY											
PT-22/10E/36-1434	07-29-03	<0.05	99.4	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
SHAWANO COUNTY											
SH-25/16E/14-0231	06-12-03	E.07	99.4	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
SH-28/13E/26-0232	06-09-03	E.04	99.2	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	E.02	<0.1
VILAS COUNTY											
VI-41/12E/33-0095	07-24-03	<0.05	98.7	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
WASHINGTON COUNTY											
WN-10/19E/13-0997	05-22-03	<0.05	95.2	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
WAUPACA COUNTY											
WP-23/14E/25-0831	06-10-03	<0.05	98.5	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
WAUSHARA COUNTY											
WS-18/10E/15-1055	06-05-03	<0.05	107	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
WS-18/13E/11-1056	05-21-03	<0.05	95.8	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
WS-20/11E/03-1054	06-10-03	<0.05	98.1	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
MARQUETTE COUNTY, MICHIGAN											
45N 30W 20ADA 01	06-26-03	<0.05	98.4	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
45N 24W 16CBC 01	06-25-03	<0.05	99.0	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Local identifier	Date	Ra-226, water, fltrd, radon method pCi/L (09511)	Ra-228, water, fltrd, pCi/L (81366)	Rn-222 2-sigma water unfltrd pCi/L (76002)	Rn-222, water, unfltrd pCi/L (82303)	Tritium 2-sigma water unfltrd pCi/L (75985)	Tritium water unfltrd pCi/L (07000)	Uranium natural water, fltrd, ug/L (22703)	Number of TICS from VOC by GCMS number (99871)
OZAUKEE COUNTY									
OZ-12/21E/05-0582	05-22-03	0.20	M	20	180	--	--	0.45	0.0
PORTAGE COUNTY									
PT-22/10E/36-1434	07-29-03	0.03	M	21	260	--	--	1.57	0.0
SHAWANO COUNTY									
SH-25/16E/14-0231	06-12-03	0.05	M	19	190	1.0	M	0.05	0.0
SH-28/13E/26-0232	06-09-03	0.02	M	46	2,440	--	--	3.26	0.0
VILAS COUNTY									
VI-41/12E/33-0095	07-24-03	0.03	M	20	240	--	--	<0.02	0.0
WASHINGTON COUNTY									
WN-10/19E/13-0997	05-22-03	0.16	M	22	280	1.9	28	0.11	0.0
WAUPACA COUNTY									
WP-23/14E/25-0831	06-10-03	0.06	M	19	170	--	--	2.22	0.0
WAUSHARA COUNTY									
WS-18/10E/15-1055	06-05-03	0.01	M	18	140	--	--	0.32	0.0
WS-18/13E/11-1056	05-21-03	0.61	2	24	430	--	--	0.30	0.0
*WS-20/11E/03-1054	06-10-03			25	500	--	--	0.28	0.0
MARQUETTE COUNTY, MICHIGAN									
45N 30W 20ADA 01	06-26-03	0.11	M	28	700	--	--	1.00	0.0
45N 24W 16CBC 01	06-25-03	0.10	M	22	180	1.9	32	0.06	0.0



Data for the following sites are for samples collected from shallow monitoring wells in the sand and gravel aquifer. Samples were collected adjacent to lakes as part of lake studies.

## WATER-QUALITY ANALYSES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

	Station number	Date	Time	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Phos- phorus, water, fltrd, mg/L (00666)
ASHLAND COUNTY								
PIEZOMETER NO 1 @ BUTTERNUT LAKE	455854090310301	06-17-03	1830	0.5	6.4	393	7.1	0.011
PIEZOMETER NO 2 @ BUTTERNUT LAKE	455935090303700	06-18-03	0915	5.5	6.8	197	8.0	0.017
PIEZOMETER NO 3 @ BUTTERNUT LAKE	455918090302400	06-18-03	1010	0.6	6.5	456	10.0	0.191
PRICE COUNTY								
PIEZOMETER NO 4 @ BUTTERNUT LAKE	455822090305000	06-18-03	1110	0.6	6.7	250	9.2	0.023
PIEZOMETER NO 5 @ BUTTERNUT LAKE	455651090310600	06-18-03	1145	2.9	6.1	160	10.3	0.014
PIEZOMETER NO 6 @ BUTTERNUT LAKE	455751090313400	06-18-03	1230	0.6	6.7	168	10.6	0.011

## WATER-QUALITY ANALYSES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Time	Depth of well, feet below LSD (72008)	Depth to water level, feet below LSD (72019)	Sam-pling method, code (82398)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	
WAUKESHA COUNTY										
NAGAWICKA LAKE WELL NO. 1 AT DELAFIELD	430329088225600	07-30-03	0915	6.34	0.10	4,080	2.2	7.5	440	19.9
		08-14-03	1210	6.34	0.03	--	--	--	--	--
		09-03-03	1422	6.34	0.09	--	--	--	--	--
		09-16-03	1440	6.34	-0.05	4,080	--	7.6	410	22.9
NAGAWICKA LAKE WELL NO. 2 AT DELAFIELD	430352088225000	07-30-03	1345	5.81	1.36	4,080	3.6	6.8	658	26.4
		08-14-03	1015	5.81	1.31	--	--	--	--	--
		09-03-03	0912	5.81	1.36	--	--	--	--	--
		09-16-03	1025	5.81	1.23	--	--	--	--	--
NAGAWICKA LAKE WELL NO. 2A AT DELAFIELD	430352088225001	08-14-03	1115	11.69	1.20	4,080	0.4	8.2	1,100	15.7
		09-03-03	1015	11.69	1.27	--	--	--	--	--
		09-16-03	1040	11.69	1.14	4,080	0.5	7.0	1,090	16.1
NAGAWICKA LAKE WELL NO. 3 AT DELAFIELD	430424088224300	07-24-03	1107	6.04	0.58	--	--	--	--	--
		07-30-03	1345	6.04	0.59	4,080	4.0	7.5	481	21.1
		08-14-03	1255	6.04	0.52	--	--	--	--	--
		09-03-03	0930	6.04	0.60	--	--	--	--	--
		09-16-03	1130	6.04	0.49	4,080	--	7.3	299	19.9
NAGAWICKA LAKE WELL NO. 4 AT DELAFIELD	430549088231600	07-30-03	1135	10.71	--	4,080	2.2	8.2	190	18.5
		08-14-03	1305	10.71	--	--	--	--	--	--
		09-03-03	1049	10.71	--	--	--	--	--	--
		09-16-03	1240	10.71	--	4,080	--	7.8	491	20.1
NAGAWICKA LAKE WELL NO. 5 NEAR NASHOTAH	430502088235400	07-24-03	1403	11.60	0.35	--	--	--	--	--
		07-30-03	1035	11.60	0.43	4,080	0.5	9.9	325	12.2
		08-14-03	1320	11.60	0.32	--	--	--	--	--
		09-03-03	1100	11.60	0.63	--	--	--	--	--
		09-16-03	1240	11.60	0.65	4,080	0.6	9.1	919	13.5

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)
07-30-03	0.004	0.016
08-14-03	--	--
09-03-03	--	--
09-16-03	0.005	0.011
07-30-03	0.023	0.212
08-14-03	--	--
09-03-03	--	--
09-16-03	--	--
08-14-03	0.003	0.034
09-03-03	--	--
09-16-03	0.022	0.040
07-24-03	--	--
07-30-03	--	0.086
08-14-03	--	--
09-03-03	--	--
09-16-03	--	0.086
07-30-03	0.081	0.156
08-14-03	--	--
09-03-03	--	--
09-16-03	0.142	0.150
07-24-03	--	--
07-30-03	--	0.089
08-14-03	--	--
09-03-03	--	--
09-16-03	--	0.097

## WISCONSIN DISTRICT PUBLICATIONS

The reports listed below are a partial list of reports prepared by the Wisconsin District in cooperation with other agencies since 1948. The list contains reports that are relevant and contribute significantly to understanding the hydrology of Wisconsin's water resources.

The reports published in a U.S. Geological Survey series are for sale by the U.S. Geological Survey, Box 25286, Federal Center, Denver, CO 80225. For more information and prices on USGS products, contact representatives at 1-888-ASK-USGS. For access to the new Publications Warehouse, go to <http://pubs.usgs.gov>, or link from the complete list of USGS publications and products at: <http://www.usgs.gov/pubprod/>.

Copies of reports published by the University of Wisconsin, Geological and Natural History Survey, can be obtained from their office at 3817 Mineral Point Road, Madison, Wisconsin 53705, (608) 263-7389.

### WATER-RESOURCES INVESTIGATIONS REPORTS

- Hunt, R.J., Saad, D.A., and Chapel, D.M., 2003, Numerical simulation of ground-water flow in La Crosse County, Wisconsin, and into nearby pools of the Mississippi River: U.S. Geological Survey Water-Resources Investigations Report 03-4154, 36 p.
- Robertson, D.M., Rose, W.J., and Saad, D.A., 2003, Water quality and the effects of changes in phosphorus loading to Muskegon Lake, Vilas County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 03-4011, 18 p.
- Diebel, M.W., and Sullivan, D.J., 2003, Surface-water-resources information for the Ho-Chunk Nation lands and vicinity, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 02-4307, 27 p.
- Fitzpatrick, F.A., 2003, Nutrient, trace-element, and ecological of Musky Bay, Lac Courte Oreilles, Wisconsin, as inferred from sediment cores: U.S. Geological Survey Water-Resources Investigations Report 02-4225, 141 p.
- Dunning, C.P., 2003, Simulation of the shallow aquifer in the vicinity of Silver Lake, Washington County, Wisconsin, using analytic elements: U.S. Geological Survey Water-Resources Investigations Report 02-4204, 29 p.
- Robertson, D.M., 2002, Response of the St. Croix River Pools, Wisconsin and Minnesota, to various phosphorus-loading scenarios: U.S. Geological Survey Water-Resources Investigations Report 02-4181, 36 p.
- Garn, H.S., 2002, Effects of lawn fertilizer on nutrient concentration in runoff from lakeshore lawns, Lauderdale Lakes, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 02-4130, 6 p.
- Robertson, D.M., Goddard, G.L., Mergener, E.A., Rose, W.J., and Garrison, P.J., 2002, Hydrology and water quality of Geneva Lake, Walworth County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 02-4039, 73 p.
- Krohelski, J.T., Rose, W.J., and Hunt, R.J., 2002, Hydrologic Investigation of Powell Marsh and its Relation to Dead Pike Lake, Vilas County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 02-4034, 20 p.
- Krohelski, J.T., Lin, Yu-Feng, Rose, W.J., and Hunt, R.J., 2002, Simulation of Fish, Mud, and Crystal Lakes, and the shallow ground-water system, Dane County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 02-4014, 17 p.
- Lenz, B.N., Robertson, D.M., Fallon, J.D., and Ferrin, R., 2001, Nutrient and suspended-sediment concentrations and loads and benthic-invertebrate data for tributaries to the St. Croix River, Wisconsin and Minnesota, 1997-99: U.S. Geological Survey Water-Resources Investigations Report 01-4162, 57 p.
- Steuer, J.J., and Hunt, R.J., 2001, Use of a watershed-modeling approach to assess hydrologic effects of urbanization, Middleton, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 01-4113, 49 p.
- Dunning, C.P., and Yeskis, D.J., 2001, Hydrogeology and ground-water quality of the County Road A disposal site on the Bad River Indian Reservation, Ashland County, Wisconsin: 1997-98: U.S. Geological Survey Water-Resources Investigations Report 01-4082, 61 p.
- Robertson, D.M., Saad, D.A., and Wieben, A.M., 2001, An alternative regionalization scheme for defining nutrient criteria for rivers and streams: U.S. Geological Survey Water-Resources Investigations Report 01-4073, 57 p.
- Garn, H.S., Scudder, B.C., Richards, K.D., and Sullivan, D.J., 2001, Characteristics of water sediment, and benthic communities of the Wolf River, Menominee Indian Reservation, Wisconsin, water years 1986-98: U.S. Geological Survey Water-Resources Investigations Report 01-4019, 54 p.
- Robertson, D.M., 2000, One-dimensional simulation of stratification and dissolved oxygen in McCook Reservoir, Illinois: U.S. Geological Survey Water-Resources Investigations Report 00-4258, 17 p.
- Steuer, J.J., 2000, A mass-balance approach for assessing PCB movement during remediation of a PCB-contaminated deposit on the Fox River, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 00-4245, 8 p.
- Robertson, D.M., and Rose, W.J., 2000, Hydrology, water quality, and phosphorus loading of Little St. Germain Lake, Vilas County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 00-4209, 8 p.
- Schmidt, M.A., Richards, K.D., and Scudder, B.C., 2000, Surface-water quality, Oneida Reservation and vicinity, Wisconsin, 1997-98, U.S. Geological Survey Water-Resources Investigations Report 00-4179, 30 p.
- Hunt, R.J., and Steuer, J.J., 2000, Simulation of the recharge area for Frederick Springs, Dane County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 00-4172, 33 p.

- Hunt, R.J., Lin, Y., Krohelski, J.T., and Juckem, P.F., 2000, Simulation of the shallow hydrologic system in the vicinity of Middle Genesee Lake, Wisconsin, using analytic elements and parameter estimation: U.S. Geological Survey Water-Resources Investigations Report 00-4136, 16 p.
- Saad, D.A., and Robertson, D.M., 2000, Water-resources-related information for the St. Croix Reservation and vicinity, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 00-4133, 65 p.
- Grannemann, N.G., Hunt, R.J., Nicholas, J.R., Reilly, T.E., and Winter, T.C., 2000, The importance of ground water in the Great Lakes Region: U.S. Geological Survey Water-Resources Investigations Report 00-4008, 14 p.
- Krohelski, J.T., Feinstein, D.T., and Lenz, B.N., 1999, Simulation of stage and hydrologic budget for Shell Lake, Washburn County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 99-4209, 23 p.
- Batten, W.G., Yeskis, D.J., and Dunning, C.P., 1999, Hydrogeologic properties of the Ordovician Sinipee Group at test well BN-483, Better Brite Superfund Site, De Pere, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 99-4199, 19 p.
- Waschbusch, R.J., 1999, Evaluation of the effectiveness of an urban stormwater treatment unit in Madison, Wisconsin, 1996-97: U.S. Geological Survey Water-Resources Investigations Report 99-4195, 49 p.
- Steuer, J.S., Hall, D.W., and Fitzgerald, S.A., 1999, Distribution and transport of polychlorinated biphenyls and associated particulates in the Hayton Millpond, South Branch Manitowoc River, 1993-95: U.S. Geological Survey Water-Resources Investigations Report 99-4101, 20 p.
- Steuer, J.S., Fitzgerald, S.A., and Hall, D.W., 1999, Distribution and transport of polychlorinated biphenyls and associated particulates in the Milwaukee River system, Wisconsin, 1993-95: U.S. Geological Survey Water-Resources Investigations Report 99-4100, 37 p.
- Fitzpatrick, F.A., Knox, J.C., and Whitman, H.E., 1999, Effects of historical land-cover changes on flooding and sedimentation, North Fish Creek, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 99-4083, 12 p.
- Waschbusch, R.J., Selbig, W.R., and Bannerman, R.T., 1999, Sources of phosphorus from two urban residential basins in Madison, Wisconsin, 1994-95: U.S. Geological Survey Water-Resources Investigations Report 99-4021, 47 p.
- Saad, D.A., and Schmidt, M.A., 1999, Water-resources-related information for the Oneida Reservation and vicinity, Wisconsin, U.S. Geological Survey Water-Resources Investigations Report 98-4266, 57 p.
- Saad, D.A., and Thorstenson, D.C., 1998, Flow and geochemistry along shallow ground-water flowpaths in an agricultural area in southeastern Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 98-4179, 62 p.
- Robertson, D.M., 1998, Evaluation of the surface-water sampling design in the Western Lake Michigan Drainages in relation to environmental factors affecting water quality at base flow, U.S. Geological Survey Water-Resources Investigations Report 98-4072, 53 p.
- Elder, J.F., Manion, B.J., and Goddard, G.L., 1997, Mesocosm experiments to assess factors affecting phosphorus retention and release in an extended Wisconsin wetland: U.S. Geological Survey Water-Resources Investigations Report 97-4272, 14 p.
- Steuer, J., Selbig, W., Hornewer, N., and Prey, J., 1997, Sources of contamination in an urban basin in Marquette, Michigan and an analysis of concentrations, loads, and data quality: U.S. Geological Survey Water-Resources Investigations Report 97-4242, 25 p.
- Walker, J.F., Saad, D.A., and Krohelski, J.T., 1998, Optimization of ground-water withdrawal in the lower Fox River communities, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 97-4218, 24 p.
- Richards, K.D., Sullivan, D.J., and Stewart, J.S., 1998, Surface-water quality at fixed sites in the Western Lake Michigan Drainages, Wisconsin and Michigan, and the effects of natural and human factors, 1993-95: U.S. Geological Survey Water-Resources Investigations Report 97-4208, 40 p.
- Stewart, J.S., 1998, Combining satellite data with ancillary data to produce a refined land-use/land-cover map: U.S. Geological Survey Water-Resources Investigations Report 97-4203, 11 p., 3 pl.
- Peters, C.A., et al, 1997, Environmental setting and implications for water quality in the Western Lake Michigan drainage: U.S. Geological Survey Water-Resources Investigations Report 97-4196, 79 p.
- Scudder, B.C., Sullivan, D.J., Fitzpatrick, F.A., and Rheume, S.J., 1997, Trace elements and synthetic organic compounds in biota and streambed sediment of the Western Lake Michigan drainages, 1992-1995: U.S. Geological Survey Water-Resources Investigations Report 97-4192, 34 p.
- Fitzgerald, S.A., 1997, Results of quality-control sampling of water, bed sediment, and tissue in the Western Lake Michigan drainages study unit of the national water-quality assessment program: U.S. Geological Survey Water-Resources Investigations Report 97-4148, 24 p.
- Conlon, T.D., 1998, Hydrogeology and simulation of ground-water flow in the sandstone aquifer, northeastern Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 97-4096, 60 p., 1 pl.
- Brown, T.A., Dunning, C.P., and Sharpe, J.B., 2000, Altitude, depth, and thickness of the Galena-Platteville bedrock unit in the subcrop area of Illinois and Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 97-4054-C, 4 sheets.
- Batten, W.G., Brown, T.A., Mills, P.C., and Sabin, T.J., 1997, Rock-stratigraphic nomenclature, lithology, and subcrop area of the Galena-Platteville bedrock unit in Illinois and Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 97-4054-B, 1 sheet.
- Goddard, G.L., and Elder, J.F., 1997, Retention of sediments and nutrients in Jackson Creek wetland near Delavan Lake, Wisconsin, 1993-95: U.S. Geological Survey Water-Resources Investigations Report 97-4014, 22 p.
- Scudder, B.C., Sullivan, D.J., Rheume, S.J., Parsons, S.R., and Lenz, B.N., 1996, Summary of biological investigations relating to water quality in the western Lake Michigan drainages, Wisconsin and Michigan: U.S. Geological Survey Water-Resources Investigations Report 96-4263, 89 p.
- Garn, H.S., Olson, D.L., Seidel, T.L., and Rose, W.J., 1996, Hydrology and water quality of Lauderdale Lakes, Walworth County, Wisconsin, 1993-94: U.S. Geological Survey Water-Resources Investigations Report 96-4235, 29 p.
- Conlon, T.D., 1996, Hydrogeology of the sand and gravel aquifer in the vicinity of the Wild Rose State Fish Hatchery, north-central Waushara County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 96-4213, 14 p.

- Legg, A.D., Bannerman, R.T., and Panuska, J., 1996, Variation in the relation of rainfall to runoff from residential lawns in Madison, Wisconsin, July and August 1995: U.S. Geological Survey Water-Resources Investigations Report 96-4194, 11 p.
- Robertson, D.M., Field, S.J., Elder, J.F., Goddard, G.L., and James, W.F., 1996, Phosphorus dynamics in Delavan Lake Inlet, Southeastern Wisconsin, 1994: U.S. Geological Survey Water-Resources Investigations Report 96-4160, 18 p.
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- Scudder, B.C., and Stewart, J.S., 1996, Benthic algae of benchmark streams in agricultural areas of eastern Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 96-4038-E, 46p.
- Sullivan, D.J. and Peterson, E.M., 1997, Fish communities of benchmark streams in agricultural areas of eastern Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 96-4038-D, 23 p.
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- Fitzpatrick, F.A., Peterson, E.M., and Stewart, J.S., 1996, Habitat characteristics of benchmark streams in agricultural areas of Eastern Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 96-4038-B, 35 p.
- Rheaume, S.J., Stewart, J.S., and Lenz, B.N., 1996, Environmental setting of benchmark streams in agricultural areas of Eastern Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 96-4038-A, 50 p.
- Robertson, D.M., and Saad, D.A., 1996, Water-quality assessment of the Western Lake Michigan drainages—analysis of available information on nutrients and suspended sediment, water years 1971-90: U.S. Geological Survey Water-Resources Investigations Report 96-4012, 165 p.
- Rose, W.J., and Graczyk, D.J., 1996, Sediment transport, particle size, and loads in North Fish Creek in Bayfield County, Wisconsin, water years 1990-91: U.S. Geological Survey Water-Resources Investigations Report 95-4222, 18 p.
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- Fitzpatrick, F.A., and Giddings, E.M.P., 1997, Stream habitat characteristics of fixed sites in the Western Lake Michigan drainages, Wisconsin and Michigan, 1993-95: U.S. Geological Survey Water-Resources Investigations Report 95-4211-B, 58 p.
- Lenz, B.N. and Rheaume, S.J., 2000, Benthic invertebrates of fixed sites in the Western Lake Michigan Drainages, Wisconsin and Michigan, 1993-95: U.S. Geological Survey Water-Resources Investigations Report 95-4211-D, 30 p.
- Sullivan, D.J., Peterson, E.M., and Richards, K.D., 1995, Environmental setting of fixed sites in the Western Lake Michigan Drainages, Michigan and Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 95-4211-A, 30 p.
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- Goddard, Gerald L., and Field, Stephen J., 1994, Hydrology and water quality of Whitewater and Rice Lakes in southeastern Wisconsin, 1990-91: U.S. Geological Survey Water-Resources Investigations Report 94-4101, 36 p.
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- Krug, W.R., Gebert, W.A., Graczyk, D.J., Stevens, D.L., Jr., Rochelle, B.P., Church, M.R., and Campbell, W.G., 1988, Runoff map for the Northeastern, Southeastern, and Mid-Atlantic United States for water years 1951-80: U.S. Geological Survey Water-Resources Investigations Report 88-4094, 44 p.
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- Krohelski, J.T., Ellefson, B.R., and Storlie, C.A., 1987, Estimated use of ground water for irrigation in Wisconsin, 1984: U.S. Geological Survey Water-Resources Investigations Report 86-4079, 12 p., 1 pl.
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- Holmstrom, B.K., 1980, Low-flow characteristics of streams in the Menominee-Oconto-Peshigo River basin, Wisconsin: Water-Resources Investigations Open-File Report 80-749, 82 p.
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- Gebert, W.A., and Holmstrom, B.K., 1974, Low-flow characteristics of Wisconsin streams at sewage-treatment plants: U.S. Geological Survey Water-Resources Investigations 45-74, 101 p.
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## OPEN-FILE REPORTS

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- Scudder, B.C., Selbig, J.W., and Waschbusch, R.J., 2000, Determination of the effects of fine-grained sediment and other limiting variables on trout habitat for selected streams in Wisconsin: U.S. Geological Survey Open-File Report 00–435, 25 p.
- Maertz, D.E., 2000, Water-resources investigations in Wisconsin, 2000: U.S. Geological Survey Open-File Report 00–251, 117 p.
- Wisconsin District Lakes-Studies Team, 2000, Water-quality and lake-stage data for Wisconsin lakes, water year 1999: U.S. Geological Survey Open-File Report 00–89, 140 p.
- Corsi, S.R., Greb, S.R., Bannerman, R.T., and Pitt, R.E., 1999, Evaluation of the multi-chambered treatment train, a retrofit water-quality management device: U.S. Geological Survey Open-File Report 99–270, 24 p.
- Maertz, D.E., 1999, Water-resources investigations in Wisconsin, 1999: U.S. Geological Survey Open-File Report 99–229, 112 p.
- Wisconsin District Lake-Studies Team, 1999, Water-quality and lake-stage data for Wisconsin lakes, water year 1998: U.S. Geological Survey Open-File Report 99–98, 143 p.
- Krug, W. R., 1999, Simulation of the effects of operating Lakes Mendota, Monona, and Waubesa, south-central Wisconsin, as multipurpose reservoirs to maintain dry-weather flow: U.S. Geological Survey Open-File Report 99–67, 18 p.
- Hall, D.W., Behrendt, T.E., and Hughes, P.E., 1998, temperature, pH, conductance, and dissolved oxygen in cross sections of 11 Lake Michigan tributaries, 1994–95: U.S. Geological Survey Open-File Report 98–567, 85 p.
- Maertz, D.E., 1998, Water-resources investigations in Wisconsin: U.S. Geological Survey Open-File Report 98–295, 96 p.
- Wisconsin District Lake-Studies Team, 1998, Water-quality and lake-stage data for Wisconsin lakes, water year 1997: U.S. Geological Survey Open-File Report 98–78, 129 p.
- Ellefson, B.R., Fan, C.H., and Ripley, J.L., 1997, Water use in Wisconsin, 1995: U.S. Geological Survey Open-File Report 97–356, 1 sheet.
- Maertz, D.E., 1997, Water-resources investigations in Wisconsin, U.S. Geological Survey Open-File Report 97–351, 91 p.
- Wisconsin District Lake-Studies Team, 1997, Water-quality and lake-stage data for Wisconsin lakes, water year 1996: U.S. Geological Survey Open-File Report 97–123, 134 p.
- Rappold, K.F., Wierl, J.A., and Amerson, F.U., 1997, Watershed characteristics and land management in the nonpoint-source evaluation monitoring watersheds in Wisconsin: U.S. Geological Survey Open-File Report 97–119, 39 p.
- Owens, D.W., Corsi, S.R., and Rappold, K.F., 1997, Evaluation of nonpoint-source contamination, Wisconsin: Selected topics for water year 1995: U.S. Geological Survey Open-File Report 96–661A, 41 p.
- Bannerman, R.T., Legg, A.D., and Greb, S.R., 1996, Quality of Wisconsin stormwater 1989–94: U.S. Geological Survey Open-File Report 96–458, 26 p.
- Maertz, D.E., 1996, Water-resources investigations in Wisconsin, U.S. Geological Survey Open-File Report 96–333, 74 p.
- Wisconsin District Lake-Studies Team, 1996, Water-quality and lake-stage data for Wisconsin lakes, water year 1995: U.S. Geological Survey Open-File Report 96–168, 123 p.
- Wierl, J.A., Rappold, K.F., and Amerson, F.U., 1996, Summary of the land-use inventory for the nonpoint-source evaluation monitoring watersheds in Wisconsin: U.S. Geological Survey Open-File Report 96–123, 23 p.
- Steuer, J.J., Selbig, W.R. and Hornewer, N.J., 1996, Contaminant concentrations in stormwater from eight Lake Superior basin cities, 1993–94: U.S. Geological Survey Open-File Report 96–122, 16 p.
- Waschbusch, R.J., 1996, Stormwater-runoff data, Madison, Wisconsin, 1993–94: U.S. Geological Survey Open-File Report 95–733, 33 p.
- Maertz, D.E., 1995, Water-resources investigations in Wisconsin, 1995: U.S. Geological Survey Open-File Report 95–328, 84 p.



- Walker, J.R., Graczyk, D.J., Corsi, S.R., Owens, D.W., and Wierl, J.A., 1995, Evaluation of nonpoint-source contamination, Wisconsin: Land-use and best-management-practices inventory, selected streamwater-quality data, urban-watershed quality assurance and quality control, constituent loads in rural streams, and snowmelt-runoff analysis, water year 1994: U.S. Geological Survey Open-File Report 95-320, 21 p.
- Wisconsin District Lake-Studies Team, 1995, Water-quality and lake-stage data for Wisconsin lakes, water year 1994: U.S. Geological Survey Open-File Report 95-190, 157 p.
- Peters, C.A., 1995, National Water-Quality Assessment Program, Western Lake Michigan Drainages-Summaries of Liaison Committee Meeting, Green Bay, Wisconsin, March 28-29, 1995: U.S. Geological Survey Open-File Report 95-163, 57 p.
- Corsi, S.R., Walker, J.F., Graczyk, D.J., Greb, S.R., Owens, D.W., and Rappold, K.F., 1995, Evaluation of nonpoint-source contamination, Wisconsin: Selected streamwater-quality data, land-use and best-management practices inventory, and quality assurance and quality control, water year 1993: U.S. Geological Survey Open-File Report 94-707, 57 p.
- Krohelski, J.T., and Batten, W.G., 1995, Simulation of stage and the hydrologic budget of Devils Lake, Sauk County, Wisconsin: U.S. Geological Survey Open-File Report 94-348, 22 p.
- Maertz, D.E., 1994, Water-resources investigations in Wisconsin, 1994: U.S. Geological Survey Open-File Report 94-321.
- Graczyk, D.J., Walker, J.F., Greb, S.R., Corsi, S.R., and Owens, D.W., 1993, Evaluation of nonpoint-source contamination, Wisconsin: Selected data for 1992 water year: U.S. Geological Survey Open-File Report 93-630, 48 p.
- House, L.B., Waschbusch, R.J., and Hughes, P.E., 1993, Water quality of an urban wet detention pond in Madison, Wisconsin, 1987-88: U.S. Geological Survey Open-File Report 93-172, 57 p.
- House, L.B., Hughes, P.E., and Waschbusch, R.J., 1993, Concentrations and loads of polychlorinated biphenyls in major tributaries entering Green Bay, Lake Michigan, 1989-90: U.S. Geological Survey Open-File Report 93-132, 41 p.
- Walker, J.F., 1993, Techniques for detecting effects of urban and rural land-use practices on stream-water chemistry in selected watersheds in Texas, Minnesota, and Illinois: U.S. Geological Survey Open-File Report 93-130, 16 p.
- Maertz, D.E., 1993, Water-resources investigations in Wisconsin, 1993: U.S. Geological Survey Open-File Report 93-129, 91 p.
- Ellefson, B.R., Sabin, T.J., and Krohelski, J.T., 1993, Water use in Wisconsin, 1990: U.S. Geological Survey Open-File Report 93-118, 1 sheet.
- House, L.B., 1995, Distribution and transport of polychlorinated biphenyls in Little Lake Butte des Morts, Fox River, Wisconsin, April 1987-October 1988: U.S. Geological Survey Open-File Report 93-31, 43 p., 1 pl.
- Maertz, D.E., 1992, Water-resources investigations in Wisconsin: Programs and activities of the U.S. Geological Survey, 1991-1992: U.S. Geological Survey Open-File Report 92-125, 93 p.
- Elder, J.F., Krabbenhoft, D.P., and Walker, J.F., 1992, Water, energy, and biogeochemical budgets (WEBB) program: Data availability and research at the northern temperate lakes site, Wisconsin: U.S. Geological Survey Open-File Report 92-48, 15 p.
- Krabbenhoft, D.P., and Krohelski, J.T., 1992, Data on water quality, lake sediment, and lake-level fluctuation, St. Croix Indian Reservation, Wisconsin, 1981-87: U.S. Geological Survey Open-File Report 92-26, 53 p.
- Hughes, P.E., 1993, Hydrologic and water-quality data for the East River Basin of northeastern Wisconsin: U.S. Geological Survey Open-File Report 89-245, 91 p.
- Setmire, J.G., 1991, National Water-Quality Assessment Program - Western Lake Michigan Drainage Basin: U.S. Geological Survey Open-File Report 91-161, Water Fact Sheet, 2 p.
- Melcher, N.B. and Walker, J.F., 1990, Evaluation of selected methods for determining streamflow during periods of ice effect: U.S. Geological Survey Open-File Report 90-554, 51 p.
- U.S. Geological Survey, 1990, The effects of the 1988 drought on the water resources of Wisconsin: U.S. Geological Survey Open-File Report 90-149, Water Fact Sheet, 2 p.
- House, L.B., 1990, Data on polychlorinated biphenyls, dieldrin, lead, and cadmium in Wisconsin and upper Michigan tributaries to Green Bay, July 1987 through April 1988: U.S. Geological Survey Open-File Report 89-52, 11 p.
- Gebert, Warren A., Graczyk, David J., and Krug, William R., 1988, Runoff for selected sites in Shenandoah National Park, Virginia, July 18, 1981 through July 17, 1982: U.S. Geological Survey Open-File Report 88-98, 13 p.
- Ellefson, B.R., Rury, K.S., and Krohelski, J.T., 1988, Water use in Wisconsin, 1985: U.S. Geological Survey Open-File Report 87-699.
- Krug, W.R., Gebert, W.A., and Graczyk, D.J., 1989, Preparation of average annual runoff map of the United States, 1951-80: U.S. Geological Survey Open-File Report 87-535, 414 p.
- Krug, W.R., Ostenson, N.A., and Krohelski, J.T., 1988, Prediction of the effects of mine dewatering on four lakes near Crandon, Wisconsin, by use of a water-budget model: U.S. Geological Survey Open-File Report 87-471, 63 p.
- Graczyk, David J., Gebert, Warren A., Krug, William R., and Allord, G.J., 1987, Maps of runoff in the Northeastern Region and southern Blue Ridge Province of the United States during selected time periods in 1983-85: U.S. Geological Survey Open-File Report 87-106, 8 p., 3 pl.
- Graczyk, David J., Krug, William R., and Gebert, Warren A., 1986, A history of annual streamflows from the 21 water-resource regions in the United States and Puerto Rico, 1951-83: U.S. Geological Survey Open-File Report 86-128, 30 p.
- Henrich, E.W., 1984, Drainage area data for Wisconsin Streams: U.S. Geological Survey Open-File Report 83-933, 322 p.
- Lawrence, C.L., Ellefson, B.R., and Cotter, R.D., 1984, Public-supply pumpage in Wisconsin in 1979: U.S. Geological Survey Open-File Report 83-931, 40 p.
- Lawrence, C.L., and Ellefson, B.R., Water use in Wisconsin, 1979, U.S. Geological Survey Open-File Report 82-444, 98 p.
- Novitzki, R.P., 1979, Streamflow estimates in selected Wisconsin streams: U.S. Geological Survey Open-File Report 79-1282, 11 p.
- Harr, C.A., and Novitzki, R.P., 1979, Availability of supplemental water supplies at salmonid fish-propagation stations in Wisconsin: U.S. Geological Survey Open-File Report 79-1170, 13 p.
- Krug, W.R., 1979, Simulation of streamflow of Rock River at Lake Koshkonong, Wisconsin, to determine effects of withdrawal of powerplant-cooling water: U.S. Geological Survey Open-File Report 79-253, 21 p.

- McLeod, R.S., 1978, Water-level declines in the Madison area, Dane County, Wisconsin: U.S. Geological Survey Open-File Report 78-936, 15 p.
- Field, S.J., 1978, Low-flow characteristics of small streams in proposed Public Law 566 basins: U.S. Geological Survey Open-File Report 78-664, 32 p.
- Hindall, S.M., 1978, Suspended-sediment transport in the Big Eau Pleine River basin, central Wisconsin: U.S. Geological Survey Open-File Report 78-313, 12 p.
- Lawrence, C.L., 1976, Regional flood limits of lower Yahara River, Lake Waubesa and south, in Dane County, Wisconsin: U.S. Geological Survey Open-File Report 76-805, 20 p.
- Krug, W.R., 1976, Probable maximum flood at Lake Chippewa near Winter, Wisconsin: U.S. Geological Survey Open-File Report 76-800, 14 p.
- Grant, R.S., 1976, Waste-assimilation study of Koshkonong Creek below sewage-treatment plant at Sun Prairie, Wisconsin: U.S. Geological Survey Open-File Report 76-655, 44 p.
- Lawrence, C.L., 1976, Regional flood limits of upper Yahara River in Dane County, Wisconsin: U.S. Geological Survey Open-File Report 76-448, 15 p.
- Holmstrom, B.K., 1976, Low-flow characteristics and mean annual discharge of North Branch Manitowoc River at Potter, Wisconsin: U.S. Geological Survey Open-File Report 76-204, 20 p.
- Krug, W.R., 1976, Flood-plain delineation for regional flood in Dane County, Wisconsin: U.S. Geological Survey Open-File Report 76-164, 168 p.
- Field, S.J., 1975, Low-flow study of the Pike River basin, Racine and Kenosha Counties, Wisconsin: U.S. Geological Survey Open-File Report 75-653, 10 p.
- Green, J.H., 1975, Flow characteristics of the lower Wisconsin River: U.S. Geological Survey Open-File Report 75-582, 9 p.
- Holmstrom, B.K., 1975, Streamflow characteristics of Klawitter Creek basin near Westfield, Wisconsin: U.S. Geological Survey Open-File Report 75-527, 14 p.
- Krug, W.R., 1975, Analysis of operational plan for Lake Chippewa near Winter, Wisconsin: U.S. Geological Survey Open-File Report 75-487, 17 p.
- Holmstrom, B.K., 1975, Low-flow characteristics of the Eau Claire River basin near Antigo, Wisconsin: U.S. Geological Survey Open-File Report 75-336, 19 p.
- Lawrence, C.L., and Holmstrom, B.K., 1971, Floods on Yahara River, Lake Kegonsa dam to countyline, Dane County, Wisconsin: U.S. Geological Survey Open-File Report 72-0222, 10 p.
- Lawrence, C.L., and Holmstrom, B.K., 1972, Flood in Starkweather Creek basin, Madison, Wisconsin: U.S. Geological Survey Open-File Report 72-0221, 15 p.
- Holmstrom, B.K., and Lawrence, C.L., 1971, Floods on Yahara River, Lake Mendota to Lake Kegonsa, Dane County, Wisconsin: U.S. Geological Survey Open-File Report 72-0168, 12 p.
- Conger, D.H., 1971, Estimating magnitude and frequency of floods in Wisconsin: U.S. Geological Survey Open-File Report 71-0076, 200 p.
- Campbell, R.E., and Dreher, F.C., 1970, A proposed streamflow data program for Wisconsin: U.S. Geological Survey Open-File Report 70-0052, 55 p.
- Hamilton, L.J., 1970, Availability of ground water in the lower Wisconsin River Valley, Wisconsin: U.S. Geological Survey Open-File Report 69-0117, 45 p.
- Young, K.B., 1965, Effect of treated effluent diversion on Yahara River flow: U.S. Geological Survey Open-File Report 66-0157, 81 p.
- Young, K.B., 1963, Flow characteristics of Wisconsin streams: U.S. Geological Survey Open-File Report 64-0167, 151 p.
- U.S. Geological Survey, 1961, Wisconsin River near Dekorra, Wisconsin, flood-flow characteristics at proposed bridge site on the Wisconsin Freeway in Columbia County: U.S. Geological Survey Open-File Report 61-0045, 13 p.
- Erickson, D.W., 1961, Floods in Wisconsin, magnitude and frequency: U.S. Geological Survey Open-File Report 61-0044, 109 p.
- Spicer, H.C., and Edwards, G.J., 1955, Electrical resistivity measurements in the Neillsville area, Wisconsin: U.S. Geological Survey Open-File Report 55-0173, 34 p.
- \_\_\_\_\_, 1954, A resistivity survey to locate an aquifer in the glacial deposits near Marshfield, Wisconsin: U.S. Geological Survey Open-File Report 54-0291, 76 p.
- Gebert, W.A., 1974, Streamflow characteristics of Little Wolf River—Holt Creek basin near Galloway, Wisconsin: U.S. Geological Survey Open-File Report, 10 p.
- Grant, R.S., Krug, W.R., and Duerk, M.D., 1973, Floodplain and floodway delineation for regional flood in central Marathon County, Wisconsin: U.S. Geological Survey Open-File Report, 33 p.
- Holmstrom, B.K., Gebert, W.A., and Borman, R.G., 1973, Alder Creek hydrology, Wisconsin: U.S. Geological Survey Open-File Report, 28 p.
- Lawrence, C.L., and Holmstrom, B.K., 1972, Floods on Yahara River tributaries, Dane County, Wisconsin: U.S. Geological Survey Open-File Report, 19 p.
- Holmstrom, B.K., 1972, Drainage-area data for Wisconsin streams: U.S. Geological Survey Open-File Report, 74 p. (Updated 1973, 1974, 1978, and 1979.)
- Hindall, S.M., 1972, Sediment yields of Wisconsin streams: U.S. Geological Survey Open-File Report, 2 p.
- Weeks, E.P., and Stangland, H.G., 1971, Effects of irrigation on streamflow in the central sand plains of Wisconsin: U.S. Geological Survey Open-File Report, 113 p.
- Shearman, J.O., and Lawrence, C.L., 1971, Floods on Yahara River upstream from Lake Mendota, Dane County, Wisconsin: U.S. Geological Survey Open-File Report, 7 p.
- Gebert, W.A., 1971, Hydrology of Pine Creek: U.S. Geological Survey Open-File Report, 6 p.
- \_\_\_\_\_, 1971, Hulbert Creek hydrology, southwestern Wisconsin: U.S. Geological Survey Open-File Report, 11 p.
- Devaul, R.W., 1970, Base-flow study of East River Basin—Brown and Calumet Counties, Wisconsin: U.S. Geological Survey Open-File Report, 6 p.
- \_\_\_\_\_, 1970, Base-flow study of Suamico River Basin—Oconto, Brown, Shawano and Outagamie Counties, Wisconsin: U.S. Geological Survey Open-File Report, 6 p.
- \_\_\_\_\_, 1970, Base-flow study of Little Suamico River Basin—Oconto, Brown and Shawano Counties, Wisconsin: U.S. Geological Survey Open-File Report, 6 p.

- \_\_\_\_\_. 1970, Base-flow study of Duck Creek Basin—Brown and Outagamie Counties, Wisconsin: U.S. Geological Survey Open-File Report, 8 p.
- Gonthier, J.B., 1970, Water resources of southeastern Wisconsin—Milwaukee River basin: U.S. Geological Survey Open-File Report, 138 p. (Extensively used in preparation of “A comprehensive plan for the Milwaukee River watershed”, v. 1 and 2, 1970 and 1971, Southeastern Wisconsin Regional Planning Commission Report No. 13, v. 1, 514 p. and v. 2, 623 p.)
- Shearman, J.O., 1969, Evaluation of flood potential, part 2 of Flood-plain management—Lake Koshkonong: U.S. Geological Survey Open-File Report, 6 p.
- Young, K.B., 1965, Supplement to report on flow characteristics of Wisconsin streams: U.S. Geological Survey Open-File Report, 81 p.
- U.S. Geological Survey, 1964, Water-quality records in Michigan and Wisconsin: U.S. Geological Survey Open-File Report, 61 p.
- Drescher, W.J., 1948, Results of pumping tests on artesian wells in the Milwaukee-Waukesha area, Wisconsin: U.S. Geological Survey Open-File Report, 22 p.

## FACT SHEETS

- Garn, H.S., Elder, J.F., and Robertson, D.M., Lake Studies Team, 2003, Why study lakes? An overview of USGS lake studies in Wisconsin: U.S. Geological Survey Fact Sheet 063–03
- Hunt, R.J., Bradbury, K.R., and Krohelski, J.T., 2001, The effects of large-scale pumping and diversion on the water resources of Dane County, Wisconsin: U.S. Geological Survey Fact Sheet 127–01, 4 p.
- Hunt, R.J. and Steuer, J.J., 2001, Evaluating the effects of urbanization and land-use planning using ground-water and surface-water models: U.S. Geological Survey Fact Sheet 102–01, 4 p.
- Elder, J.F., and Robertson, D.M., 2000, Chemical composition of surficial sediment in Geneva Lake, Wisconsin: U.S. Geological Survey Fact Sheet 121–00, 4 p.
- Owens, D.W., Jopke, P., Hall, D.W., Balousek, J., and Roa, A., 2000, Soil erosion from two small construction sites, Dane County, Wisconsin: U.S. Geological Survey Fact Sheet 109–00, 4 p.
- Hunt, R.J., Graczyk, D.J., and Rose, W.J., 2000, Water flows in the Necedah National Wildlife Refuge: U.S. Geological Survey Fact Sheet 068–00, 4 p.
- Graczyk, D.J., Robertson, D.M., Rose, W.J., and Steuer, J.J., 2000, Comparison of water-quality samples collected by siphon samplers and automatic samplers in Wisconsin: U.S. Geological Survey Fact Sheet 067–00, 4 p.
- Graczyk, D.J., Vanden Brook, J.P., and Rheineck, B.D., 1999, Herbicides in the Pecatonica, Trempealeau, and Yahara Rivers in Wisconsin, May 1997–July 1998: U.S. Geological Survey Fact Sheet 167–99, 9 p.
- Wierl, J.A., Giddings, E.M.P., and Bannerman, R.T., 1998, Evaluation of a method for comparing phosphorus loads from barnyards and croplands in Otter Creek watershed, Wisconsin: U.S. Geological Survey Fact Sheet 168–98, 4 p.
- Rose, W.J., and Robertson, D.M., 1998, Hydrology, water quality, and phosphorus loading of Kirby Lake, Barron County, Wisconsin: U.S. Geological Survey Fact Sheet 066–98, 4 p.
- Stuntebeck, T.D., and Bannerman, R.T., 1998, Effectiveness of barnyard best management practices in Wisconsin: U.S. Geological Survey Fact Sheet 051–98, 4 p.
- Team for evaluating the Wisconsin Water-Monitoring Network, 1998, Plan for an integrated long-term water-monitoring network for Wisconsin: U.S. Geological Survey Fact Sheet 048–98, 4 p.
- Corsi, S.R., Graczyk, D.J., Owens, D.W., and Bannerman, R.T., 1997, Unit-area loads of suspended sediment, suspended solids, and total phosphorus from small watersheds in Wisconsin: U.S. Geological Survey Fact Sheet 195–97, 4 p.
- Graczyk, David J., and Vanden Brook, James P., 1997, Herbicides in the Pecatonica and Yahara Rivers in southwestern Wisconsin, May 1996–July 1996: U.S. Geological Survey Fact Sheet 175–97, 4 p.
- Lenz, B.N., 1997, Feasibility of combining two aquatic benthic macroinvertebrate community databases for water-quality assessment: U.S. Geological Survey Fact Sheet 132–97, 4 p.
- Hunt, R.J., 1996, Do created wetlands replace the wetlands that are destroyed: U.S. Geological Survey Fact Sheet 246–96, 4 p.
- Elder, J.F., and Goddard, G.L., 1996, Sediment and nutrient trapping efficiency of a constructed wetland near Delavan Lake, Wisconsin, 1993–1995: U.S. Geological Survey Fact Sheet 232–96, 4 p.
- Kammerer, P.A., Jr., 1996, Hydrology and water quality of Park Lake, south-central Wisconsin: U.S. Geological Survey Fact Sheet 197–96, 4 p.
- Matzen, A.M., and Saad, D.A., 1996, Pesticides in ground water in the Western Lake Michigan drainages, Wisconsin and Michigan, 1983–1995: U.S. Geological Survey Fact Sheet 192–96, 4 p.
- U.S. Geological Survey, 1996, Real-time streamflow conditions: U.S. Geological Survey Fact Sheet 190–96, 2 p.
- Krabbenhof, D.P., 1996, Mercury studies in the Florida Everglades: U.S. Geological Survey Fact Sheet 166–96, 4 p.
- Fitzgerald, S.A., and Steuer, J.J., 1996, The Fox River PCB transport study—stepping stone to a healthy Great Lakes ecosystem: U.S. Geological Survey Fact Sheet 116–96, 4 p.
- Sullivan, D.J., and Richards, K.D., 1996, Pesticides in streams in the Western Lake Michigan drainages, Wisconsin and Michigan, 1993–95: U.S. Geological Survey Fact Sheet 107–96, 4 p.
- Stuntebeck, T.D., 1995, Evaluating barnyard best management practices in Wisconsin using upstream-downstream monitoring: U.S. Geological Survey Fact Sheet 221–95, 4 p.
- Robertson, Dale M., and Saad, David A., 1995, Environmental factors used to subdivide the Western Lake Michigan Drainages into relatively homogeneous units for water-quality site selection: U.S. Geological Survey Fact Sheet 220–95, 4 p.
- Krabbenhof, D.P., and Rickert, D.A., 1995, Mercury contamination of aquatic ecosystems: U.S. Geological Survey Fact Sheet 216–95, 4 p.
- Saad, D.A., 1995, Nitrate in ground water in the Western Lake Michigan Drainage Basin, Wisconsin and Michigan: U.S. Geological Survey Fact Sheet 070–94, 2 p.
- Drescher, W.J., 1948, Results of pumping tests on artesian wells in the Milwaukee-Waukesha area, Wisconsin: U.S. Geological Survey Open-File Report, 22 p.

## WATER-SUPPLY PAPERS

- Kammerer, P.A., Jr., and Krug, W.R., 1993, Wisconsin stream water quality, in U.S. Geological Survey, National water summary 1990–91—Hydrologic events and stream water quality: U.S. Geological Survey Water-Supply Paper 2400, p. 561–568.
- Melcher, N.B., and Walker, J.F., 1992, Evaluation of selected methods for determining streamflow during periods of ice effect: U.S. Geological Survey Water-Supply Paper 2378, 47 p.
- U.S. Geological Survey, 1991, National water summary 1988–89—Hydrologic Events and Floods and Droughts: U.S. Geological Survey Water-Supply Paper 2375, 591 p.
- U.S. Geological Survey, 1990, National water summary 1987—Hydrologic events and water supply and use: U.S. Geological Survey Water-Supply Paper 2350, 553 p.
- \_\_\_\_\_, 1988, National water summary 1986—Hydrologic events, selected water-quality trends, and ground-water quality: U.S. Geological Survey Water-Supply Paper 2325, 569 p.
- \_\_\_\_\_, 1986, National water summary 1985—Hydrologic events and surface-water resources: U.S. Geological Survey Water-Supply Paper 2300, 506 p.
- \_\_\_\_\_, 1985, National water summary 1984—Hydrologic events, selected water-quality trends, and ground-water resources: U.S. Geological Survey Water-Supply Paper 2275, 467 p.
- \_\_\_\_\_, 1984, National water summary 1983—Hydrologic events and issues: U.S. Geological Survey Water-Supply Paper 2250, 243 p.
- Batten, W.G., and Hindall, S.M., 1980, Sediment deposition in the White River Reservoir, northwestern Wisconsin: U.S. Geological Survey Water-Supply Paper 2069, 30 p.
- Sherrill, M.G., 1978, Geology and ground water in Door County, Wisconsin, with emphasis on contamination potential in the Silurian dolomite: U.S. Geological Survey Water-Supply Paper 2047, 38 p.
- Hurtgen, D.C., 1975, Summary of floods, June 29–30 in southwestern Wisconsin, in Summary of floods in the United States during 1969: U.S. Geological Survey Water-Supply Paper 2030, p. 116–119.
- Bell, E.A., and Sherrill, M.G., 1974, Water availability in central Wisconsin—an area of near-surface crystalline rock: U.S. Geological Survey Water-Supply Paper 2022, 32 p.
- Novitzki, R.P., 1973, Improvement of trout streams in Wisconsin by augmenting low flows with ground water: U.S. Geological Survey Water-Supply Paper 2017, 52 p.
- Oakes, Edward, Field, S.J., and Seeger, L.P., 1973, The Pine-Popple River basins—hydrology of a wild river area, northeastern Wisconsin: U.S. Geological Survey Water-Supply Paper 2006, 57 p.
- Hamilton, L.J., 1971, Water for cranberry culture in the Cranmoor area of central Wisconsin: U.S. Geological Survey Water-Supply Paper 1999–I, 20 p.
- Hurtgen, D.C., 1972, Floods of March 27–April 4, 1967, in northwestern and west-central Wisconsin, in summary of floods in the United States during 1967: U.S. Geological Survey Water-Supply Paper 1880–C, p. 7–10.
- Hutchinson, R.D., 1970, Ground-water resources of Racine and Kenosha Counties, Wisconsin: U.S. Geological Survey Water-Supply Paper 1878, 63 p.
- Olcott, P.G., 1966, Geology and water resources of Winnebago County, Wisconsin: U.S. Geological Survey Water-Supply Paper 1814, 61 p.
- Weeks, E.P., Erickson, D.W., and Holt, C.L.R., Jr., 1965, Hydrology of the Little Plover River basin, Portage County, Wisconsin, and the effects of water-resources development: U.S. Geological Survey Water-Supply Paper 1811, 78 p.
- Green, J.H., and Hutchinson, R.D., 1965, Ground-water pumpage and water-level changes in the Milwaukee-Waukesha area, Wisconsin, 1950–61: U.S. Geological Survey Water-Supply Paper 1809–I, 19 p.
- Summers, W.K., 1965, Geology and ground-water resources of Waushara County, Wisconsin: U.S. Geological Survey Water-Supply Paper 1809–B, 32 p.
- Holt, C.L.R., Jr., and Knowles, D.B., 1963, The water situation in Wisconsin in the role of ground water in the national water situation: U.S. Geological Survey Water-Supply Paper 1800, p. 943–960.
- Cline, D.R., 1965, Geology and ground-water resources of Dane County, Wisconsin: U.S. Geological Survey Water-Supply Paper 1779–U, 64 p.
- Holt, C.L.R., Jr., 1965, Geology and water resources of Portage County, Wisconsin: U.S. Geological Survey Water-Supply Paper 1796, 77 p.
- Berkstresser, C.F., Jr., 1964, Ground-water resources of Waupaca County, Wisconsin: U.S. Geological Survey Water-Supply Paper 1669–U, 38 p.
- Knowles, D.B., 1964, Ground-water conditions in the Green Bay area, Wisconsin, 1950–60: U.S. Geological Survey Water-Supply Paper 1669–J, 37 p.
- Cline, D.R., 1963, Hydrology of upper Black Earth Creek basin, Wisconsin, with a section on surface water by M.W. Busby: U.S. Geological Survey Water-Supply Paper 1669–C, 27 p.
- Collier, C.R., 1963, Sediment characteristics of small streams in southern Wisconsin, 1954–59: U.S. Geological Survey Water-Supply Paper 1669–B, 34 p.
- LeRoux, E.F., 1963, Geology and ground-water resources of Rock County, Wisconsin: U.S. Geological Survey Water-Supply Paper 1619–X, 50 p.
- Newport, T.G., 1962, Geology and ground-water resources of Fond du Lac County, Wisconsin: U.S. Geological Survey Water-Supply Paper 1604, 52 p.
- Knowles, D.B., Dreher, F.C., and Whetstone, G.W., 1964, Water resources of the Green Bay area, Wisconsin: U.S. Geological Survey Water-Supply Paper 1499–G, 66 p.
- LeRoux, E.F., 1957, Geology and ground-water resources of Outagamie County, Wisconsin: U.S. Geological Survey Water-Supply Paper 1421, 57 p.
- Harger, A.H., and Drescher, W.J., 1954, Ground-water conditions in southwestern Langlade County, Wisconsin: U.S. Geological Survey Water-Supply Paper 1294, 39 p.
- Foley, F.C., Walton, W.D., and Drescher, W.J., 1953, Ground-water conditions in the Milwaukee-Waukesha area, Wisconsin: U.S. Geological Survey Water-Supply Paper 1229, 96 p.

## HYDROLOGIC INVESTIGATIONS ATLASES

- Kammerer, Phil A., Jr., Trotta, Lee C., Krabbenhoft, David P., and Lidwin, R.A., 1998, Geology, ground-water flow, and dissolved solids concentrations in ground water along hydrogeologic sections through Wisconsin aquifers, U.S. Geological Survey Hydrologic Investigations Atlas HA-731, 4 sheets.
- Gebert, W.A., Graczyk, D.J., and Krug, W.R., 1987, Average annual runoff in the United States, 1951-80: U. S. Geological Survey Hydrologic Investigations Atlas HA-710, 1 sheet.
- Hughes, P.E., Hannuksela, J. S., and Danchuk, W.J., 1981, Flood of July 1-5, 1978, on the Kickapoo River, Southwestern Wisconsin: U.S. Geological Survey Hydrologic Investigations Atlas HA-653, 7 sheets.
- Oakes, E.L., and Cotter, R.D., 1975, Water resources of Wisconsin—upper Wisconsin River basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-536, 3 sheets.
- Young, H.L., and Skinner, E.L., 1974, Water resources of Wisconsin—Lake Superior basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-524, 3 sheets.
- Hindall, S.M., and Borman, R.G., 1974, Water resources of Wisconsin—lower Wisconsin River basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-479, 3 sheets.
- Young, H.L., and Borman, R.D., 1973, Water resources of Wisconsin—Trempealeau-Black River basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-474, 4 sheets.
- Oakes, E.L., and Hamilton, L.J., 1973, Water resources of Wisconsin—Menominee-Oconto-Peshigo River basin, U.S. Geological Survey Hydrologic Investigations Atlas HA-470, 4 sheets.
- Hindall, S.M., and Skinner, E.L., 1973, Water resources of Wisconsin—Pecatonica-Sugar River basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-453, 3 sheets.
- Young, H.L., and Hindall, S.M., 1973, Water resources of Wisconsin—St. Croix River basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-451, 4 sheets.
- Skinner, E.L., and Borman, R.G., 1973, Water resources of Wisconsin—Lake Michigan basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-432, 4 sheets.
- Shearman, J.O., and Holmstrom, B.K., 1971, Floods on Rock River in southwestern Jefferson County, Wisconsin: U.S. Geological Survey Hydrologic Investigations Atlas HA-413, 1 sheet.
- \_\_\_\_\_, 1971, Floods on Rock River in northeastern Jefferson County, Wisconsin: U.S. Geological Survey Hydrologic Investigations Atlas HA-394, 1 sheet.
- Sherman, J.O., 1970, Floods on Rock River in northern Rock County, Wisconsin: U.S. Geological Survey Hydrologic Investigations Atlas HA-393, 1 sheet.
- Gebert, W.A., 1971, Low-flow frequency of Wisconsin streams: U.S. Geological Survey Hydrologic Investigations Atlas HA-390, 1 sheet.
- Young, H.L., and Hindall, S.M., 1972, Water resources of Wisconsin—Chippewa River basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-386, 4 sheets.
- Hindall, S.M., and Flint, R.F., 1971, Sediment yields of Wisconsin streams: U.S. Geological Survey Hydrologic Investigations Atlas HA-376, 1 sheet.

- Deval, R.W., and Green, J.H., 1971, Water resources of Wisconsin—central Wisconsin River basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-367, 4 sheets.
- Cotter, R.D., Hutchinson, R.D., Skinner, E.L., and Wentz, D.A., 1969, Water resources of Wisconsin—Rock-Fox River basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-360, 4 sheets.
- Olcott, P.G., 1968, Water resources of Wisconsin—Fox-Wolf River basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-321, 4 sheets.
- U.S. Geological Survey, 1965, Preliminary map of the conterminous United States showing depth to and quality of shallowest ground water containing more than 1,000 parts per million dissolved solids: U.S. Geological Survey Hydrologic Investigations Atlas HA-199, 31 p., 2 sheets.

## PROFESSIONAL PAPERS

- Young, H.L., 1992, Summary of ground-water hydrology of the Cambrian-Ordovician aquifer system in the northern midwest, United States: U.S. Geological Survey Professional Paper 1405-A, 55 p.
- \_\_\_\_\_, 1992, Hydrogeology of the Cambrian-Ordovician aquifer system in the northern midwest, United States: U.S. Geological Survey Professional Paper 1405-B, 99 p., 1 pl.
- Mandle, R.J., and Kontis, A.L., 1992, Simulation of regional ground-water flow in the Cambrian-Ordovician aquifer system in the northern midwest, United States: U.S. Geological Survey Professional Paper 1405-C, 97 p.
- Siegel, D.I., 1989, Geochemistry of the Cambrian-Ordovician aquifer system in the northern midwest, United States: U.S. Geological Survey Professional Paper 1405-D, 76 p.
- Green, J.H., 1968, The Troy Valley of southeastern Wisconsin: U.S. Geological Survey Professional Paper 600-C, p. 135-139.
- Carey, K.L., 1967, The underside of river ice, St. Croix River, Wisconsin: U.S. Geological Survey Professional Paper 575-C, p. 195-199.
- \_\_\_\_\_, 1966, Observed configuration and computed roughness of the underside of river ice, St. Croix River, Wisconsin: U.S. Geological Survey Professional Paper 550-B, p. 192-198.
- Weeks, E.P., 1964, Field methods for determining vertical permeability and aquifer anisotropy: U.S. Geological Survey Professional Paper 501-D, p. 193-198.
- \_\_\_\_\_, 1964, Use of water-level recession curves to determine the hydraulic properties of glacial outwash in Portage County, Wisconsin: U.S. Geological Survey Professional Paper 501-B, p. 181-184.

## OPEN-FILE MAPS

- Gonthier, J.B., 1979, Water-table map of Waukesha County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Open-File Map 79-43, 1 pl.
- Sherrill, M.G., and Erickson, J.R., 1979, Water-table map of Walworth County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Open-File Map 79-42, 1 pl.

- Sherrill, M.G., and Schiller, J.J., 1979, Water-table map of Racine County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Open-File Map 79-41, 1 pl.
- Sherrill, M.G., Schiller, J.J., and Erickson, J.R., 1979, Water-table map of Milwaukee County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Open-File Map 79-40, 1 pl.
- Sherrill, M.G., and Schiller, J.J., 1979, Water-table map of Kenosha County, Wisconsin: U.S. Geological Survey Water-Resources Investigations Open-File Map 79-39, 1 pl.
- Borman, R.G., 1976, Thickness of unconsolidated materials of Walworth County, Wisconsin: U.S. Geological Survey Open-File Report 76-465, scale 1:62,500.
- \_\_\_\_\_, 1976, Water-table map of Walworth County, Wisconsin: U.S. Geological Survey Open-File Report 76-464, scale 1:62,500.
- \_\_\_\_\_, 1976, Bedrock topography of Walworth County, Wisconsin: U.S. Geological Survey Open-File Report 76-463, scale 1:62,500.
- \_\_\_\_\_, 1976, Bedrock geology of Walworth County, Wisconsin: U.S. Geological Survey Open-File Report 75-462, scale 1:62,500.
- Gonthier, J.B., 1975, Bedrock topography of Waukesha County, Wisconsin: U.S. Geological Survey Open-File Report 75-572, scale 1:62,500.
- \_\_\_\_\_, 1975, Water-table map of Waukesha County, Wisconsin: U.S. Geological Survey Open-File Report 75-571, scale 1:62,500.
- \_\_\_\_\_, 1975, Bedrock geology of Waukesha County, Wisconsin: U.S. Geological Survey Open-File Report 75-570, scale 1:62,500.
- Borman, R.G., 1971, Preliminary map showing thickness of glacial deposits in Wisconsin: U.S. Geological Survey Open-File Report, scale 1:2,500,000.
- \_\_\_\_\_, 1971, Preliminary map of probable well yields from bedrock in Wisconsin: U.S. Geological Survey Open-File Report, scale 1:2,500,000.
- \_\_\_\_\_, 1971, Preliminary map of probable well yields from glacial deposits in Wisconsin: U.S. Geological Survey Open-File Report, scale 1:2,500,000.
- WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY INFORMATION CIRCULARS**
- Batten, W.G., 1989, Hydrogeology of Wood County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 60, 27 p., 2 pls.
- Patterson, G.L., and Zaporozec, Alexander, 1988, Analysis of water-level fluctuations in Wisconsin wells: Wisconsin Geological and Natural History Survey Information Circular 63, 38 p.
- Batten, W.G., 1987, Water resources of Langlade County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 58, 28 p., 1 pl.
- Krohelski, J.T., 1986, Hydrogeology and ground-water use and quality, Brown County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 57, 42 p.
- House, L.B., 1986, Stage fluctuations of Wisconsin Lakes: Wisconsin Geological and Natural History Survey Information Circular No. 49, 84 p.
- Devaul, R.W., Harr, C.A., and Schiller, J.J., 1983, Ground-water resources and geology of Dodge County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 44, 34 p.
- Erickson, R.M., and Cotter, R.D., 1983, Trends in ground-water levels in Wisconsin through 1981: Wisconsin Geological and Natural History Survey Information Circular 43, 139 p.
- Novitzki, R.P., 1982, Hydrology of Wisconsin Wetlands: Wisconsin Geological and Natural History Survey Information Circular 40, 22 p.
- Kammerer, Phil A., Jr., Ground-water quality atlas of Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 39, 39 p.
- Young, H.L., and Batten, W.G., 1980, Ground-water resources and geology of Washington and Ozaukee Counties, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 38, 37 p.
- Harr, C.A., Trotta, L.C., and Borman, R.G., 1978, Ground-water resources and geology of Columbia County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 37, 30 p.
- Hindall, S.M., 1978, Effects of irrigation on water quality in the sand plain of central Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 36, 50 p.
- Borman, R.G., 1976, Ground-water resources and geology of Walworth County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 34, 45 p.
- Borman, R.G., and Trotta, L.C., 1976, Ground-water resources and geology of Jefferson County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 33, 31 p.
- Borman, R.G., 1976, Ground-water resources and geology of St. Croix County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 32, 30 p.
- Bell, E.A., and Hindall, S.M., 1975, The availability of ground water for irrigation in the Rice Lake-Eau Claire area, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 31, 65 p.
- McLeod, R.S., 1975, A digital-computer model for estimating hydrologic changes in the aquifer system in Dane County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 30, 40 p.
- Gonthier, J.B., 1975, Ground-water resources of Waukesha County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 29, 47 p.
- McLeod, R.S., 1975, A digital-computer model for estimating drawdown in the sandstone aquifer in Dane County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 28, 91 p.
- Holt, C.L.R., Jr., and Skinner, E.L., 1973, Ground-water quality in Wisconsin through 1972: Wisconsin Geological and Natural History Survey Information Circular 22, 148 p.
- Erickson, R.M., 1972, Trends in ground-water levels in Wisconsin, 1967-71: Wisconsin Geological and Natural History Survey Information Circular 21, 40 p. (Supplement to Information Circular 9).
- Holt, C.L.R., Jr., Cotter, R.D., Green, J.H., and Olcott, P.G., 1970, Hydrogeology of the Rock-Fox River basin of southeastern Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 17, 47 p. (Prepared for the Annual Meeting of the Geological Society of America-Field Trip Guidebook).
- Devaul, R.W., 1967, Trends in ground-water levels in Wisconsin through 1966: Wisconsin Geological and Natural History Survey Information Circular 9, 109 p.

Ryling, R.W., 1961, A preliminary study of the distribution of saline water in the bedrock aquifers of eastern Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 5, 23 p.

Drescher, W.J., 1956, Ground water in Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 3, 37 p.

\_\_\_\_\_, 1955, Some effects of precipitation on ground water in Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 1, 17 p.

## WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY MISCELLANEOUS PAPERS

Patterson, G.L., 1989, Water resources of Vilas County, Wisconsin: Wisconsin Geological and Natural History Survey Miscellaneous Paper 89-1, 46 p.

## OTHER PUBLICATIONS

Cancilla, D.A., Baird, J.C., Geis, S.W., and Corsi, S.R., 2003, Studies of the environmental fate and effect of aircraft deicing fluids—detection of 5-Methyl-1H-Benzotriazole in the fathead minnow (*Pimephales Promelas*): Environmental Toxicology and Chemistry, v. 22, no. 1, p. 134–140.

Corsi, S.R., Walker, J.F., Waschbusch, R.J., and Standridge, J., 2003, Sources and variability of *Cryptosporidium* in the Milwaukee River watershed: Water Environmental Research Foundation, 99-HHE-2, ES-1-G-6,

Corsi, S.R., Zitomer, D.H., Field, J.A., and Cancilla, D.A., 2003, Nonylphenol ethoxylates and other additives in aircraft deicers, antiicers, and waters receiving airport runoff: Environmental Science and Technology, v. 37, no. 18, p. 4031–4037.

Robertson, D.M., 2003, Influence of different temporal sampling strategies on estimating total phosphorus and suspended sediment concentration and transport in small streams: Journal of the American Water Resources Association, v. 39, no. 5, p. 1281–1308.

Robertson, D.M., and Saad, D.A., October 2003, Environmental water-quality zones for streams: Environmental Management, v. 31, no. 5, p. 581–602.

Hunt, R.J., Haitjema, H.M., Krohelski, J.T., and Feinstein, D.T., March–April 2003, Simulating ground water-lake interactions—approaches and insights: Ground Water, v. 41, no. 2, p. 227–237.

Krabbenhoft, D.P., Olson, M.L., Dewild, J.F., Clow, D.W., Striegl, R.G., Dornblaser, M.M., and Vanmetre, P., 2002, Mercury loading and methylmercury production and cycling in high-altitude lakes from the Western United States: Water, Air, and Soil Pollution—Focus, v. 2, p. 233–249.

Bravo, H.R., Jiang, F., and Hunt, R.J., 2002, Using groundwater temperature data to constrain parameter estimation in a groundwater flow model of a wetland system: Water Resources Research, v. 38, no. 8, p. 28/1–28/9.

Anderson, M.P., Hunt, R.J., Krohelski, J.T., and Chung, K., March–April 2002, Using high hydraulic conductivity nodes to simulate seepage lakes: Ground Water, v. 40, no. 2, p. 117–122.

Kelson, V.A., Hunt, R.J., Haitjema, H.M., March–April 2002, Improving a regional model using reduced complexity and parameter estimation: Ground Water, v. 40, no. 2, p. 132–143.

Fitzpatrick, F.A., Scudder, B.C., Lenz, B.N., and Sullivan, D.J., December 2001, Effects of multi-scale environmental characteristics on agricultural stream biota in eastern Wisconsin: Journal of the American Water Resources Association, v. 37, no. 6, p. 1,489–1,507.

Lott, R.B., and Hunt, R.J., December 2001, Estimating evapotranspiration in natural and constructed wetlands: Wetlands, v. 21, no. 4, p. 614–628.

Fitzpatrick, F.A., 2001, A comparison of multi-disciplinary methods for measuring physical conditions of streams: Chapter in the American Geophysical Union, Geomorphic Processes and Riverine Habitat, v. 4, p. 7–18.

Corsi, S.R., Booth, N.L., and Hall, D.W., 2001, Aircraft and runway deicers at General Mitchell International Airport, Milwaukee, Wisconsin, USA. 1. Biochemical oxygen demand and dissolved oxygen in receiving streams: Environmental Toxicology and Chemistry, v. 20, no. 7, p. 1,474–1,482.

Corsi, S.R., Booth, Hall, D.W., and Geis, S.W., 2001, Aircraft and runway deicers at General Mitchell International Airport, Milwaukee, Wisconsin, USA. 2. Toxicity of aircraft and runway deicers: Published in Environmental Toxicology and Chemistry, v. 20, no. 7, p. 1,483–1,490.

Hunt, R.J., Steuer, J.J., Mansor, M.T.C., and Bullen, T.D., September–October 2001, Delineating a recharge area for a spring using numerical modeling, Monte Carlo Techniques, and Geochemical Investigation: Ground Water, v. 39, no. 5, p. 702–712.

Robertson, D.M., Goddard, G.L., Helsel, D.R., and MacKinnon, K.L., 2000, Rehabilitation of Delavan Lake, Wisconsin: Lake and Reservoir Management, v. 16, no. 3, p. 155–176.

Fitzpatrick, F.A., and Knox, J.C., 2000, Spatial and temporal sensitivity of hydrogeomorphic response and recovery to deforestation, agriculture, and floods: Physical Geography, v. 21, no. 2, p. 89–108.

Robertson, D.M., Wynne, R.H., and Chang, W.Y.B., December 2000, Influence of El Nino on lake and river ice cover in the northern hemisphere from 1900 to 1995: Verh. Internat. Verein. Limnology, v. 27, p. 2,784–2,788.

Elder, J.F., Rybicki, N.B., Carter, V., and Weintraub, V., March 2000, Sources and yields of dissolved carbon in northern Wisconsin stream catchments with differing amounts of peatland: Wetlands, v. 20, no. 1, p. 113–125.

Robertson, D.M. and Richards, K.D., 2000, Influence of Different Temporal sampling strategies on estimating loads and maximum concentrations in small streams in the National Water Quality Monitoring Council Conference—proceedings, April 25–27, 2000, p. 209–223.

Hunt, R. and Zheng, C., 1999, Newsletter: Debating complexity in modeling; Eos, Transactions, American Geophysical Union, v. 80, no. 3, p. 29.

Hunt, R.J., Walker, J.F., and Krabbenhoft, D.P., 1999, Characterizing hydrology and the importance of ground-water discharge in natural and constructed wetlands: Wetlands, v. 2, no. 19, p. 458–472.

Lathrop, R.C., Carpenter, S.R., and Robertson, D.M., 1999, Summer water clarity responses to phosphorus, Daphnia grazing, and internal mixing in Lake Mendota: Limnology and Oceanography, v. 44, no. 1, p. 137–146.

Panuska, J.C., and Robertson, D.M., 1999, Estimating phosphorus concentrations following alum treatment using apparent settling velocities: Lakes and Reservoir Management, v. 15, no. 1, p. 28–38.

- Cleckner, L.B., Garrison, P.J., Hurley, J.P., Olson, M.L., and Krabbenhoft, D.P., 1998, Trophic transfer of methyl mercury in the northern Florida Everglades: *Biogeochemistry*, v. 40, p. 347–361.
- Hunt, R.J., Anderson, M.P., and Kelson, V.A., 1998, Improving a complex finite difference groundwater-flow model through the use of an analytic element screening model: *Ground Water*, v. 36, no. 6, p. 1,011–1,017.
- Hunt, R.J., Bullen, T.D., Krabbenhoft, D.P., and Kendall, C., 1998, Using stable isotopes of water and strontium to investigate the hydrology of a natural and constructed wetland: *Ground Water*, v. 36, no. 3, p. 434–443.
- Hurley, J.P., Krabbenhoft, D.P., Cleckner, L.B., Olson, M.L., Aiken, G.R., and Rawlik Jr., P.S., 1998, System controls on the aqueous distribution of mercury in the northern Florida Everglades: *Biogeochemistry*, v. 40, p. 293–311.
- Krabbenhoft, David P., Gilmour, Cynthia C., Benoit, Janina M., Babiarz, Christopher L., Andren, Anders W., and Hurley, James P., 1998, Methyl mercury dynamics in littoral sediments of a temperate seepage lake: *Canadian Journal of Fisheries and Aquatic Sciences*, v. 55, no. 4, p. 835–844.
- Krabbenhoft, David P., Hurley, James P., Olson, Mark L., and Cleckner, Lisa B., 1998, Diel variability of mercury phase and species distributions in the Florida Everglades: *Biogeochemistry*, v. 40, p. 311–325.
- Peters, C.A., and others, 1998, Water-quality in the western Lake Michigan drainages, Wisconsin and Michigan, 1992–95: U.S. Geological Survey Circular 1156, 40 p.
- Robertson, D.M., Elder, J.F., Goddard, G.L., and James, W.F., 1998, Dynamics in phosphorus retention in wetlands upstream of Delavan Lake, Wisconsin: *Lakes and Reservoir Management*, v. 14, no. 4, p. 466–477.
- Schindler, John E., and Krabbenhoft, David P., 1998, The hyporheic zone as a source of dissolved organic carbon and carbon gases to a temperate forested stream: *Biogeochemistry*, v. 43, p. 157–174.
- Team for Evaluating the Wisconsin Water-Monitoring Network, 1998, An integrated water-monitoring network for Wisconsin: University of Wisconsin Water Resources Center Special Report WRC SR 98–01, 62 p.
- Thorstenson, Donald C., Weeks, Edwin P., Haas, Herbert, Busenberg, Eurybiades, Plummer, L. Niel., and Peters, Charles A., 1998, Chemistry of unsaturated zone gases sampled in open boreholes at the crest of Yucca Mountain, Nevada: Data and basic concepts of chemical and physical processes in the mountain: *Water Resources Research*, v. 34, no. 6, p. 1,507–1,529.
- Walker, J.F., and Krabbenhoft, D.P., 1998, Groundwater and surface-water interactions in riparian and lake-dominated systems in McDonnell, J.J., and Kendall, C., eds., *Isotopic tracers in catchment hydrology*: Elsevier, Amsterdam, The Netherlands, p. 467–486.
- Fitzgerald, S.A., and Steuer, J.J., 1997, Polychlorinated biphenyls (PCBs) as probes of biogeochemical processes in rivers, in *Molecular Markers in Environmental Geochemistry*, Eganhouse, R.P., ed.: American Chemical Society Symposium Series, p. 382–397.
- Fitzgerald, S.A., and Steuer, J.J., 1997, Polychlorinated biphenyls (PCBs) as probes of biogeochemical processes in rivers, American Chemical Society Annual Meeting, Orlando, Florida, August 1996.
- Hornewer, N.J., Johnson, G.P., Robertson, D.M., and Hondzo, M., 1997, Field-scale tests for determining mixing patterns associated with coarse-bubble air diffuser configurations, Egan Quarry, Illinois, in *Environmental and Coastal Hydraulics: Protecting the Aquatic Habitat*, proceedings of the International Association of Hydraulic Research, San Francisco, CA, USA, p. 57–63.
- Hunt, R.J., Krabbenhoft, D.P., and Anderson, M.P., 1997, Assessing hydrogeochemical heterogeneity in natural and constructed wetlands: *Biogeochemistry*, v. 39, p. 271–293.
- Olson, M.L., Cleckner, L.B., Hurley, J.P., Krabbenhoft, D.P., and Heelan, T.W., 1997, Resolution of matrix effects on analysis of total and methyl mercury in aqueous samples from the Florida Everglades: *Fresenius Journal of Analytical Chemistry*, v. 358, p. 392–396.
- Robertson, D.M., 1997, Regionalized loads of sediment and phosphorus to Lakes Michigan and Superior—High flow and long-term average: *Journal of Great Lakes Research*, v. 23, p. 416–439.
- Walker, J.F., and Wang, D., 1997, Measurement of flow under ice covers in North America: *Journal of Hydraulic Engineering*, v. 123, no. 11, p. 1,037–1,040.
- Anderson, W.L., Robertson, D.M., and Magnuson, J.J., 1996, Evidence of recent warming and El Niño-related variation in ice breakup of Wisconsin lakes: *Limnology and Oceanography*, v. 41, p. 815–821.
- Bullen, T.D., Krabbenhoft, D.P., and Kendall, C., 1996, Kinetic and mineralogic controls on the evolution of groundwater chemistry and  $^{87}\text{Sr}/^{86}\text{Sr}$  in a sandy silicate aquifer, northern Wisconsin: *Geochimica Cosmochimica Acta*, v. 60, p. 1,807–1,821.
- Elder, J.F., James, R.V., and Steuer, J.J., 1996, Mobility of 2,2',5,5'-tetrachlorobiphenyl in model systems containing bottom sediments and water from an industrialized river basin in northeastern Wisconsin: *Journal of Great Lakes Research*, v. 22, no. 3, p. 697–706.
- Gebert, Warren A. and Krug, William R., 1996, Streamflow trends in Wisconsin's driftless area: *Journal of the American Water Resources Association*, v. 32, no. 4, p. 733–744.
- Hunt, R.J., Krabbenhoft, D.P., and Anderson, M.P., 1996, Groundwater inflow measurements in wetland systems: *Water Resources Research*, v. 32, no. 3, p. 495–507.
- Hunt, R.J., and Krohelski, J.T., 1996, The application of an analytic element model to investigate ground-water lake interactions at Pretty Lake, Wisconsin: *Journal of Lakes and Reservoir Management*, v. 12, no. 4, p. 487–495.
- Imberger, J., Robertson, D.M., and Boland, K., 1996, Lake Number—A quantitative indicator of mixing to be used in water quality management: *Scientific Impeller*, Solna, Sweden, no. 4, p. 9–15.
- Klump, J.V., Edgington, D.N., Sager, P.E., and Robertson, D.M., 1996, The biogeochemistry of Green Bay—1. Sedimentary phosphorus cycling in a phosphorus mass balance for the Green Bay ecosystem: *Canadian Journal of Fisheries and Aquatic Sciences*, v. 54, no. 1, p. 10–26.
- Krug, W.R., 1996, Simulation of temporal changes in rainfall-runoff characteristics, Coon Creek Basin, Wisconsin: *Journal of the American Water Resources Association*, v. 32, no. 4, p. 745–752.
- Assel, R.A., and Robertson, D.M., 1995, Changes in winter air temperatures near Lake Michigan, 1851–1993, as determined from regional lake-ice records: *Limnology and Oceanography*, v. 40, no. 1, January 1995, p. 165–176.



- Assel, R.A., Robertson, D.M., Hoff, M.H., and Selgeby, J.H., 1995, Climatic-change implications from long-term (1823–1994) ice records near the Laurentian Great Lakes: *Annals of Glaciology*, v. 21, p. 383–386.
- Greb, S.R., and Graczyk, D.J., 1995, Frequency duration analysis of dissolved-oxygen concentrations in two southwestern Wisconsin streams: *Water Resources Bulletin*, American Water Resources Association, v. 31, no. 3, June 1995, p. 431–438.
- Kendall, C., and Krabbenhoft, D.P., 1995, Applications of isotopes to tracing sources of solutes and water *in* shallow systems in Charbeneau, R.J., ed., *Groundwater Management*, proceedings of the international symposium, August 1995, San Antonio, Tx, American Association of Civil Engineers, p. 390–395.
- Krabbenhoft, D.P., Benoit, J.M., Babiarz, C.L., Hurley, J.P., and Andren, A.W., 1995, Mercury cycling in the Allequash Creek watershed, northern Wisconsin: *Water, Air, and Soil Pollution*, v. 80, nos. 1/4, February 1995, p. 425–433.
- Krabbenhoft, D.P., and Webster, K.E., 1995, Transient hydrogeological controls on the chemistry of a seepage lake: *Water Resources Research*, v. 31, no. 9, September 1995, p. 2,295–2,305.
- Velleux, M., Endicott, D., Steuer, J., Jaeger, S., and Patterson, D., 1995, Long-term simulation of PCB export from the Fox River to Green Bay: *Journal of Great Lakes Research*, International Association for Great Lakes Research, v. 21, no. 3, 1995, p. 359–372.
- Wentz, D.A., Rose, W.J., and Webster, K.E., 1995, Long-term hydrologic and biogeochemical responses of a soft water seepage lake in north central Wisconsin: *Water Resources Research*, v. 31, no. 1, January 1995, p. 199–212.
- Elder, J.F., 1994, Distribution and grain-size partitioning of metals in bottom sediments of an experimentally acidified Wisconsin lake: *Water Resources Bulletin*, v. 30, no. 2, p. 251–259.
- Hurley, J.P., Krabbenhoft, D.P., Babiarz, C.L., and Andren, A.W., 1994, Cycling processes of mercury across sediment/water interfaces in seepage lakes *in* Baker, L.A., ed., *Environmental Chemistry of Lakes and Reservoirs: Advances in Chemistry Series*, American Chemical Society, Washington, D.C., p. 426–449.
- Krabbenhoft, D.P., Bowser, C.J., Kendall, C., and Gat, J.R., 1994, Use of oxygen-18 and deuterium to assess the hydrology of groundwater/lake systems *in* Baker, L.A., ed., *Environmental Chemistry of Lakes and Reservoirs: Advances in Chemistry Series*, American Chemical Society, Washington, D.C., p. 67–90.
- Robertson, D.M., Anderson, W., and Magnuson, J.J., 1994, Relations between El Nino/Southern Oscillation events and the climate and ice cover of lakes in Wisconsin, p. 48–57. *in* Greenland, D. ed., *El Nino and Long-Term Ecological Research (LTER) Sites*, Publication no. 18, LTER Network Office: University of Washington, Seattle, WA, 57 p.
- Robertson, D.M. and Imberger, J., 1994, Lake Number, a quantitative indicator of mixing used to estimate changes in dissolved oxygen. *Internationale Revue der gesamten Hydrobiologie*, v. 79, p. 159–176.
- Teal, M.J., Ettema, R., and Walker, J.F., 1994, Estimation of mean flow velocity in ice-covered channels: *Journal of Hydraulic Engineering*, v. 120, no. 12, p. 1,385–1,400.
- Walker, J.F., 1994, Methods for measuring discharge under ice cover: *Journal of Hydraulic Engineering*, v. 120, no. 11, p. 1,327–1,336.
- Walker, J.F., 1994, Statistical techniques for assessing water-quality effects of BMPs: *Journal of Irrigation and Drainage Engineering*, v. 120, no. 2, p. 334–347.
- Bannerman, R.T., Owens, D.W., Dodds, R.B., and Hornewer, N.J., 1993, Sources of pollutants in Wisconsin stormwater: *Water Science Technology*, v. 28, no. 3–5, p. 241–259.
- Fitzgerald, S.A., and Gardner, W.S., 1993, An algal carbon budget for pelagic/benthic coupling in Lake Michigan: *Limnology and Oceanography*, v. 28, no. 3, p. 547–560.
- Walker, J.F., and Graczyk, D.J., 1993, Preliminary evaluation of effects of best management practices in the Black Earth Creek, Wisconsin, priority watershed: *Water Science Technology*, v. 28, no. 3–5, p. 539–548.
- Assel, R.A. and Robertson, D.M., 1992, Climatic changes near the Great Lakes inferred from 141-year ice records *in* proceedings of the 5th International Meeting on Statistical Climatology, Toronto, Canada, June, p. 81–85.
- Krabbenhoft, D.P., Anderson, M.P., and Bowser, C.J., 1992, Reply to comment by Stauffer on “Estimating groundwater exchange with lakes using stable isotopes:” *Water Resources Research*, v. 28, no. 6, p. 1,751–1,753.
- Krabbenhoft, D.P., and Babiarz, C.L., 1992, Role of groundwater transport in aquatic mercury cycling: *Water Resources Research*, v. 28, no. 12, p. 3,119–3,128.
- Luecke, C., Lunte, C.C., Wright, R.A., Robertson, D.M., and McLain, A.S., 1992, Impacts of variation in planktivorous fish on abundance of Daphnids: A simulation model of the Lake Mendota Food Web, *in* Kitchell, J.F. ed., *Food Web Management—A Case Study of Lake Mendota*: Springer-Verlag, New York, NY, 553 p.
- Robertson, D.M., Ragotzkie, R.A., and Magnuson, J.J., 1992, Lake ice records used to detect historical and future climatic changes: *Climatic Change*, v. 21, p. 407–427.
- Elder, J.F., and Collins, J.J., 1991, Freshwater molluscs as indicators of bioavailability and toxicity of metals in surface-water systems: *Reviews of Environmental Contamination and Toxicology*, v. 122, no. 4, p. 37–79.
- Walker, J.F., 1991, Accuracy of selected techniques for estimating ice-affected streamflow: *Journal of Hydraulic Engineering*, v. 117, no. 6, p. 697–712.
- Krabbenhoft, D.P., Anderson, M.P., and Boswer, C.J., 1990, Estimating groundwater exchange with lakes, 2—Calibration of a three-dimensional, solute transport model to a stable isotope plume: *Water Resources Research*, v. 26, no. 10, p. 2,445–2,462.
- Krabbenhoft, D.P., Bowser, C.J., Anderson, M.P., and Valley, J.W., 1990, Estimating groundwater exchange with lakes, 1—Use of the stable isotope method: *Water Resources Research*, v. 26, no. 10, p. 2,445–2,453.
- Lodge, D.M., Krabbenhoft, D.P., and Striegl, R.G., 1989, Groundwater velocity and abundance of grazing of crayfish as predictors of submersed macrophyte biomass in Sparkling Lake, Wisconsin: *Limnology and Oceanography*, v. 34, no. 1, p. 235–239.
- Walker, J.F., Pickard, S.A., and Sonzogni, W.C., 1989, Spreadsheet watershed modeling for nonpoint-source pollution management in a Wisconsin basin: *Water Resources Bulletin*, v. 25, no. 1, p. 139–147.
- Wentz, D.A., Garrison, P.J., and Bockheim, J.G., 1989, Section 7—Chemical input-output budgets, *in* Knauer, D., and Brouwer, S.A., eds., *The Wisconsin Regional Integrated Lake-Watershed Acidification Study (RILWAS): 1981–1983*: Palo Alto, California, Electric Power Research Institute Report EA-6214, p. 7-1 to 7-30.

- Wentz, D.A., and Rose, W.J., 1989, Interrelationships among hydrologic-budget components of a northern Wisconsin seepage lake and implications for acid-deposition modeling: *Archives of Environmental Contamination and Toxicology*, v. 18, p. 147–155.
- Wentz, D.A., Rose, W.J., and Krohelski, J.T., 1989, Section 5—Hydrologic component, in Knauer, D., and Brouwer, S.A., eds., *The Wisconsin Regional Integrated Lake-Watershed Acidification Study (RILWAS): 1981–1983*: Palo Alto, California, Electric Power Research Institute Report EA-6214, p. 5-1 to 5-77.
- Rochelle, B.P., Church, M.R., Gebert, W.A., Graczyk, D.J., and Krug, W.R., 1988, Relationship between annual runoff and watershed area for the eastern United States: *Water Resources Bulletin*, v. 24, no. 1, February 1988, p. 35–41.
- Walker, J.F., 1988, General two-point method for determining velocity in open channel: *ASCE Journal of Hydraulic Engineering*, v. 114, no. 7, p. 801–805.
- Graczyk, D.J., 1980, Flood insurance study of Verona, Dane County, Wisconsin, 3 fig., 3 pls.
- Grant, R.S., and Graczyk, D.J., 1979, Flood insurance study of Hayward, Sawyer County, Wisconsin, 42 p.
- Graczyk, D.J., 1978, Flood insurance study of Marathon City, Marathon County, Wisconsin, 1 fig., 3 pls.
- Graczyk, D.J., 1978, Flood insurance study of Athens, Marathon County, Wisconsin, 3 figs., 3 pls.

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